ACEI ANNUAL REVIEW AND DIRECTORY OF MEMBERS 2024

ACEI ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

ANNUAL REVIEW and DIRECTORY OF MEMBERS

2024

ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

Irish Cement
A CRH COMPANY

IRISH CEMENT 85 YEARS 1938-2023

TRUSTED BY PROFESSIONALS FOR 85 YEARS

MIXING CONCRETE?

Visit our website for easy to follow videos and a handy concrete calculator.

www.irishcement.ie/howto

Scan here

CONTENTS

3 Foreword

6 Message from Minister Donohoe

7 Presidential Handover

9 Executive Board

11 Presidents and Committees

13 Training and Events Calendar

15 Overview

17 Qualifications for Membership

21 Objectives and Code of Conduct

25 Affiliations

29 Engineering Excellence Awards

35 ACEI Leadership Course

100 Awards Dinner

104 EFCA Future Leader – Patrick Kavanagh

108 EFCA Future Leader – Michael Minehane

111 BIM Requirements in the CWMF mandatory from January 2024

114 Selecting a Consulting Engineer

121 Position Papers

129 Conditions of Engagement

131 ACEI Directory of Members

189 ACEI Register of Professional Consulting Engineers

ACEI ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

46 Merrion Square, Dublin 2, D02 VF66, Ireland
Tel: +353 1 6425588
Email: info@acei.ie
Web: www.acei.ie

ACEI Annual Review and Directory of Members **2024**

Published by:
Tower Media Ltd
10 Racefield, Newcastle, Co. Wicklow.
Tel: 087 266 6568 / 01 201 1052
Email: philip@towermedia.ie
Managing Director: Philip McGaley

Printing: KPS Colour Print Ltd

ACEI 2024 Sponsor

Griffiths & Armour

Dunnes Stores Headquarters, South Great George's Street

Framing the power of independence.

The power of modular thinking.

We believe in empowering our partners with the ultimate freedom to meet the unique demands of any industry now and in the future. The CUBIC modular system is our signature enclosure system that offers the freedom to build any type of switchboard solution based on a number of standard parts along with the ultimate freedom to choose power components from any supplier.

/12

cubic.eu
info@cubic.ie

CUBIC
A ROCKWELL AUTOMATION COMPANY

FOREWORD

It is my great honour to introduce the 2024 edition of the Association of Consulting Engineers of Ireland (ACEI) Annual Review and Directory.

The ACEI Membership Directory testifies to the strength and diversity of the consulting engineering sector. It highlights some of the exemplars of the transformative work ACEI members have done in the past years. In it, you can also read about the breadth of activities the ACEI does on behalf of the sector.

I took over the role of President during a period of transition in our association. After serving as our Secretary General since 2015 Dr Sarah Ingle accepted an exciting opportunity abroad. Our sector owes Sarah a debt of gratitude for the real difference she made by influencing policy and representing our interests. This year, we welcomed Shane Dempsey to the position of Secretary General in May. Shane's transition into the role has been highly successful and he will continue as the driving force behind the association for some time to come.

The ACEI is recognised as a key stakeholder by Government and its agents. We are eminently placed to influence policies and regulations in a way that supports our profession's continued growth and prosperity. ACEI has achieved this by providing insights and data-driven recommendations to key stakeholders such as the Office of Government Procurement (OGP) and other policy makers.

We were instrumental in the introduction of liability caps to consultant contracts introduced in April. We have now moved to the next phase; the introduction of net contribution clauses and we hope to see movement there in the coming years. We are also making and pursuing key recommendations to improve the Public Works Contracts, introduce mechanisms for dealing with inflationary pressure in relation to base fees, and remove PI insurance constraints. We are also working on campaigns that will address the current skills shortage, sustainability, and digitalisation.

We have emphasised the importance to our member firms of sustainable practices, innovation, quality, and the risk reward proposition within the construction sector. Our members have played a crucial role in the development of standards and best practices, reflecting our commitment to delivering projects of the highest calibre and we continue to advocate on our members' interests with stakeholders and policy makers.

In this year's budget the government introduced the Infrastructure, Climate and Nature Fund 2030. The purpose of the fund is to ring fence required funding during financial downturns and the vagaries of the political system. It is intended that €2 billion will be placed into the fund each year for the seven years 2024 to 2030 inclusive, building up a total fund of €14 billion. This has the potential to underpin sustained sustainable growth in the economy and presents us with an incredible opportunity to continue to contribute to the development of vital infrastructure projects. As consulting engineers, our expertise and experience are invaluable in ensuring that these projects are not only delivered successfully but also stand the test of time.

SEAI HQ, Hatch Street, Dublin 2

Our involvement with the Construction Industry Council (CIC) and the Construction Sector Group (CSG) has been pivotal in elevating ACEI's profile within the construction industry. These platforms have provided us with a unique opportunity to collaborate, share knowledge, and contribute to industry-wide discussions. By actively participating in these groups, we ensure that the voice of consulting engineers is heard and respected.

The ACEI, and the Construction Industry Council, have engaged with the OGP and Minister Paschal Donohoe to chart how net contribution clauses (or equivalent) can be introduced into consultants' contracts. Both organisations welcome the introduction of liability caps in government contracts; however, net contribution clauses are essential to ensure the consulting engineering sector can deliver optimum results.

The consulting engineering profession is dynamic, and it is crucial for our members to stay current with the latest trends, technologies, and best practices. To this end, ACEI has been diligently working on enhancing our CPD program through the provision of additional webinars, bespoke seminars, and the provision of technical advice notes. By investing in your professional development, we believe we are investing in the future of our industry. Central to our sector's long-term sustainability is the ability to charge adequately for the excellent work we deliver. To this end, I believe chartered status is an absolute prerequisite and I encourage every consulting engineer to engage and achieve chartered status.

Our international partnerships continue to be a source of strength and opportunity. ACEI's associations with the European Federation of Engineering Consultancy Associations (EFCA) and the International Federation of Consulting Engineers (FIDIC) provide our members with access to a global network of expertise and best practices. This allows us to stay connected to the broader engineering community, learn from international experiences, and bring that knowledge back to our work in Ireland. These associations also reinforce our commitment to upholding the highest standards in consulting engineering.

In closing, I want to emphasise that ACEI is a member-driven organisation. Our strength lies in the dedication, passion, and expertise of our members and of the time given freely in support of the association and its aims. I encourage you all to actively participate in ACEI's initiatives, media campaigns and sub committees to maintain engagement with your fellow members and take advantage of the many resources, benefits, and opportunities we provide.

I would like to extend my heartfelt gratitude to our members' firms for their continued support, to our executive board, and our dedicated secretariat. It is through your unwavering support, hard work, and passion that ACEI thrives and advances.

Thank you for being part of the ACEI family, and I hope you find this year's publication informative and enjoyable.

James Kavanagh
President, Association of Consulting Engineers of Ireland

ATLANTIC PROJECTS COMPANY

POWER GENERATION CONTRACTORS

APC is one of the most experienced Power Industry Contractors globally. We are an EPC and Design and Build Specialist in Power Generation of both thermal and renewable technologies. APC also provides detailed energy solutions to clients in the Data Centre Industry.

WHAT WE SPECIALISE IN:

APC specialises in working closely with our clients in providing them with the most efficient energy solutions that meets their requirements in an ever changing global environment. With 50 years experience in Power Generation, APC has developed highly skilled personnel who operate in the areas of gas, BESS, Solar, Hydro and Hydrogen technologies. APC's skilled personnel also support clients with their Operations and Maintenance requirements.

WHERE ARE WE?

Headquartered in Limerick, Ireland, with offices in Derby, UK, APC also offers operations and workshop facilities in Nenagh, Ireland and Stockton-On-Tees, UK which supports clients planned and unplanned Call Outs, Maintenance and Upgrade requests.

Ireland: 00 353 61 535763
UK: 00 44 1332 897481

atlanticprojects.com

MESSAGE FROM MINISTER DONOHOE

Colleagues,
This year, the Government has taken major steps in accelerating the delivery of critical infrastructure projects that will improve and enhance the lived experience of every Irish citizen and community in Ireland.

The economic benefits of steady investment in infrastructure are universally acknowledged. That is why, my colleague, Minister McGrath, and I introduced the Future Ireland Fund and the Infrastructure, Climate and Nature Fund Bill. With a fair wind, the Future Ireland Fund could grow to €100 billion by 2035 whilst investing in measures to shape our society and to benefit our growing population.

In addition, €2 billion will be invested in the Infrastructure, Climate and Nature Fund each year from 2024 to 2030, building a total maximum contribution to the fund of €14 billion, with the €2 billion in 2024 coming from the dissolution of the National Reserve Fund. Any investment return will be retained within the Fund.

These prudent and sustainable measures should ensure a steady stream of investment into critical infrastructure projects, housing and, importantly, measures to mitigate climate change. In addition, we announced an additional investment of €250 million for capital investment in 2024, which will expedite some projects within the National Development Plan.

I note that the ACEI welcomed these measures earlier this year on the basis that these commitments bring the sort of certainty in the pipeline on which consulting engineers can base future investment plans.

I know this certainty is critical as the Government looks to the consulting engineering sector to lead the way in terms of digitalisation, green construction, and recruitment of talent into the industry. Consulting engineers are at the forefront of digitalisation and sustainability trends across thousands of construction projects. The goal across the construction industry and Government is to embed sustainability at the heart of our capital projects as we deliver the National Development Plan, Project Ireland 2040, Housing for All, and the Climate Action Plan. I understand the ACEI is supporting its members in their own sustainability and digitalisation journey and I welcome the industry's commitment to each of these themes.

These transitions are exceptionally challenging for all parties involved but there has been much progress supported by positive collaboration between the key stakeholders. That is why the Construction Sector Group (CSG), chaired by DPENDR Secretary General, David Moloney, and the CSG Innovation and Digital Adaption sub-group, chaired by PJ Rudden, will continue to be a critical engine for change in the industry and how Government engages with same. I would like to thank the ACEI and its members for their ongoing input, insight, and support for the CSG.

I have met with representatives of the construction industry, including the ACEI, over the past year. The message is consistent; if we can enhance processes within Government in areas such as procurement and planning, we can accelerate delivery of critical housing, infrastructure, and climate change related projects. Working with the OGP there has been huge progress in this regard, in the case of limited liability caps for example, and I note that these have been welcomed by industry.

I look forward to working with you in the coming years as we reshape our country's economic and social project by delivering Project Ireland 2040 in a sustainable manner.

Paschal Donohoe T.D.
Minister for Public Expenditure,
NDP Delivery and Reform

An Roinn Caiteachais Phoiblí
Sheachadadh PFN agus Athchóirithe
Department of Public Expenditure
NDP Delivery and Reform

PRESIDENTIAL HANDOVER 2023-2024

James Kavanagh,
ACEI President 2023-2024

Handover of chain of office from Brian Kavanagh, ACEI President 2022-2023 to James Kavanagh

James Kavanagh CEng, EurIng, BSc (Hons) Eng, DipEng, MCIBSE, MIEI, M Inst D, FConsEI was elected ACEI President at the association's AGM on 24 March 2023.

James is a Building Services Engineer with more than 30 years' professional experience across a range of sectors within the industry including commercial, healthcare, educational, leisure and bio-pharma.

Since joining Varming Consulting Engineers in 1990 James has progressed through the ranks. In 2000 he became a member of the management team as Associate and in 2006 became a Director and Shareholder of the company and is currently the Chief Executive Officer.

In conjunction with the executive, secretariat and sub committees James has continued to implement key Initiatives such as our Client and Stakeholder Engagement Programme, Pledge to Net Zero Commitment and the implementation of the recommendations of Bridging the Gap Report.

In addition, James has represented ACEI on the Construction Industry Council and the Construction Sector Group Committee. These platforms have provided an opportunity for collaboration, sharing of knowledge and contribution to industry-wide discussions. By actively participating in these groups, we have ensured that the voice of consulting engineers continues to be heard and respected.

James holds a Bachelor of Science (honours) degree in Building Services, is a Chartered Engineer, a Fellow of the Association of Consulting Engineers of Ireland, a registered European Engineer, and a member of the Institute of Directors. In addition, he is also a professional grade membership interviewer with Engineers Ireland and sits on the TUD Building Engineering Industrial and Academic Steering Group.

Outside of his professional activities James has active interests in DIY, photography, abstract art and sculpture.

Varming
Consulting Engineers Ltd.

sirus

SAUTER

Smart Sensor **viaSens**

The intelligent solution to maximise comfort and reduce energy consumption

- ☑ Multisensor for recording temperature, humidity, air quality, brightness, presence & sound level
- ☑ Signalling of room conditions via multi-coloured LED light ring
- ☑ Wireless communication between multiple sensors via Bluetooth Mesh Network
- ☑ Integration into room automation via Ethernet and encrypted MQTT
- ☑ Easy installation options for hollow ceilings, flush-mounted and surface-mounted
- ☑ Efficient commissioning thanks to the intuitive app

Visit our website for more on this smart building product and our BMS, HVAC, Maintenance and Energy Management Services.

sirusinternational.com

EXECUTIVE BOARD 2023-2024

President
James Kavanagh
Varming Consulting Engineers

1st Vice President
Anne-Marie Conibear
J. B. Barry & Partners Ltd

2nd Vice President
Tim Murnane
PUNCH Consulting Engineers

Honorary Secretary
Michael O'Reilly
O'Connor Sutton Cronin

Honorary Treasurer
Donnachadh O'Brien
Donnachadh O'Brien & Associates

Ex-Officio
Brian Kavanagh
Garland

Joe Burns
Arup

Ciaran McGovern
TOBIN Consulting Engineers

Marc Jones
Roughan & O'Donovan

Gemma McCarthy
Mott MacDonald Ireland

David Brennan
BDP

John Hayes
DBFL Consulting Engineers

Company Secretary
Shane Dempsey
ACEI Secretary General

solutions.ie
info@solutions.ie
+353 1 453 8959

Prefabrication
Steel Containment
Modular Wiring
Underfloor Power
Lighting Control
Desk Power
EV Charging
IoT

Solutions

ACEI PRESIDENTS

1958	Nicholas O'Dwyer
1959	Patrick J. McCarthy
1960	Gerard N. F. Barry
1961	Thomas J. O'Connor
1962	Hugh Maloney, Bart.
1963	Hugh Maloney, Bart.
1964	Joseph V. Tierney
1965	Joseph V. Tierney
1966	Eoin Ó Cionna
1967	Eoin Ó Cionna
1968	Patrick J. Mehigan
1969	Patrick J. Mehigan
1970	John D. Tighe
1971	John D. Tighe
1972	Desmond Rea O'Kelly
1973	Seán Mulcahy
1974	John Gwynn
1975	Pádraig Aonghus Ó hEocha
1976	Michael O'Doherty
1977	Patrick J. Tobin
1978	Patrick J. Tobin
1979	Robert E. Jacob
1980	Joseph McCullough
1981	John B. Barry
1982	Michael P. Lysaght
1983	Thomas J. Harney
1984	Ciaran MacIntyre
1985	Timothy O'Brien
1986	Kevin S. McLoughlin
1987	Nael G. Bunni
1988	Brian K. Reilly
1989	Donal Downes
1990	John A. Kavanagh
1991	Liam B. Connolly
1992	Dónal J. O'Donoghue
1993	Michael Ledwidge
1994	John Purcell
1995	Malachy Walsh
1996	Donal Lynch
1997	Malachy Walsh
1998	Frank McGrath
1999	Terence O'Neill
2000	Eamon O'Brien
2001	Michael J. Gannon
2002	Noel Kane
2003	John Egan
2004	Páid Cassidy
2005	Derrick Edge
2006	Kerry O'Sullivan
2007	Eamonn Waldron
2008	Joe O'Donovan
2008	Michael McSweeney
2009	John Lombard
2010	Eamon Timoney
2011	Finn Ahern
2012	Michael Moriarty
2013	Michael Garrick
2014	Brian Homan
2015	Kevin Rudden
2016	Richard Crowe
2017	Tony Horan
2018	Ciarán Kennedy
2019	Gerry Carty
2020	Conor McCarthy
2021	David McHugh
2022	Brian Kavanagh
2023	James Kavanagh

ACEI COMMITTEES 2023-2024

Presidential Team
James Kavanagh – President
Anne-Marie Conibear – 1st Vice President
Tim Murnane – 2nd Vice President
Michael O'Reilly – Honorary Secretary
Donnachadh O'Brien – Honorary Treasurer
Brian Kavanagh – 1st Past President
Shane Dempsey – Secretary General

Mechanical and Electrical
Convenor: Susan Cormican
Ray Curran
Colm Saul
Joe Hogan
Simon O'Brien
Cian Dowling
William Forsyth
Bernard Denver
Darragh Canning
Patrick Kavanagh
Margaret Dolan
John Leahy

Civil
Convenor: Audrey Phelan
Harry Meighan
Elaine Shields
Anne-Marie Conibear
Peter Morehan
Diarmuid Cahalan
Alan Curren

Structures
Convenor: Donnachadh O'Brien
Ciarán Kennedy
John Hayes
Niall Clarke
Karel Murphy
Adrian Ryan
Anthony Mulligan
Michael O'Reilly
Gavin McHugh
Mark Forbes
Tommy Morey

Construction Health and Safety – Joint ACEI / Engineers Ireland
Convenor: Ian Anderson
Adam Goff
Ronan McElwain
Michael Fleming
Jim Leahy
Dee Kehoe (Engineers Ireland)

Continuing Professional Development
Convenor: Clodagh O'Donovan
Tim Murnane
Alan Nolan
Shane Duignan

Risk / PII / Procurement – Joint ACEI / Engineers Ireland
Convenor: Michael O'Reilly
Rachel McKenna
Ciaran McGovern
Owen O'Reilly (Engineers Ireland)

Building Information Modelling
Convenor: Aonghus O'Keeffe
Brian Lahiff
Robin Evans
Siobhán Moneley
Mark Evans
Bartosz Borowiak

Building Control Regulations
Convenor: Brian Kavanagh
Michael Moriarty
Paul O'Connell

Sustainability
Convenor: Gemma McCarthy
David McHugh
Marcus Dancey
Patrice McVeigh
John Bynum
Brittany Easton
Jamie Molony

CLONMEL ENTERPRISES

BUILDING & CIVIL ENGINEERING

VOLUNTARY CONSTRUCTION REGISTER

Liffey Valley Shopping Centre Enabling Works

KCC Machinery Yard and Regional Salt Barn

Port Access Northern Cross Route

Unit R, M7 Business Park, Newhall, Naas, Co. Kildare. W91 W64H

☎: 045 981900 🌐: www.clonmelent.com ✉: info@clonmelent.com

ISO 9001 CERTIFICATION EUROPE · ISO 14001 CERTIFICATION EUROPE · ISO 45001 CERTIFICATION EUROPE · ISO 27001 CERTIFICATION EUROPE · SAFE CERT · ENGINEERS IRELAND cpd · ISEA Irish Solar Energy Association · Investors in Diversity SILVER

ACEI & AFFILIATES 2024 TRAINING AND EVENTS CALENDAR

Designing for Safety in Construction Course (DSC)	22 and 29 February (run by Engineers Ireland)
Project Supervisor Design Process (PSDP) Course	11 and 18 April (run by Engineers Ireland)
ACEI Annual General Meeting	12 March
ACEI Awards Dinner	22 March
Designing for Safety in Construction Course (DSC)	TBC
Project Supervisor Design Process (PSDP) Course	TBC
BIM Coordinators Summit 2024	TBC
ACEI Conference	23 April
Designing for Safety in Construction Course (DSC)	TBC
ACEI Graduate Development Course	Oct/Nov
Project Supervisor Design Process (PSDP) Course	TBC

ACEI WEBINARS 2024 AND STAKEHOLDER CALENDAR

Housing Finance Agency	Q1
DFHERIS Careers in Construction workshop	Q1
Green Procurement webinar	Q1
Cork County Council	Q1
Dun Laoghaire Rathdown County Council (DLRCoCo)	Q1
Minister Donohoe (CIC)	Q1
Political parties	2024
International Women's Day	Q1
Irish Water Connections Workshop	Q3
Limerick Council	TBC
Land Development Agency	TBC
Irish Green Building Council	TBC
Health Service Executive	TBC
ACEI/ACE (UK) joint event	TBC
Department of Housing	TBC
Member Roadshows (Limerick and Galway)	6 February / TBC
Department of Environment, Climate Change & Communications	TBC

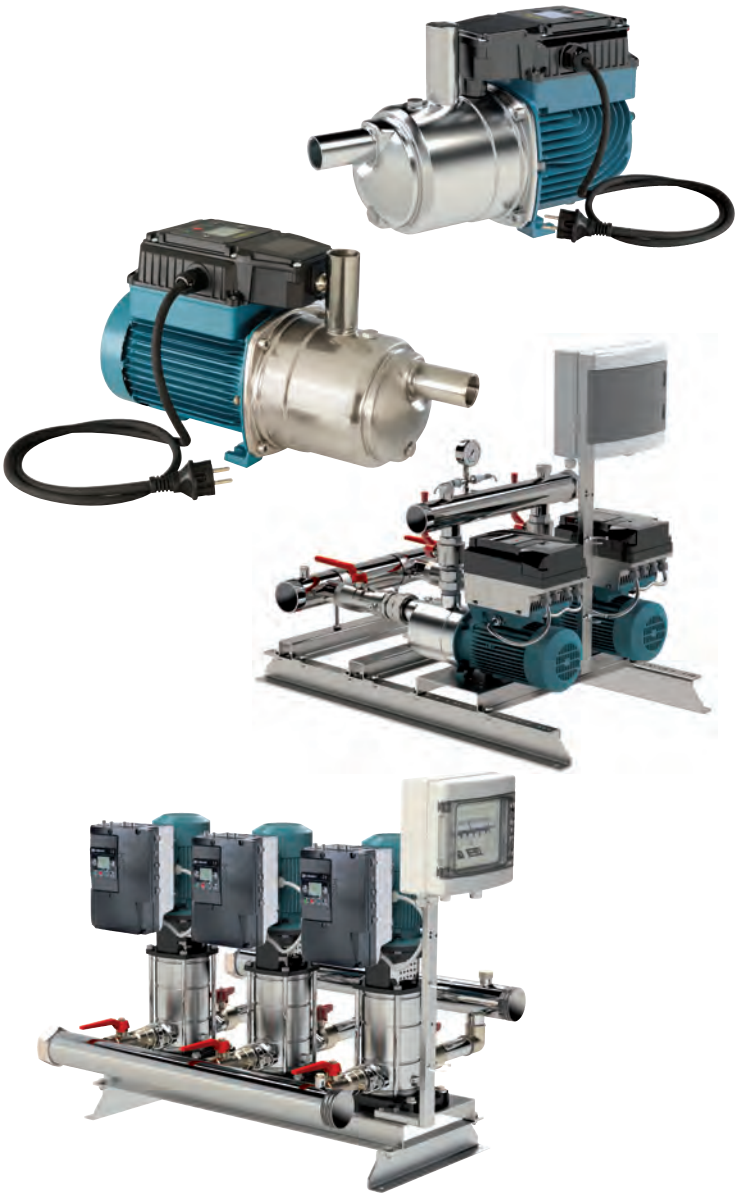
NB: Events schedule is indicative and subject to change. Please visit **www.acei.ie/events** regularly to see events and details as they are confirmed. If you have suggestions for events, webinars, training, and stakeholders to meet contact **projects@acei.ie**

VARIABLE SPEED BOOSTER SETS

For Domestic, Commercial, Industrial and Municipal Applications

calpeda®

Energy saving



think outside the box!

META Small – NEW Silent Fan-less, Energy Efficient domestic Variable Speed water booster for single houses, Q-max 5m3/h, H-max 5 bar.

META – Large house, small apartment block, Variable Speed water booster, Q-max 8m3/h, H-max 5 bar.

MXH Horizontal multi-stage pump sets, 230v Single Phase Easymat or 400v 3 Phase I-Mat variable speed control. For apartment blocks, commercial buildings, gyms, office blocks etc.

MXV Vertical multi-stage pump sets, 400v 3 Phase I-Mat variable speed control. For large apartment blocks, large hotels, commercial buildings, municipal water boosting, horticulture etc.

water passion...

For further information please contact:
Calpeda Pumps (Ireland) Ltd.
Unit 5, Old Quarry Campus,
Blanchardstown, D15 Y4EK

Tel: 00-353-1-8612200
Fax: 00-353-1-8612203
E-mail: info@calpedaireland.com

www.calpeda.com

ACEI OVERVIEW


Bon Secours Cork Extension

HISTORY

The Association of Consulting Engineers of Ireland (ACEI) is the representative body in Ireland of those professional engineering companies that offer their skills and experience in all branches of engineering to clients requiring independent engineering advice and judgement. The Association was founded in 1938. Virtually all of the significant independent consulting engineering firms in the Republic of Ireland, who qualify for membership, are represented in the Association.

OBJECTIVES

The objectives of the Association are to encourage the practice of engineering as a profession, promote ethical principles and procedures, advance the interests of all engineers in all branches of the profession but particularly those of Consulting Engineers, to increase the usefulness of the profession to the general public, and to safeguard the trust reposed in its members by clients.

ETHICS

A member may not be directly or indirectly involved in any business enterprises which would lead to conflicts of interests and the Association's Executive Board monitors the activities of its members to ensure that ethical standards are maintained at all times.

PROFESSIONAL CODE

Central to the philosophy of the Association has always been that professional fees paid by clients are the member's only remuneration from the projects undertaken. This freedom from conflict of interest is meant to assure objective, unbiased advice from consulting engineering enterprises. As part of its concern for quality of service the Association promotes quality based selection as the most appropriate procedure for the appointment of consulting engineers and the settlement of their fees.

For procedures recommended by the Association for reaching agreement on fees see Selecting a Consulting Engineer pages 116-122.

ENGINEERING DISCIPLINES

ACEI member firms offer design and supervision services in all the main engineering disciplines including civil, structural, mechanical and electrical services, fire and process engineering.

Most firms tend to specialise in one or other of the major branches of project engineering but some cover a number of such specialities.

Some member firms are capable of providing additional professional services such as quantity surveying and architecture as optional in-house facilities but these services may also be provided in association with other independent firms recognised in their own field.

ACTIVITIES OF ASSOCIATION

The ACEI negotiates with various public and private client bodies on behalf of its members on important issues such as quality-based selection of consulting engineers, professional liability, health & safety etc.

The ACEI is consulted on a regular basis by Government Departments to present the views of the profession in relation to forthcoming legislation.

ACEI also makes representations to public and private sector client bodies in relation to business practice procedures in the appointment of consulting engineers.

THE ACEI

- Publishes model Conditions of Engagement, suitable for presentation to clients and advises members members on terms of conditions of engagements and related contractual issues including collateral warranties.
- Arranges regular seminars on best practice issues relevant to the profession and publishes advice notes to members on a range of business issues.
- Maintains a database of its members, and makes this information available to clients on its website.
- Assists clients seeking suitable consultants for specific projects by nominating a selection of firms whose experience and geographical location best meets their requirements.
- Publishes a Directory of members every year, which is circulated widely to client organisations to assist them in selecting a consulting engineering enterprise. Selecting a consultant is one of the most important decisions an owner or client makes. The success of any project often depends upon obtaining the most able, experienced and reputable expertise available.

Kevin Street New
Garda Headquarters

ACEI QUALIFICATIONS FOR MEMBERSHIP

Donegal Town Garda Station - Refurbishment & Extension

MEMBERS OF THE ASSOCIATION

(a) An ACEI Fellow Professional Consulting Engineer (FConsEI) who has set up an office and works as a sole practitioner.

(b) A professional firm in which all or a majority of the partners or all or a majority of the directors and shareholders with voting rights of a company qualify as ACEI Fellow Professional Consulting Engineers provided that only a minority of other suitably professional qualified persons or bodies, who are not directly or indirectly concerned or interested in commercial, manufacturing, or contracting interests such as would tend to influence the firm in its independent engineering professional judgement and who adhere to the ACEI Constitution and Code of Conduct may also be partners, proprietary directors or shareholders.

(c) An Engineering Consultancy, operating in Ireland in which ACEI Fellow Professional Consulting Engineers have control of the Consultancy's affairs. Provided that the consultancy is not a subsidiary or Holding Company of a Company which is primarily engaged in manufacturing or contracting, is in substance owned by the State or a similar public body, or is in substance the Design Department of a development, manufacturing or contracting enterprise.

QUALIFICATIONS FOR ACEI MEMBERSHIP

1. A sole trader, firm or Engineering Consultancy Company seeking membership of the Association shall be an organisation that:

i. Is primarily engaged in the business of offering impartial technology-based intellectual and design services for the development of the built, and natural environment, to clients for a fee, and

ii. Is managed and has its operating policies determined by people whose professional qualifications, experience and conduct are in keeping with the requirements of the Constitution and Code of Conduct of the ACEI, and

iii. Has a good professional reputation and ethical standards, and

iv. Is controlled and managed by persons all or a majority of whom are ACEI Fellows or who are qualified to become Fellows and who have applied, and

v. Is not a subsidiary or Holding Company of a Company which is primarily engaged in manufacturing or contracting, and

vi. Is not in substance owned by the State or a similar public body, and

vii. Is not in substance the Design Department of a development, manufacturing or contracting Company, and

viii. Is resident or incorporated on the island of Ireland and is conducting business in Ireland, and

ix. In the opinion of the Executive, has appropriate persons with knowledge and experience in the field of consulting engineering or related professions to furnish impartial and competent advice to clients, and

x. Undertakes to maintain appropriate professional indemnity insurance cover, and

xi. Has been in business as a consulting engineering company for a period of not less than three years immediately prior to application for membership or

xii At least 50% of its shareholders or management have been registered as Fellows of the Association in an existing ACEI Company, and

xiii. Undertakes to abide by the Constitution of the Company for the time being in force or as they may thereafter be extended or amended, and to pay the annual subscription, and

xiv. Operates as a financially independent entity, free from subsidies or preferences, and

xv. Submits a statement annually confirming that the member continues to satisfy the membership requirements set out in the Constitution of the Company.

ACEI REGISTERED PROFESSIONAL TITLES

2. The Registered Professional Titles of ACEI are: Fellow Professional Consulting Engineer (FConsEI) and Registered Professional Consulting Engineer (RConsEI)

(a) **ACEI Fellow (FConsEI)**

A candidate seeking registration as an ACEI Fellow (FConsEI):

i. Shall hold a third level qualification
Shall be a Chartered Engineer or
Possess a professional title equivalent to that of a Chartered Engineer, from
a professional body within their professional discipline as approved by the Association, and

ii. Shall have not less than seven years' professional experience as approved by the Association, and

iii. (a) Shall have been practising as a Professional Consulting Engineer or in a similar capacity within their own professional discipline for a period of not less than 3 years immediately prior to their application for registration with the Association, or
(b) Shall be a partner or proprietary director or managing at a level of responsibility where they are reporting to the owners in a Consulting Engineering organisation, and

iv Shall be engaged wholly or mainly in practice as a Consulting Engineer either individually or as a Partner or Proprietary Director or in an equivalent professional capacity as a Partner or Proprietary Director or in control of the management decisions in a Consulting Engineering organisation, and

v. Shall be directly responsible for dealing with clients and committing the firm to consultancy or other financial agreement.

(b) **ACEI Professional Consulting Engineer: (RConsEI)**

A candidate seeking registration as an ACEI Professional Consulting Engineer (RConsEI):

i. Shall hold a third level professional qualification, and

ii. Shall be a Chartered Engineer, and

iii. Shall be employed in an ACEI Member Company exercising a management role as a consulting engineer,

iv. Shall have not less than four years' professional engineering experience as approved by the Association, and

v. Shall have been practising as a Professional Engineer for a period of not less than 4 years immediately prior to their application for registration with the Association and

vi. Shall have completed an ACEI approved Business Course.

CORPORATE AFFILIATE MEMBERSHIP

Corporate Affiliate Membership

Corporate Affiliate Membership is open to any engineering related professional Company, which does not fulfil the requirements for full membership, but:

- which has an interest in the consulting engineering industry
- has been in business for a period of not less than 3 years immediately prior to application for membership
- supports the ACEI Objectives and agrees to abide by the ACEI Code of Conduct.

In general terms, ACEI encourages Affiliate Members to play an active role in the Association. This is, on the one hand, an advantage for Affiliate Members. At the same time, Affiliates bring a wealth of varied experience to the consulting engineering industry and to ACEI.

BENEFITS FOR CLIENTS IN SELECTING AN ACEI MEMBER COMPANY

Selecting a consulting engineer for a project is the most important decision a client makes. The success of any project depends on obtaining the most technically competent, experienced and reputable expertise to ensure a successful sustainable project in line with the client's requirements and in harmony with the built environment.

ACEI Membership Stands for:

- Ethics and Integrity
- Reliability
- Impartial Professional Advice

Membership Guarantees:

- Academic qualifications
- Professional experience
- Expertise and know-how

The Dimplex E-Heat system for apartments

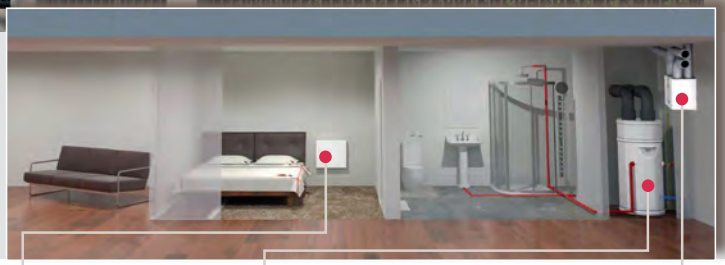
The innovative heating, ventilation and hot water solution for NZEB compliant, new-build apartment schemes.

Dimplex E-Heat is a complete, proven and comprehensive HVAC system-solution for domestic hot water, space heating and heat recovery ventilation, that supports delivery of NZEB compliance in new-build multi-unit apartment or housing schemes.

The E-heat System enables rapid installation and straightforward commissioning for contractors, is made up of proven, next generation, plug-and-play Dimplex components, designed specifically for maximum compatibility and ease of operation.

Controlled by the Dimplex Smart Hub, E-Heat can also be combined with the Dimplex Control App, for complete end-user control and energy-usage monitoring.

Enabling the transition to a sustainable world.



1. **Dimplex Q-Rad** *is a smart electric heater. It knows precisely how long it takes to get to the desired temperature and when to turn off as it approaches that target temperature. This minimises the energy that it uses, while maximising comfort – keeping you warm for the lowest possible cost.*

2. *The* **Dimplex Edel** *hot water heat pump uses an integrated high-performance compressor to extract energy for hot water production from the external air using insulated duct work. Using up to three times less electricity than direct acting water heaters, it produces renewable energy to aid building regulation compliance.*

3. *The* **Xpelair** *heat recovery ventilation system is key to a healthy home, designed to combat condensation, mould and pollutants to ensure the air you're breathing is clean, fresh and healthy. Recovering up to 90% of the heat from the stale air leaving the building, ensuring a continuous fresh air supply while maintaining the maximum efficiency for the building and its occupants.*

Dimplex®

Visit **www.glendimplexireland.com** for more information on our heating solutions. Email: **salesireland@glendimplex.com** or call: **+353 (0)1 8424833**

ESG

ENVIRONMENTAL | SOCIAL | GOVERNANCE

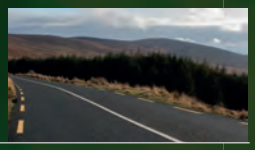
Kilsaran

Low Carbon Solutions

CARBON CURE

Carbon Cure™

Thermaphalt
Warm Mix Asphalt



Materials Recovery & Recycling

Reclaimed Asphalt Pavement (RAP)

Climate Adaptation & Mitigation

ClimaPave
Permeable Paving

ClimaPhalt
Porous Asphalt

External Wall Insulation

Planet People Performance Solutions

www.kilsaran.ie

ACEI OBJECTIVES AND CODE OF CONDUCT

1. OBJECTIVES

The objectives of the Association are:

(a) To promote the advancement of the profession of consulting engineering by:

- Encouraging its members to have regard to the public interest particularly in the areas of health and safety in the discharge of their duties;
- Seeking to ensure that integrity, competence and quality remain the hallmarks of Association membership and to find ways of encouraging members to uphold these principles;
- Acting for and protecting the interests of practising Consulting Engineers;
- Encouraging its members to deliver a quality service to clients;
- Developing and maintaining a Code of Conduct for members;
- Encouraging its members to carry an appropriate level of Professional Indemnity Insurance;
- Dealing with complaints against members;
- Preparing advisory notes on new legislation and regulations affecting engineering and construction;
- Identifying and seeking to influence the course of emerging issues, at local, European and international levels that will impact on Members;
- Preparing and enforcing rules, bylaws and disciplinary procedures for Members that recognise natural justice, the demands of society, the changing and competitive nature of the business environment, and the need for a high standard of professional conduct;
- Preparing and keeping up-to-date Conditions of Engagement of Consulting Engineers for contracts of all types;
- Promoting the status of Irish Consulting Engineers by being a voice on their behalf on relevant key issues affecting society;
- Assisting in the development of engineering education through establishment of interfaces with Universities, Colleges and other accredited Institutions;
- Developing a programme of continuous professional development courses and seminars to enable members and their staff to maintain the necessary expertise in the areas of business, current regulations and codes of standards and best practices within the constantly changing professional, business, legal and regulatory environment in which they operate;
- Ensuring that a strong Irish-based Consulting Engineering profession is developed and strengthened to support the ongoing socio-economic development of the country, including the protection of our heritage and the environment;
- Influencing public bodies on procurement procedures and the use of Quality Based Selection (QBS) for the procurement of consulting engineering services;
- Provide international links to other similar organizations through its membership of International Federation of Consulting Engineers / European Federation of Engineering Consultancy Associations (FIDIC / EFCA).

Citrix Office

(b) To associate for consultation and co-operation those engineers who are primarily engaged in practice as consulting engineers in Ireland.

(c) To watch over, promote and protect the interests and rights of the profession of consulting engineering in Ireland.

(d) To afford government departments, professional institutions, public bodies, educational and technical institutions, trade associations and other institutions in Ireland, facilities for conferring with and ascertaining the collective views of consulting engineers.

(e) To assist in the introduction, interpretation and application of rules of professional duties and conduct.
(f) To outline the qualifications and duties of a consulting engineer and their proper relations with their clients, and to provide a standard of accepted consulting engineering practice.
(g) To purchase, lease, hire, occupy or otherwise acquire lands, house, rooms, offices, buildings, wharves, quays or depots, ships, boats, hulks, and other real or personal property, and any right, easement or privilege necessary or convenient for the purpose of carrying out the objects and purposes of the Association, and for the like purpose to engage or dismiss any person or persons.
(h) To take any gift of property whether subject to any special trust or not for any one or more of the objects of the Association.
(i) To sell, manage, lease, mortgage, dispose of, invest or otherwise deal with all or any part of the property of the Association.
(j) To borrow money with or without security as may be deemed necessary and expedient for carrying out the purposes of the Association.
(k) To draw, make, accept, endorse, discount, execute and issue promissory notes, bills of exchange, bills of lading, warrants and debentures and other negotiable and transferable instruments.
(l) To establish and support, and to aid in the establishment and support of any other association formed for all or any of the objects of the Association if considered desirable by the Association.
(m) To contribute to any benevolent fund, for benefit of the members, if considered desirable by the Association.
(n) To secure mutual support and co-operation among its members.
(o) At the discretion of the Association to assist, protect and indemnify members who may, on the direction of the Association, help either in carrying out the objects of the Association or in giving effect to its decisions or desires, or who may be injured or prejudiced by reason of their giving effect to any such decision or desire. Provided always that the Association shall not support with its funds any object or endeavor to impose or procure to be observed by its members or others; any regulation, restriction or condition which, if an object of the Association, would make it a trade union.
(p) To do all such other things as are incidental or the Association may think conducive to the attainment of the above objects or any of them.
(q) To do all such other things as are incidental or the Association may think conducive in order to uphold the Code of Conduct of the Association.

CODE OF CONDUCT

1. Role of the Association

The Association is a professional body representing the business and professional interests of firms and individuals engaged in the practice of Consulting Engineering. It acts as the voice of the Consulting Engineering profession; assists in resolving issues of importance for clients and Consultants alike; and contributes to the development of relevant public policy and papers through involvement in Working Groups, Government Committees, and related fora.

2. Code of Conduct

The Association believes that it is essential that its Members should always act in an ethical and principled manner, and it therefore requires all Members to abide by a strict Code of Conduct which is supported by a written Complaints Procedure.

2.1 General

In carrying out its professional duties, an ACEI Member shall:

- Have full regard to the needs of society to protect the public interest;
- Recognise the fundamental role that a healthy, functioning environment has for the wellbeing of society and that this is under threat from climate change;
- Act consistently with the United Nations' 2030 Agenda for Sustainable Development;
- Preserve the integrity of the profession of consulting engineers; and
- At all times provide an impartial service of high quality in accordance with this code.

2.2 Standards & Codes

- Members shall endeavour to respect and comply with the regulations, standards and codes of practice appropriate to their profession and to the task entrusted to them.

2.3 Competence & Standards of Training

- Members shall maintain knowledge and skills at levels consistent with development in technology, the needs of the environment, legislation and management and exercising reasonable skill care and diligence in the services rendered to the client.
- Members shall perform services only when competent to perform them.
- Members shall be committed to the principle of professional development of the management team and should undertake appropriate programmes of staff training.

2.4 Professional Control

- Members shall organise their work for a client in such a way that it is under the direct control of appropriate

UCD Confucius Centre

professionally qualified or suitably experienced persons.

2.5 Remuneration

- Members shall be remunerated solely by the client. No direct or indirect benefit shall be received from any other party.
- Remuneration agreed between a member and its client should be such as to enable the Member to carry out its responsibilities to the client adequately in every respect.
- Members shall neither offer nor accept remuneration of any kind which in perception or in effect either: (a) seeks to influence the process of selection or compensation of Members and / or their clients or (b) seeks to affect the member's impartial judgement.

2.6 Impartiality

- Members shall be impartial in the provision of advice, judgment or decisions.
- Members shall inform the client of any potential conflict of interest that might arise in the provision of services to the client
- Members shall not accept remuneration which prejudices independent judgment.
- Members shall not accept from any persons or company, any kind of favour which might compromise the impartiality of the member's decision, or prejudice their duties to their client.
- Members shall not be the medium of payments made on their client's behalf (unless specially so requested in writing by their client) but shall only issue certificates or recommendations for payment.

2.7 Conflict of Interest

- Members shall avoid all conflict of interest with their client.
- Members shall promptly inform clients of any shareholdings, association, connections or other commercial interests which the client might consider would impair the impartiality of their professional advice or the quality of their service.

2.8 Fairness to Others

- Members shall neither carelessly nor intentionally do anything to injure the reputation or business of others.
- Members shall neither directly nor indirectly knowingly attempt to take the place of another member already appointed for specific work.
- A Member shall build its professional reputation on the quality of its service and shall not compete unfairly with others.
- A Member shall not pay, or offer to pay, any commission or contribution in order to secure or retain work.
- A Member shall not falsely, maliciously or recklessly, directly, or indirectly, injure the professional reputation of another member.

2.9 Reviewing the Work of Others

- A Member shall not knowingly review or appraise the work of another engineer for the same client, without notifying such engineer.

2.10 Taking Work Over

- A Member shall not take over the work of a fellow Member, for the same client, unless it has satisfied itself, as far as it reasonably can, that the connection


Irish World Academy of Music and Dance

of such Member with the work has been terminated; that the legitimate interests of the member have been protected, and that it has notified the member concerned and received a request in writing from the client to take over the work.

- A Member shall not take over the work of another member until that Member's appointment has been terminated by the client in writing.
- A Member shall not knowingly solicit project work from a client who has a Member or Members already engaged for the same project.

2.11 Clarity of Engagement

- Members shall ensure that the terms of their engagements are clearly stated and in writing.

2.12 Quality Management

- Members are encouraged to adopt and maintain a system of quality management.

2.13 Indemnity Insurance

- Members shall maintain appropriate professional indemnity insurance cover.

2.14 Working Overseas

- The Association is a member of the International Federation of Consulting Engineers (FIDIC) and of the European Federation of Engineering Consultancy Associations (EFCA).
- Members shall order their conduct according to the rules and standards of those bodies when working in a country where a member of those bodies is constituted.

2.15 Bringing the Association into Disrepute

- A Member shall not by its actions bring the Association into disrepute.
- A Member shall not act, or conduct itself in a manner which is, in the opinion of the Executive Committee, prejudicial to its position as a Consulting Engineering enterprise, or to the interests of the Association or its Members.
- A Member shall not knowingly act in a manner derogatory to the honour, integrity or dignity of the Association or any of its Members.

2.16 Advertising of Services

- Discreet advertising is permitted. Such publications and expressions of opinion shall be moderate and discreet in tone and content, factual and capable of verification or if not so capable of verification then clearly made as expressions of opinion.
- A Member shall not unfairly criticize either explicitly or by implication the work of another member.
- Statements shall not in any way bring discredit to the Association or to the profession.
- Signboards or plates may be placed on Members' premises or on work sites.
- Commemorative tablets or inscriptions bearing Members' names may be placed on completed works.

2.17 ACEI Ethics Committee

- Members shall co-operate fully with the ACEI Ethics Committee in any inquiry with regard to a complaint brought against a member under this Code of Conduct.
- Members shall abide by the decisions of the ACEI Executive Committee.

3. COMPLAINTS AGAINST A MEMBER COMPANY OR AN ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

The Association is seriously concerned at all times with any breaches of the Constitution or Code of Conduct of the Association and views with particular concern any action by a member or an ACEI Registered Fellow Consulting Professional Engineer which may directly or indirectly injure the professional interest of another member or the Association.

Allegations regarding breaches of the Code of Conduct shall be considered by the Association's Ethics Committee which is one of the Advisory Committees established by the Executive Committee. The ACEI Code of Conduct is mainly concerned with the ethical standards and the propriety of actions taken by members. The ACEI Executive Committee shall undertake to assist where possible in the resolution of a complaint made by a client(s) against a member or a complaint made by a member against another member.

In relation to a complaint against an ACEI Fellow Professional Consulting Engineer (FConsEI), if in the judgment of the Executive Committee it is appropriate to do so the matter shall be referred to the Ethics & Disciplinary Committee of the respective Chartered Institution of the person concerned.

ACEI AFFILIATIONS


University of Limerick - Analog Devices Building

LOCAL AFFILIATIONS

The Association is a member of a number of important ad-hoc external bodies and actively participates in their work.

The most significant of these are:

CONSTRUCTION INDUSTRY COUNCIL (CIC)

The Construction Industry Council is comprised of representatives (usually President and CEO), of the six largest built environment related bodies operating in Ireland, including the Association of Consulting Engineers of Ireland (ACEI), Engineers Ireland, the Construction Industry Federation (CIF), the Royal Institute of the Architects of Ireland (RIAI), the Society of Chartered Surveyors Ireland (SCSI) and the Building Materials Federation (BMF). The Council meets on a bi-monthly basis, and has regular meetings with other professional bodies, government and international stakeholders.

The overarching aims of the CIC are to deal with issues of common interest for the construction industry, and to act as the cohesive voice for the sector on high-level policy issues by engaging with stakeholders accordingly. The CIC complements the work of its member associations by undertaking strategic reports, engaging external expertise and providing a united voice on mutual areas of concern and interest.

CONSTRUCTION IT ALLIANCE (CitA)

CitA works to actively encourage the Irish Construction sector to take full advantage of current and emerging Information and Communications Technologies. The Alliance transmits the latest information on technology trends through monthly events and annual conferences with experts in key areas whilst providing networking opportunities with peers. CitA has robust links with the professional bodies and representative organisations of the built environment sector. These include ACEI, CIAT,

CIBSE, CIF, CIOB, Engineers Ireland, GMIT, ICES, IPFMA, IStructE, Law Society, LYIT, NDFA, OPW, RIAI, SCSI, as well as third-level academic institutions in Ireland.

OTHER INTERNAL COMMITTEES

In addition to the foregoing, ACEI is also a member of the following committees and participates in their activities:

- Construction Sector Group
- Irish Coalition of Service Industries
- Electrical Technical Council of Ireland
- Irish Inter Professional Association
- National Standards Authority Standing Committees

EUROPEAN & INTERNATIONAL AFFILIATIONS

ACEI is a member of the following overseas bodies.

EFCA

- Founded in 1992, EFCA (The European Federation of Engineering Consultancy Associations) is the only federation to represent the engineering consultancy industry in Europe. It comprises 31 member Associations from 28 European countries, representing over 10,000 firms, with more than one million employees in engineering and related services and annual turnovers in excess of €20 billion.
- Is a non-profit making and independent professional organisation committed to representing the profession in Europe and promoting engineering consultancy and related services.
- Represents the interests of the profession to the European institutions so that directives and regulations affecting the work of engineering consultancy and related services are fair to both the profession and society as a whole.
- Represents the interests of its members to lending agencies such as the World Bank and the European Bank for Reconstruction & Development, and to other international institutions.
- Requires all members to comply with its Code of Conduct governing the performance and quality of consulting engineering services.

In view of the importance of the EU in the Irish context ACEI has been actively involved in the work of EFCA since its inauguration. Individual members such as Donal Lynch and Jack Kavanagh have participated on EFCA Task forces dealing with various EU Directives i.e. health & safety, public procurement and related issues.

The ACEI Executive Director, Anne Potter, was also an EFCA Vice-President from 2000-2003, Kevin Rudden, ACEI Past President undertook the role of EFCA President 2017-2020 and assumed the role as a member of the EFCA Board of Directors 2021-2024 to complete the term of former ACEI Secretary General Sarah Ingle.

FIDIC

FIDIC (The International Federation of Consulting Engineers) represents the International business interests of firms belonging to national Member Associations of engineering-based consulting firms. The members of each national association comply with FIDIC's Code of Ethics which calls for impartial advice, competence and fair competition and endorse FIDIC's Policy Statements and Statutes.

Founded in 1913, FIDIC membership today numbers 100 Member Associations in different countries representing some 540,000 professional consulting engineers worldwide.

Membership of FIDIC is restricted to one Member Association per country and ACEI is the Irish member. However companies and organisations may join FIDIC as Affiliate or Sustaining Members if there is no national Member Association in their country.

FIDIC PUBLICATIONS

FIDIC publishes international contracts and agreements which are used by World Bank and other funding agencies. Given the rapidly changing marketplace and contractual relationships, i.e. Design Build (DB), Public Private Partnerships (PPP), Design Build Operate (DBO), etc. FIDIC has over the past few years revised its core suite of documents and developed additional contracts to meet the needs of the market. These are now being used by Irish public bodies including the Dept. of Environment, in relation to DB and PPP contracts.

ACEI is a strong supporter of FIDIC and given its relatively modest size, is quite active in the drafting of the various FIDIC contract and construction liability documents through the efforts of individual members including Dr Nael Bunni and Des Barry. The President and the Secretary General also participate in the FIDIC Annual Conference and General Assembly Meeting. Sarah Ingle, ACEI Secretary General, was a member of the FIDIC Advisory Council supporting the FIDIC Board during 2018-2020.

Over the years ACEI has developed excellent working relationships with a number of FIDIC Member Associations. ACEI is therefore able to obtain a rapid response to queries raised by members as well as facilitating networking opportunities or contacts for members in other countries.

BUILDERS SISK CONTRACTORS
Established 1859

John Sisk & Son

CREATING PLACES FOR FUTURE GENERATIONS

Sisk were winners at the Irish Construction Excellence (ICE) Awards 2023 in the Civil Engineering category for its completion of Howth Middle Pier.

ICE Awards Irish Construction Excellence Awards 2023 Winner

WWW.JOHNSISKANDSON.COM

ACEI ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

ACEI ENGINEERING EXCELLENCE AWARDS 2023

ACEI PROJECT AWARDS 2023

The ACEI Engineering Excellence Awards were presented by Brian Kavanagh ACEI President 2022-2023 at the annual awards dinner in the Shelbourne Hotel on 31 March

Engineering Excellence Awards

To stimulate excellence and innovation among ACEI members the annual Engineering Excellence Awards are presented for completed projects. These awards are conferred on ACEI member firms whose project is considered by the adjudicator as the best of those nominated in each category.

The awards this year demonstrate the commitment of ACEI member firms to pursuing projects that will benefit communities and the environment. It is also important that all projects are well planned and designed to address resilience, long-term sustainability and societal impacts in line with the association's Sustainability Vision and Commitment to Climate Action.

Sincere thanks are extended by ACEI to Tony Horan, ACEI President 2017 and to Eamon O'Brien, ACEI President 2000 for their painstaking work in adjudicating the 2023 Engineering Excellence Awards and to Derrick Edge, ACEI President 2005 for his adjudication of the ACEI Future Leader Award.

2023 – Project of the Year: RPS, **CCS Study to Process & Store CO_2**

Winner – 2023 Project of the Year

Paul Deane, Project Manager & Business Development, Bechtel; Alan Curran, Senior Director and Ciarán Butler, Director – Gas & Utilities, RPS and Gearóid Fitzgerald, CCS Commercial Manager, Ervia accept the award for **CCS Study to Process & Store CO_2**

Winner – Civil / Large Category

Aidan Cleary, Director and Ireland Transport Infrastructure Leader; Jonathan Case, Associate – Designer's Site Representative; A ttila Gazdag, Senior Civil Engineer and Sean Mason, Director Ground Engineering, Arup accept the award for **Dublin Airport North Runway**

Winner – Civil / Medium Category

Ben Gaffney Technical Director and Maurice O'Donoghue Director, J.B. Barry & Partners accept the award for **Lee Road Water Treatment Plant**

Highly Commended – Civil / Medium Category

Ciarán Butler, Director – Gas & Utilities; Alan Curran, Senior Director, RPS and Adrian Cotter, Design Engineering Manager, Gas Networks Ireland for **Ballough AGI Bypass Project**

Winner – Structural / Medium Category

Conor Vaughan, Project Engineer, Barrett Mahony Consulting Engineers; Paul Reilly, Associate, RKD Architects and Ciarán Kennedy, Managing Director, Barrett Mahony Consulting Engineers accept the award for **20 Kildare Street**

Winner – Structural / Large Category

Amy Monahan, Structural Project Engineer and Hugh Gray, Consultant, Arup; with Brian Kavanagh, ACEI; Conor Hayes, Associate – Structures and Sustainability; Sergey Bityuskiy, Senior Structural Engineer and Bruna Araujo, Senior Electrical Engineer, Arup accept the award for **Bolands Quay Redevelopment**

Joint Winner – Mechanical & Electrical / Medium Category

Martin Healy, Associate Director J.B. Barry & Partners; Daniel Sharkey, Uisce Éireann; Julianne Morrissey, Dublin City Council; Declan Diamond, Uisce Éireann and Inês Croft EPS accept the award for **Main Lift Pump Station, Pigeon House Road**

Joint Winner – Mechanical & Electrical / Medium Category

Arthur Ward, Project Manager, HSE West Estates Department; Deirdre Killeen, Projects Officer, Galway University Hospitals; Ian Pudney, Company Director, Rhatigan Architects; Sean Neary, Company Director, Peter Wyse, Senior Sustainability Engineer and Joe Greene, Chairman, Varming Consulting Engineers Limited; Mary Keane, Clinical Nurse Manager 2, Merlin Park University Hospital accept the award for **Merlin Park University Hospital: New Orthopaedic Theatre Block**

Winner – Mechanical & Electrical / Large Category

Steven Hanning, Mechanical Project Engineer; Elana Olefirenko, Associate Electrical; Martin McGrath, Group MD and Brian Farrington, Associate Mechanical, O'Connor Sutton Cronin (M&E) accept the award for **The Exo Building**

Winner – Sustainability Natural Environment Category

Jim Oliver, Managing Director; Alan Hurley, Principal Consultant, and Ciarán Duignan, Associate Director, Nicholas O'Dwyer Limited accept the award for **Clifton Sewage Treatment Plant**

Winner – Sustainability Built Environment Category

Patrice McVeigh, Associate, O'Connor Sutton Cronin; Marcus Hayden, Development, RGRE and Sinéad Butler, Senior Engineer, O'Connor Sutton Cronin accept the award for **Spencer Place, North Wall Quay**

Winner – Project Management Category

Joe Burns, Director and Ireland Country Leader, Arup accepts the award for **Digital Manufacturing Ireland (DMI)**

Winner – Overseas Category

Dan O'Malley, Associate; Martin McGrath, Group Managing Director, O'Connor Sutton Cronin and Paddy Glennon, Senior Design Manager, Ballymore accept the award for **Goodluck Hope, London, UK**

Winner – Innovation / Small-Medium Category

John Farragher, Engineer Grade 1 – East Region, Department of Agriculture, Food and the Marine and Pat Parle, Associate, MWP accept the award for **Howth Fishery Harbour Centre: Middle Pier Upgrade**

Winner – Innovation / Large Category

Seamus Doyle, Associate; Martin McGrath, Managing Director, O'Connor Sutton Cronin and Graham Ovenden, Associate, MCA accept the award for **The Exo Building**

Winner – Microfirm Category

Ken Moriarty, Managing Director and David Seaver, Associate,Torque Consulting Engineers accept the award for **Tropical Fruit Warehouse**

Brian Kavanagh presents the 2023 ACEI President's Award to Dr Sarah Ingle, ACEI Secretary General

KAESER COMPRESSORS

Your partner for efficient compressed air solutions

- The revolutionary **SIGMA AIR MANAGER 4.0** is the key to seamless integration of your compressed air supply into **Industrie 4.0** production environments
- Guaranteed optimum energy efficiency and dependable compressed air availability thanks to **3-D^{advanced} Control**

KAESER combines outstanding efficiency and simple operation with maintenance-friendly design

From the workshop to industrial plants, from the mine to the petroleum refinery: Customers throughout the world rely on KAESER quality compressed air systems „Made in Germany“ and benefit from optimum compressed air availability combined with low life-cycle costs.

The worldwide KAESER AIR SERVICE network as well as almost 7 000 employees throughout the world ensure that you get the very best from your compressed air system – for low compressed air costs with maximum availability.

KAESER Compressors Ltd – Units 43-44 Western Parkway Business Park – Ballymount – Dublin 12
Telephone: +353 1 4565433 – info.ireland@kaeser.com – www.kaeser.com

ACEI LEADERSHIP COURSE 2023

James Kavanagh, CEO, *Varming Consulting Engineers Ltd*

Anne-Marie Conibear, Director, *J.B. Barry & Partners Ltd*

Tim Murnane, Managing Director, *PUNCH Consulting Engineers*

David McHugh, Senior Director, *RPS*

Valerie O'Keeffe, CEO, *ClarityVP Consulting*

Conall Boland, Senior Consultant, *RPS*

Professor Finian Buckley, Professor of Work & Organisational Psychology DCU Business School

Graeme Tinney, Europe DAC Chief Executive Officer, *Griffiths & Armour*

Gráinne Wolfe, Director, *Arup*

Kevin Rudden, CEO, *Garland*

Kingsley Aikins, CEO, *The Networking Institute*

Ron Immink, Intrapreneur & Professional speaker

Killian Dorney, Partner, *Beale & Co*

Nearly 60 participants completed the prestigious ACEI leadership programme in November.

The three-day course featuring 12 speakers – all leading experts and industry practitioners included the ACEI's next two incoming presidents; Anne-Marie Conibear, J.B Barry & Partners Ltd and Tim Murnane, Punch Consulting Engineers.

The three-day programme focused on expanding the business skills of young consulting engineers with a view to improving their ability to 'get work, do work and get paid for the work!'

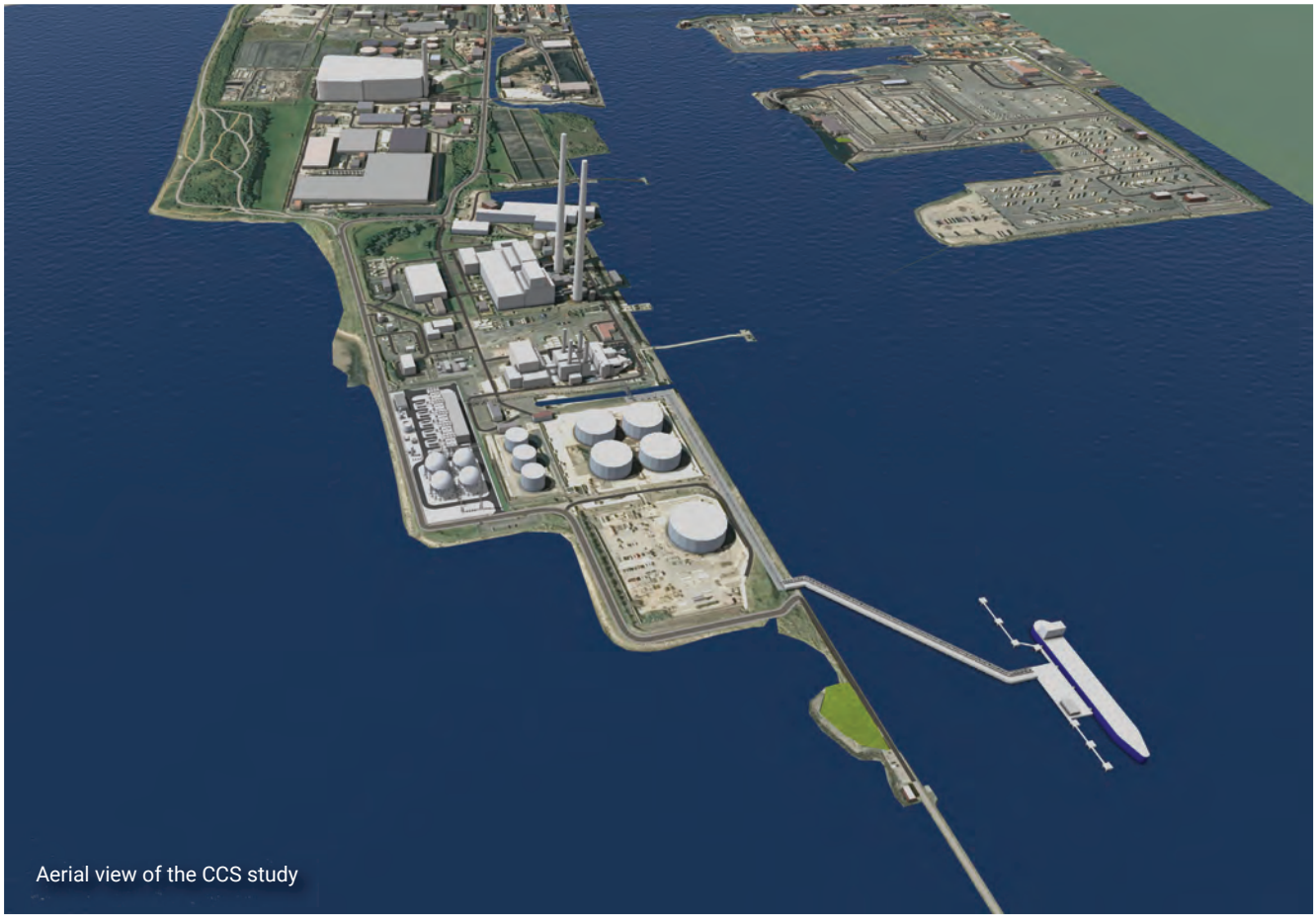
Completing the course is an important step in the career for consulting engineers; participants can now begin the process of securing RConsEI status within the ACEI. Those interested in progressing their careers, enhancing their skills and commanding more value in the market, should check the ACEI website for more information.

Every year, the ACEI hosts best-in-class learning and development programmes in addition to skills-based and information events and webinars.

If you're interested in developing your skills and getting involved in the important work the ACEI does, please contact Shane on **shane.dempsey@acei.ie**

ACEI ENGINEERING EXCELLENCE AWARDS: 2023 PROJECT OF THE YEAR

WINNER PROJECT OF THE YEAR: RPS – CCS STUDY TO PROCESS AND STORE CO_2



Aerial view of the CCS study

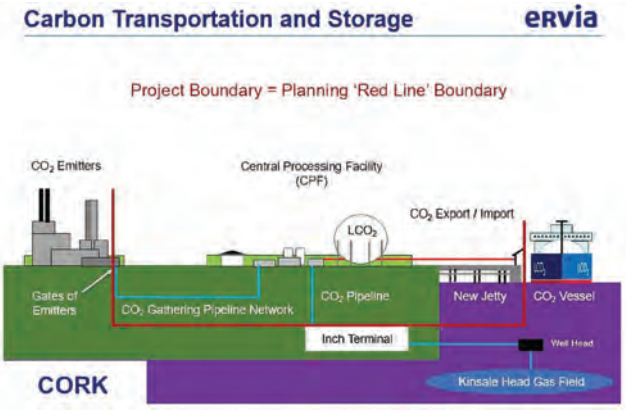
The Ervia Carbon Capture and Storage (CCS) Project involves the gathering and conditioning of CO_2 captured from large-scale CO_2 emitters (representing 5% of Ireland's CO_2 emissions) in Cork and/or Dublin and the transport of conditioned CO_2 either to indigenous storage in the depleted Kinsale Gas Field (Cork) or to international export by ship (Cork and Dublin).

Ervia appointed RPS to complete a detailed pre-FEED (Front End Engineering Design) to assess the viability and costs of CCS in these Cork and Dublin cluster locations.

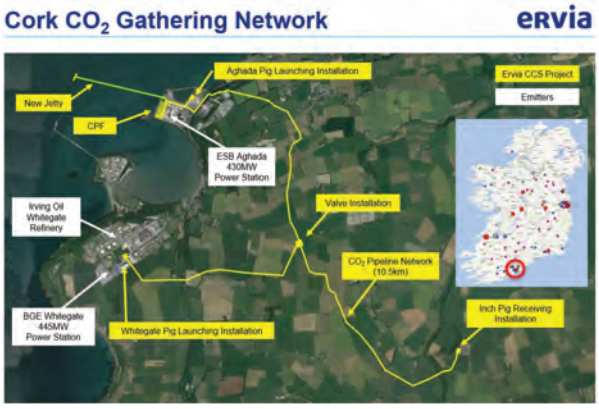
It was an EU Project of Common Interest (PCI) and was supported by Connecting Europe Fund.

The objective of the project was to deliver a well-developed process design basis, enabling an AACE Class 4 cost estimate to verify the feasibility of the project for each location in both technical and cost terms. This required the design of the key infrastructure necessary to condition, compress, transport and store liquid CO_2 for subsequent loading onto ships for export.

In Dublin, the design was on the basis of CO_2 export via



Carbon transportation and storage



Cork CO_2 gathering network

ship, while in Cork the design also allowed for import by ship for potential storage at the Kinsale Head Gas Field.

The level of design delivered, was higher than typically provided to a Class 4 cost estimate in order to achieve an upper end cost accuracy.

The project required a multi-disciplinary approach, bringing together RPS' expertise and leading carbon capture industry partners.

Ireland's Climate Action Plan (2021) sets out objectives to reduce CO_2 emissions by 50% by 2030, achieving net zero CO_2 emissions by 2050. A number of actions are required to accomplish these objectives, particularly the need to 'examine and oversee the feasibility of the utilisation of carbon capture and storage in Ireland'.

Following preliminary examinations, specific emitter clusters were identified in Cork and Dublin, with potential carbon sinks identified in Cork (former Kinsale Head Gas Field) and Norway (Northern Lights Project).

Our project has shown that the export of CO_2 is a technically viable option for Ireland to develop CCS. This provides an opportunity to reduce Ireland's emissions by over 25% from 22.6 MtCO2 to 16.6 MtCO2 per annum.

The project has identified the roadmap for CCS implementation and highlighted the need for a CO_2 safety framework, legislative changes to the Planning and Development Act and amendments to the CCS regulations.

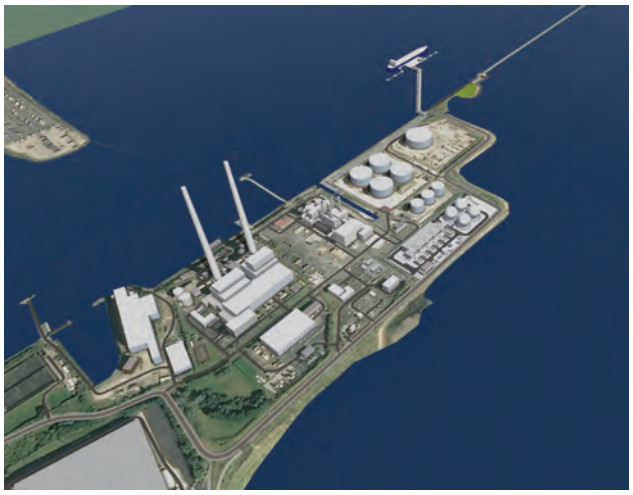
The project has delivered a detailed understanding of the transportation and storage aspects of CCS and the associated costs in Ireland, which accurately reflect real world conditions. This is of genuine benefit to the global CCS industry and its role in meeting net zero objectives.

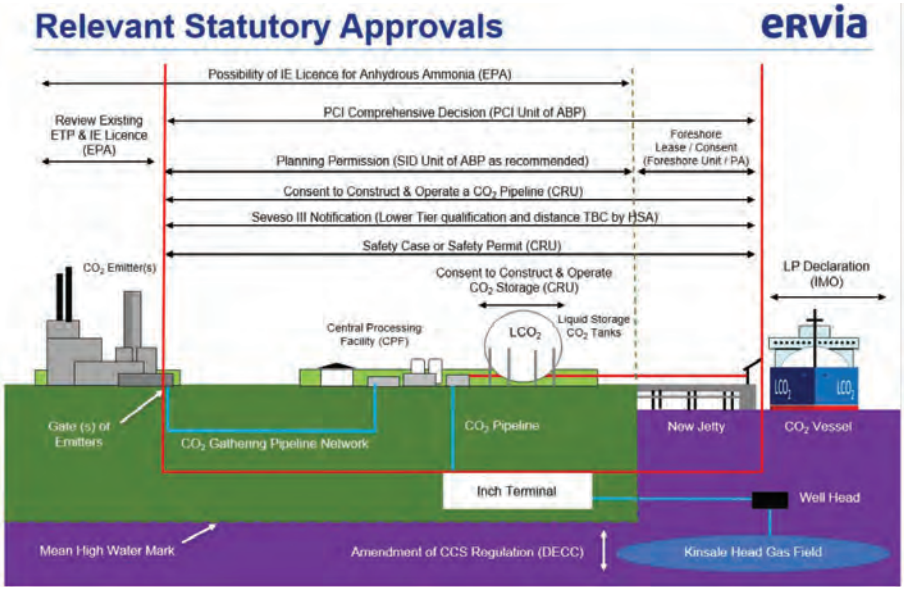
The infrastructure required in both Dublin and Cork is technically feasible, with development taking at least seven years. In addition, many aspects of this project are transferable to other potential CCS projects in Ireland and internationally.

This has been clear from the level of interest across the industry when the results of the project were disseminated to the European Union, Global CCS Institute members in Copenhagen in September and the Carbon Capture and Storage Association in October 2022.

It is a significant advancement of carbon capture and storage in Ireland and internationally, which is a key sustainability workstream in meeting 'net zero' carbon.

Relative to other infrastructure CCS is in its infancy, with approximately 35 commercial facilities in operation worldwide. None of these facilities are in Ireland. The infrastructure is process-driven and highly complex, requiring a wide range of disciplinary expertise to design and deliver it. This ranges from shipping and marine studies to CO_2 gathering network modelling and process design.

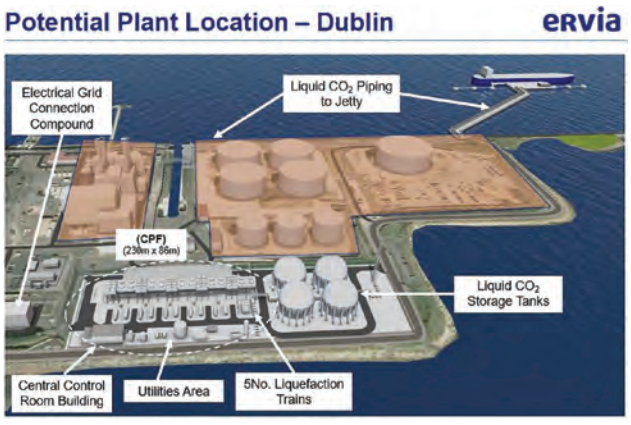




Relevant statutory approvals

The design approach used for this project has been to locate the CPF and liquid CO_2 temporary storage infrastructure as close as possible to the export / import facilities and to use a modular design approach to match emitter outputs and shipping capacity. Combining these elements together has resulted in a more compact and efficient design.

In addition, a full sustainability review, incorporating embodied carbon and carbon footprint assessments was carried out which identified a number of opportunities to proactively minimise and reduce the carbon emissions of the project. Some of these opportunities include the purchase/generation of small scale renewable power, and heat recovery from compressors and at the power station at Aghada for regasification, coolers and the ammonia refrigerant system to heat the plant. The chance to reuse much of the existing infrastructure was also pinpointed; examples being use of the existing slipway in Aghada, sharing jetty facilities in Dublin and reuse of existing gas pipelines in Cork. Other processes such as pre-fabrication and 'deconstructability' will enable the efficient disassembling and repurposing of infrastructure during the decommission phase.



Potential plant location – Dublin

Further to the process design work, the pre-FEED project also considered the safety requirements for the facility through developing a state-of-the-art communications and control philosophy tested and enhanced by a detailed HAZID and a preliminary HAZOP process. This is not typical for a pre-FEED but was completed to improve project definition and costing. Gas dispersion and pipeline crack propagation studies were also completed. We acted as PSDP and delivered a final project PSDP report structured around a preliminary safety and health plan format to support the next phase of the project.

The comprehensive project scope led to greater detail and cost accuracy. Detailed P&IDs were more developed than for a typical pre-FEED. Vendor pricing was obtained for all major equipment and a 3-D model was developed to support site layout and material quantification.

The project has confirmed the need for legislative and regulatory changes to implement CCS in Ireland.

The project was delivered on time and within budget to an extremely challenging timeline.

This is a very significant project for Ervia in its strategy to decarbonise Ireland's gas network while reducing CO_2 emissions nationally in Ireland. There is great potential for the lessons learned on this project to be applied to other future CCS projects in Ireland, the UK or further afield, in particular within the cement and thermal waste treatment sectors.

ACEI ENGINEERING EXCELLENCE AWARDS: CIVIL – LARGE

WINNER: ARUP – DUBLIN AIRPORT NORTH RUNWAY

Aerial view of North Runway. © FCC Construcción and daa

Dublin Airport's North Runway is one of Ireland's largest infrastructure projects. Its development has been an integral part of Dublin Airport's long-term strategic planning and land allocation prioritisation since the 1960s, with land safeguarded to realise this ambition.

Positioned to the north of, and running parallel to, the existing southern runway while intersecting the crosswind runway, it has the capacity to handle 70% of the anticipated peak 2037 traffic demands for arriving and departing aircraft, throughout its 30-year design lifespan.

Delivered on time and within budget, North Runway had its inaugural flight in August 2022.

INTERNATIONAL EXPERTISE

The international project team comprised Arup, SENER, FCC Construcción and Roadbridge, bringing together expertise from previous airport infrastructure projects to deliver Ireland's first international runway in over 30 years. With a track record of building more than 5,000,000m^2 of runways in over 20 countries, the team's capabilities enabled efficient programme management, resulting in the delivery of a best-in-class runway to support the future plans and ambitions of the airport's operator, the Dublin Airport Authority (DAA).

Arup and SENER formed a design joint venture for the project which was delivered under a design and build form of contract. We were responsible for all aspects of the technical design delivery, including project management, geotechnical,

Rubblised existing runway pavement to allow it to remain in situ, reducing programme and impacts on airfield operations. This approach aligned specifically with the circular economy and sustainability ambitions for the project. © Arup

Lime improvement techniques increased the strength of the sub-grade in areas of fill, ensuring a continuous pavement build-up under the runway – optimising pavement thickness, providing material and cost savings. © Arup

drainage, fire engineering, airfield geometry, pavement, ground lighting, communications, SCADA system design and project supervisor for the design process (PSDP).

The project objectives sought to:

- Support the safe operation of the airport during construction.
- Provide best-in-class safe systems of works for maintaining assets.
- Implement ISO 50001 Energy Management System (EnMS) standard.
- Demonstrate consideration of whole life costs.

A COMPLEX SITE

The project involved the construction and installation of over 340,000m^2 of new runway and taxiways, 6km of internal airport roads, 425km of electrical cable and 2,500 runway and taxiway lights. Managing a project of this scale presented a challenge, particularly in terms of adhering to the project timeline and budget. In addition, the intersection with the existing cross runway required careful planning and stakeholder engagement to achieve safe delivery within a tight timeframe.

Arup worked closely with DAA to produce phased construction plans, risk and contingency procedures and communication scenarios. Advanced preparatory works in targeted areas of the site and design for phased construction alongside a live airfield were key to the project's success.

PROJECT AND SITE MANAGEMENT

The primary engineering challenge was navigating the live airport environment, particularly at the interface with the existing runway. This required detailed analysis and virtual testing of design solutions with the contractor and DAA.

The permanent design was assessed in discrete construction stages, each requiring multiple engagements with DAA airport operations and management teams.

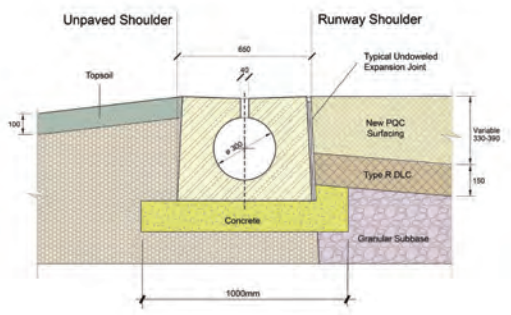
A dedicated team supported the contractors' construction management teams to ensure the highest quality outputs. A robust inspection and testing plan was adopted. Where conditions varied from those anticipated, predefined contingency measures were implemented, enabling real-time decision making, reducing construction and operational impacts.

SUSTAINABLE DESIGN SOLUTIONS

Sustainability was at the core of this project, with a focus on reducing carbon emissions and increasing circularity.

An ambitious earthworks balance was achieved, avoiding import or export of bulk earthworks materials and limiting construction vehicle movements. Holistic earthworks, geometrical and landscaping design optimised bulk earthworks movements to discrete areas of the site, removing the need to process and grade the material across a wider area. Onsite material reuse was maximised, drawing from circular economy principles, targeted ground investigation and detailed reusability assessments. Through treatment techniques including air-drying and ground improvement, unsuitable or marginal materials were reused, where possible.

Advanced electrical metering, energy-efficient lighting controls and heating/cooling operation were prioritised



Drainage solutions utilised precast elements, such as slot drains and Stormtech™ (CubicM3) attenuation tanks to minimise laborious site works, reducing programme and enhancing worker safety and welfare. © Arup

Pavement slab construction using a concrete train. The pavement construction type was tailored at the crossing with the existing runway to cater for the tight construction period due to runway availability. © Arup


Installation of pavement dowel. © Arup

and the ISO 50001 Energy Management System (EnMS) standard was applied to the substation design, reducing the site's overall energy requirements.

An insect hotel was constructed using recycled site materials to preserve and increase the area's biodiversity. Grassed taxiway shoulders, a sustainable alternative to paved shoulders, reduced overall pavement extents and materials. 'Green machinery' was also prioritised.

INNOVATION FOR EFFICIENCY

The design team opted for an innovative fully rigid pavement design with a flexural strength of 5MPa and maximum slab sizes to minimise construction time and maintenance costs.

Airfield ground lighting (AGL) designs were created to meet CAT-IIIb standards, enabling all-weather operational capability. "Follow the green" technology supports air traffic controller and pilot navigation between touch down, gate and take-off in all visibility conditions. This not only reduces taxi time but minimises fuel burn and CO_2 emissions. In addition, the positioning of AGL fittings with pavement joints, combined with secondary ducting beneath the pavement for electrical cables, resulted in a more efficient alternative to the typical solution of saw-cutting the pavement.


Installation of AGL primary cable ducting and chambers. © Arup

To support a safe systems approach for asset maintenance, a GIS-based asset management system was developed. The system provides a comprehensive database of assets and their metadata for future reference.

WHOLE LIFE COSTS

Material selection and construction methodologies considered financial and environmental costs over the entire 30-year design life and included an assessment of future use opportunities at end of life. The industry-leading decision to continuously consider whole life costs throughout the project ensured that the final asset on handover was optimised for efficient and reliable operation and maintenance, providing a resilient asset and safe working environment for day-to-day operations.

Collecting high quality site data facilitated the confident reuse of material, ensuring close alignment between expected and actual project costs. Additionally, detailed visual and structural assessments of pavement and electrical assets allowed for multi-functional use of the proposed infrastructure.

IMPACT

From five million passengers in 1989 to 31.5 million passengers in 2018, Dublin is one of the fastest growing airports of its size in Europe. The North Runway was critical to facilitate the airport's future growth aspirations and support economic prosperity at a local and national level, making this a project of generational significance and national importance.

Identified as a key piece of infrastructure in Project 2040, the Government's long-term strategy for a resilient future, the 3.1km-long runway supports the creation of 31,200 new jobs and €2.2 billion in additional economic activity.

PIPELIFE BUILDING THE FUTURE

IRELAND'S NO.1 PLASTIC MANUFACTURER OF DOMESTIC, INDUSTRIAL AND AGRICULTURAL PIPE & FITTINGS.

A FULL-RANGE SYSTEM PROVIDER

- Plumbing & Heating Pipe & Fittings
- Renewable Heating Solutions
- Sewer/Underground Drainage Systems
- CP PVCu Expansion Joint for Concrete
- Soil & Waste Systems
- PVC-UE Roofline, Window & Cladding Systems
- Rainwater Systems

PIPELIFE Ireland Solutions Ltd, Little Island, Cork, T45 TX05.
T: 021 4510600 E: ireland@pipelife.com, **pipelife.ie**

ACEI ENGINEERING EXCELLENCE AWARDS: CIVIL – SMALL / MEDIUM

WINNERS: J. B. BARRY AND PARTNERS – LEE ROAD WATER TREATMENT PLANT

Lee Road Water Treatment Plant (following completion)

J.B. Barry and Partners was appointed by Uisce Éireann to provide engineering services for the upgrade of the Lee Road Water Treatment Plant (WTP) from concept design stage through to project delivery. This was a project of considerable scale involving the construction of major civil engineering and treatment process infrastructure, valued at €30 million, to provide state-of-the-art water treatment facilities to safeguard the water supply for Cork City.

AN HISTORICAL STRUCTURE

Situated by the river Lee, Lee Road WTP supplies approximately 70% of the water supply for Cork City's more than 97,000 consumers. Here water is abstracted from the River Lee before being treated and pumped to high level reservoirs on the distribution network.

The treatment plant is the oldest continuously used municipal water supply installation in Ireland, with parts of the plant dating from 1768. Since then, there have been several upgrades to the infrastructure but no major upgrades since the 1950s. Treatment and management issues meant that the plant had been included on the Environmental Protection Agency's (EPA's) Remedial Action List (RAL) since the late 1990s.

AN EXTENSIVE PROJECT SCOPE

JBB was commissioned to design, plan, procure, and project manage the long-awaited upgrade of the treatment

plant. Work was commissioned and is now operational, spanning the following areas:

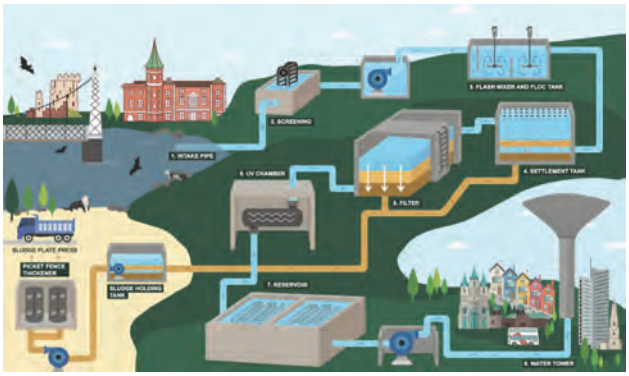
- Replacement of the existing facility with a newly constructed and commissioned water treatment plant
- Refurbishment and upgrade of existing pumping stations feeding the distribution network
- An increase in water treatment capacity from 36 to 40 megalitres per day (MLD), with components designed for an ultimate modular expansion to 80 MLD.

The project was delivered through a FIDIC Gold Book Design Build Operate form of contract awarded to Murphy International Ltd (MIL), with the existing plant remaining operational by Cork City Council until successful commissioning of the new plant. A robust specimen design was prepared by JB Barry and Partners and developed to detailed design by MIL and their specialists.

PROTECTION AND SECURITY OF SUPPLY DURING FLOOD EVENTS

An exceptional River Lee flood event in November 2009 resulted in the production loss of treated water for over one week, damage to equipment and contamination of the supply. The new plant was designed to withstand the potential impact of flooding which involved significant raising of existing ground levels and infrastructure within the site. Liaison was undertaken with the OPW to integrate the design with the Lower Lee Flood Relief Scheme. Protection of the plant from flooding was important in providing a robust and secure water supply to the city and to allow the removal of the scheme from the EPA Remedial Action List.

Significant infrastructure involving deep sub-surface structures were constructed in close proximity to the River Lee including a 2,500m^3 treated water storage reservoir. A dewatering system was installed by the contractor across the site to control groundwater and facilitate construction of deep structures.



Lee Road Water Treatment Plant process schematic
(Courtesy of Murphy International Ltd (MIL)

INTEGRATING INTO A SENSITIVE AND RESTRICTED SITE

The project had several environmental and archaeological constraints including the presence of an underground infiltration gallery, dating to 1867, previously used for the abstraction of raw water from the River Lee. This archaeological feature is located within the site boundary immediately north of the river bank and added an additional layer of complexity to the design and construction of the project. Constraints and risks were successfully managed with the contractor during delivery of the project including difficult ground conditions (deep gravels), flood risk and sensitive receptors (University College Cork ERI unit) as well as a restricted working area near the operational existing treatment plant.

The completion of the Lee Road WTP means that there is continuation of abstraction and treatment beside the Old Waterworks turbine building which is now a visitor centre focused on environmental issues, education, and the industrial heritage of Cork. The site is in a scenic area of high landscape and amenity value of Cork City and has retained its character despite the scale of the development, mitigated through careful architectural input at planning stage.

Lee Road Water Treatment Plant exterior view

Lee Road Water Treatment Plant interior

Lee Road Water Treatment Plant under construction

In order to integrate the scheme into the surrounding landscape the design team worked to retain and enhance existing tree lines and vegetation, as well as employing sensitive building and engineering design. By separating individual treatment buildings, the facility was visually integrated with the neighbouring University College Cork campus.

JBB'S EFFECTIVE PROJECT MANAGEMENT DELIVERY

The exacting specification and the engineers' approach to construction contract administration ensured that the project was completed without significant additional costs to the client, other than those deemed outside of the control of the parties, i.e. Covid-19 (with associated restrictions and inflation in construction costs) and the war in Ukraine (with associated inflation in energy costs).

Lee Road Water Treatment Plant under construction

Highly effective project management techniques were essential in ensuring safe progress while overseeing contract risks and costs. The project was carried out without a pollution event or reportable accident despite the scale of the construction which involved large sheet-piled excavations up to 8m below ground and close to the river.

In addition to raw water abstraction from the River Lee, a significant project interface involved connection of the Lee Road treatment plant with the City and Harbour Inniscarra WTP via a new Western Trunk Watermain and the Shanakiel Watermain. By doing this the project provided further resilience to Uisce Éireann, in partnership with Cork City Council, to the Cork City water supply network.

JB Barry succeeded in delivering this complex project in a challenging environment, using robust project management and innovation to upgrade a facility steeped in history to be resilient and capable for the future needs of its population.

This project has been awarded by the profession locally and internationally with this Medium Category win in the ACEI Engineering Excellence Awards, and with an award of merit at the FIDIC Project Awards 2023 in Singapore.

ACEI ENGINEERING EXCELLENCE AWARDS: CIVIL – MEDIUM

HIGHLY COMMENDED: RPS– BALLOUGH AGI BYPASS PROJECT

Baldrumman AGI – Phase 1 complete

The overall objective of this project was to improve the security and increase the resilience of Ireland's gas network, by reducing the critical importance of the existing Ballough Above Ground Installation (AGI). Before completion of this project, most natural gas entering the Republic of Ireland network flowed through this critical node.

The Ballough AGI Bypass project comprised the development of a new AGI and associated pipelines to bypass Ballough AGI, thereby redirecting the gas pipeline to the west (GPTTW) away from this critical node.

Gas Networks Ireland (GNI) developed this overall objective into a high-level concept design which RPS used as the basis for its subsequent preliminary and detailed design work.

A total of 13 alternative sites were examined for the new AGI, with different combinations of connecting pipelines. A preferred site and bypass pipeline route were selected after desktop and field surveys. The new AGI was named Baldrumman AGI, after the local townland in which it is situated.

The planning application was supported by a full Environmental Impact Assessment. Separate applications under the Gas Act and the Roads Act were made to the

relevant statutory bodies. Planning approval was granted in 2019.

A critical requirement for the project was that there should be no interruption to gas supply during the works. RPS's scope therefore also included developing a detailed step-by-step construction sequence described in drawings and associated narrative. The sequence included a total of nine hot tap operations, which involved drilling a hole and adding a new fitting on a live pipeline, while maintaining flow in the pipeline. The final sequence also minimised the amount of degassing to atmosphere with consequent environmental and cost benefits. This element of the scope involved a large amount of design work and coordination with GNI teams and the contractor.

Another key challenge on the project was a trenchless crossing of the M1 motorway (approximately 120m) and 110kV power lines. RPS assessed the feasibility of alternative crossings and developed a specification for site investigations to be carried out.

The gas network consists of over 2,400km of high pressure pipelines and over 250 AGIs. It plays a hugely important role in Ireland's economy, delivering around 30% of the country's primary energy needs across the domestic, commercial, industrial and electricity generation sectors.

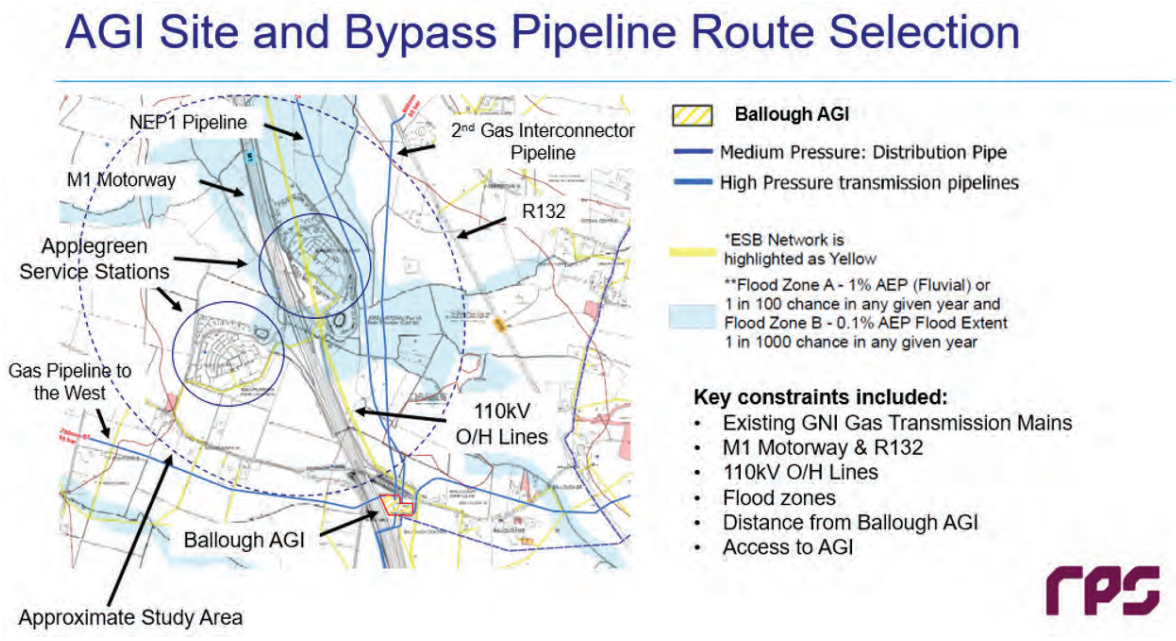
A number of strategically important gas transmission pipelines enter/leave Ballough AGI which make it a critical node in the Irish gas network, including the two interconnector pipelines from Scotland. Before this project was completed, any interruptions to the gas supply at Ballough AGI could have had major impacts on large numbers of gas and electricity consumers.

Construction work started in March 2020 shortly after the global Covid 19 pandemic began. Despite this major challenge, construction was completed on programme with no interruption to the gas supply. As a result of this development, Ireland's gas transmission network is now far more secure.

The delivery of this project involved the implementation of a range of sustainability measures from design stage through construction and reinstatement. Among the enduring sustainable measures are extensive planting for biodiversity and the establishment of a wetland area.

There were also innovations in the use of prefabricated and modular elements and the effective use of a 3-D BIM model to facilitate design and construction efficiencies.

The project wasn't without challenges. Drainage and flooding were key concerns due the the size of the new AGI and the level site. It was essential that the project would neither be impacted by flooding, nor impact negatively on the surrounding area in times of flooding. InfoWorks modelling software and 3-D geometric design were used to develop solutions. These included an attenuation feature to limit the rate of discharge of surface water and raising the site above the 1:1000 year flood event.



Site selection stage – key constraints

Welders working on a 900mm pipe

Ballough AGI aerial

RPS designed modular structural retaining wall elements to facilitate the contractor in progressing construction while waiting on late materials. This simple site-led innovation alone resulted in a six week programme-saving to the project. It is an example of how innovative and creative thinking on-site can be supported by design teams and how collaboration on projects can be critical to delivery.

The detailed geometric design for civil and mechanical elements was developed using AutoCAD Plant 3D and Revit. This approach facilitated rapid updates and adjustments to the final AGI design as vendor information became available. It also enabled RPS to quickly develop a design solution when an unexpected mechanical constraint was identified during construction which was not recorded previously. With very tight programme challenges, RPS worked closely with GNI and the contractor, to develop a revised modification at Ballough AGI in accordance with GNI's design deviation procedure. The feasibility of the solution was demonstrated using the 3D BIM model within days. The works could then be carried out successfully on-site. It was a good example of how the development of design within a 3D BIM environment can continue to add value throughout a project's life cycle.

Irish Gas transmission network

The new AGI will accommodate future 85/70bar pressure reduction facilities. It will facilitate operation of the GPTTW to its design capacity of 85bar. Whereas earlier transmission pipelines built in Ireland were designed to cater for a pressure of 70bar, the design specification for the GPTTW and later transmission pipelines was increased to 85bar. Operating at this higher pressure will provide additional capacity in the existing infrastructure. This benefit could not be fully realised without adding pressure reduction facilities at the new AGI and at another location on the gas network, to facilitate establishing a two-tier (85bar / 70bar) transmission network.

The landscaping plan for the AGI itself has been designed to enhance biodiversity with over 1,600 native trees, a large grassland meadow and a wetland feature that will complement the surrounding agricultural area. In addition, GNI will also develop approximately five hectares of additional space around the AGI footprint for biodiversity. This will include three wildlife ponds, two grassland meadows and approximately 13,000 native Irish trees.

MURPHY

WORLD-CLASS INFRASTRUCTURE

IMPROVING LIFE BY DELIVERING WORLD-CLASS INFRASTRUCTURE

Murphy is a leading international, specialist engineering and construction company founded in 1951. Operating across the UK, Ireland and Canada, Murphy employs around **3,800 engineers**, managers and skilled operatives who work together as 'One Murphy' – directly delivering the people, plant and expertise needed to make projects a success.

1 BEST BIG COMPANY TO WORK FOR 2023

Want to work with one of the **Best Big Companies to Work For?**
We have a wide range of exciting opportunities across all disciplines:
www.murphygroup.com/careers

Visit us on:

#MORETOMURPHY

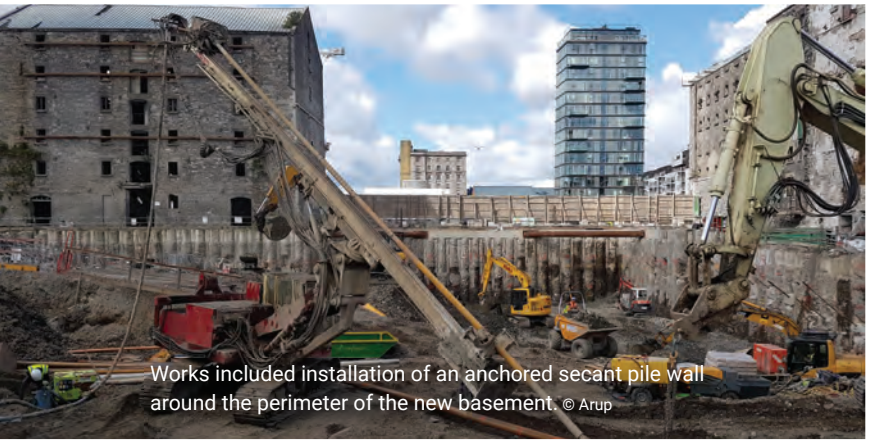
ACEI ENGINEERING EXCELLENCE AWARDS: STRUCTURAL – LARGE

WINNER: ARUP – BOLANDS QUAY REDEVELOPMENT

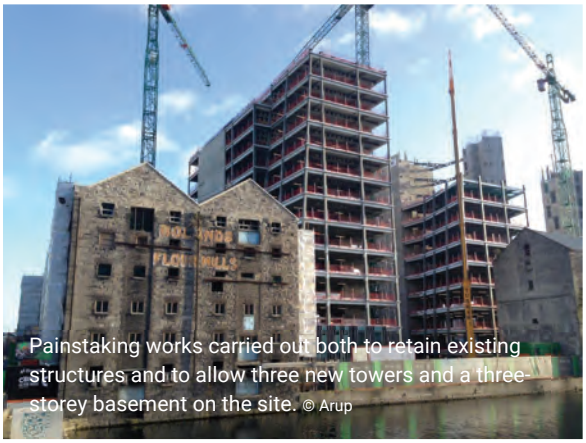
Completed Bolands Quay redevelopment
© Enda Cavanagh

The urban regeneration scheme behind Bolands Quay, one of Dublin's largest to date, breathes new life into the Docklands' industrial warehouses – a cornerstone of Irish history. Offering a mix of residential, retail and office space, the city's past and future are woven together in this iconic waterfront site, where the restoration of the original 1830s grain storage and stone mills sits alongside three new landmark tapered towers over a three-storey basement. A new pedestrian bridge and two new plazas link the campus to the local area, also known as Silicon Docks, alongside a 549m^2 space to host cultural events.

Completed in 2022 and handed over to Google as an expansion of its EMEA headquarters, the Bolands Quay campus can accommodate up to 2,500 workers over 36,851m^2 of office, residential, retail and cultural space. The three new towers inform the dock's skyline, rising to 47.8 metres, 49 metres and 53 metres respectively with their characteristic tapered profiles. The project team delivered on the Strategic Development Zone (SDZ)



Works included installation of an anchored secant pile wall around the perimeter of the new basement. © Arup



Painstaking works carried out both to retain existing structures and to allow three new towers and a three-storey basement on the site. © Arup

objectives of sustainable inner-city regeneration, targeting a LEED Gold standard.

MULTIDISCIPLINARY ENGINEERING

Designed with Burke Kennedy Doyle Architects, Arup provided multidisciplinary engineering services for the campus. This included structural, civil, mechanical, electrical, geotechnical, façade and traffic engineering, as well as environmental consultancy, health and safety (PSDP) and lighting services. Other Arup specialists, including maritime and highway engineers, advised on specific aspects of the works, including the design and execution of the new pedestrian bridge. The civil and structural scope of the project involved the client's exploration of the site, brief definition, interaction with neighbours, planning process and final delivery.

One significant challenge was enabling phased development on the site. This included commencing enabling works before appointing the main contractor and managing separate new-build, pedestrian bridge and conservation works.

During the early stage enabling works, a site investigation was conducted. This covered various aspects, including geotechnical, environmental and site infrastructure. As a result, the design team specified secant piling of the basement perimeter wall and excavation, designing, procuring and supervising a site investigation and remediation contract for decontamination works required. The Environmental Protection Agency (EPA) commended Arup for the effectiveness of these works.

Initial works also included stabilising protected structures, demolition of modern concrete silos and specification of a monitoring strategy.

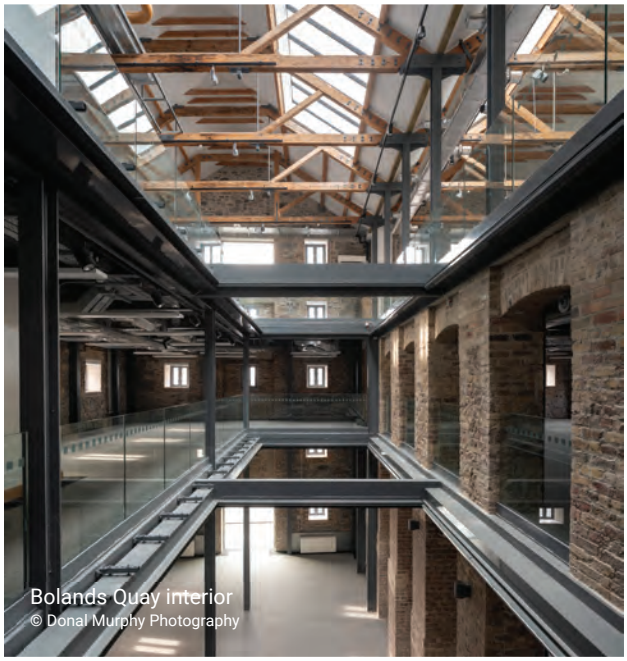
EMBODIED CARBON

Sustainability was prioritised from concept stage. From a structural perspective, the project team focused on refurbishing existing assets and elements – balancing structural integrity, official listing status, conservation significance, minimising embodied carbon, ensuring constructability and breathing new life into the inner-urban site.

Building E, a 1940s grain silo, was demolished due to concrete and reinforcement degradation. In contrast, Building C, an unlisted mid 19th-century warehouse-type structure, was retained and significantly refurbished for residential use. The restoration process included the removal of decaying timber inserts, replacement of friable masonry, meticulous re-pointing, repairing cracks, restoration of pattress plates, timber trusses and roofing. Additionally, underpinning efforts were undertaken, replacing damaged render, heating or drying walls with high moisture content, replacing gutters and flashings and preserving as much of the existing building fabric as possible. Clear guidance was provided to the purchaser on monitoring and maintaining the buildings.

To accommodate new functions, loading requirements and modern mechanical and electrical systems, new

Plan view of site in 2013. Buildings outlined in blue were retained and those in red were demolished. The two buildings referred to in the example (Buildings C and E) have been shaded. © Arup



Bolands Quay interior
© Donal Murphy Photography

Two new plazas link the campus to the local area
© Enda Cavanagh

structures were thoughtfully integrated into the retained buildings. This involved the installation of new timber floors supported by refurbished cast-iron columns, new reinforced concrete frames, composite concrete slabs on cellular steel beams and SlimDek floors resting on newly-installed micropiles, where required.

Ambitious carbon measures were incorporated, such as nearly zero energy building standards into the refurbished buildings and photovoltaic panels into the refurbished blue slate roof.

PROJECT MANAGEMENT AND DESIGN PROCEDURES

The design team faced a significant challenge in resolving the complexity of the scheme situated on a historically significant urban site. The undertaking engaged over 70 structural engineers, their roles ranging from reviewing specific design specifications to dedicating thousands of hours to resolving the project's intricacies.

Beyond this, the coordination of the broader project team, comprising the main contractor, enabling works contractor, specialist sub-contractors, temporary works designers, Assigned Certifier, fire engineer, monitoring team, flood barrier specialist and Dublin City Council's technical teams, presented other challenges. To address these, a robust core senior structural team was established. Modelling decisions, performance requirements and calculation plans were documented in shared workbooks and design workflows were carefully articulated on paper for review and continual improvement. A rigorous quality and checking procedure was maintained, characterised by frequent technical reviews and independent assessments conducted by experienced engineers and specialists.

Tight control on project deliverable deadlines and regular communication between structural sub-teams were maintained to ensure a cohesive approach and seamless exchange of information. Advanced digital design techniques and BIM coordination workflows were used to streamline the project's execution.

DIGITAL INNOVATION

Bolands Quay, an early pioneer in advanced BIM in Ireland, used digital tools to check, analyse, coordinate and monitor construction data for this complex design. For instance, the slender core height and lateral deflections of Tower 3 were controlled by perimeter walls above ground, requiring advanced checking procedures including model reviews and a separate design review team. The single-storey café building, between Tower 2 and Building D, faced constraints in terms of support and bracing locations, justifying the adoption of a mixed support strategy grounded in the principles of global buckling and non-linear structure behaviour.

IMPACT

Dublin's past and future have been woven together through the revitalisation of this long derelict site. In addition to the introduction of office, residential and retail space, a vibrant cultural quarter and new public passage have been created, allowing pedestrians to flow from MacMahon Bridge through the site and onto Barrow Street.

With the increasing focus on carbon reduction and biodiversity preservation, we can expect a greater emphasis on repurposing urban sites. Bolands Quay sets an ambitious benchmark in this regard.

Lime Street Residential

N5 Westport to Turlough

bam

Building a sustainable tomorrow

www.bamireland.ie

CDP
A LIST
2022
CLIMATE

ACEI ENGINEERING EXCELLENCE AWARDS: STRUCTURAL – MEDIUM

WINNER: BARRETT MAHONY CONSULTING ENGINEERS – 20 KILDARE STREET

Bird's eye view

Number 20 Kildare Street involved the renovation of four semi-derelict, 18th-century Georgian townhouses that front onto Kildare Street (No 19-22) along with the construction of a new seven-storey over-basement office development to the rear, with a three-storey high glass atrium linking the new and old.

The four heritage listed buildings were in various stages of disrepair, requiring meticulous renovations so as to retain as much of the original fabric and details. The new building behind these is on a tight inner city site with a narrow access, which had been developed with a series of outbuildings constructed at various times over the past 100 years. Early engagement with the contractor helped in developing the structural design and construction sequence.

Barrett Mahony Consulting Engineers acted as civil and structural engineering services for the project from inception to planning, tender and construction, through to completion.

The opportunity to refurbish four 18th century Georgian townhouses is unique, particularly given the poor condition some of them were in at the outset. From a very early stage it was clear the scale of the task, and specific meetings for these buildings were arranged with the architects (RKD), the heritage architect (Alistair Lindsay) and ourselves.

Initially the condition of each of the existing buildings needed to be ascertained, which varied between extremely poor to adequate; this was complicated by the poor condition of No.20. All elements of the fabric were

Kildare Street façade before

Kildare Street façade after

assessed for suitability, from floorboards and joists, to a full condition survey of the external brickwork. The details for the buildings were meticulously developed with the design team, along with having a number of meetings with the DCC Heritage Office.

From the initial inspections of the existing buildings, it was found that No.20 was in dangerous condition and props needed to be installed prior to further investigation, while two of the other buildings were in poor condition. Prior to submitting a planning application, the extent of the repairs was clarified and a detailed package of repairs was developed.

Upon starting on site, due to the condition of No.20, a whole temporary structural frame was required to be constructed on the inside so as to provide safe access, prior to removal of the roof and internal floor, and then a complete reconstruction from the inside out. The other buildings were in better condition, however structural repairs were required to joists, roof timbers and chimneys. A number of modern interventions were removed to return the buildings to their original layouts, which resulted in further repair works.

Many of the buildings had been rendered over time using cement-based products which had caused significant

New office building

damage to the original brick. Once this was removed, a detailed survey of the external brickwork was carried out front and back. From this, BMCE was able to develop a schedule of works with specific repairs for each location in order to bring the façades back to a condition similar to how they were originally constructed.

The ground floor level of No.20 had been lowered in the past to allow vehicles to enter off Kildare Street. This facilitated it to be used as the level access entrance for the new development to the rear. As a result, the basement level underneath need to be lowered and the walls underpinned. The underpinning works were not undertaken until all the repairs in the structure above had been completed and we were comfortable that the building was structurally robust. New basement slabs were required in all buildings with radon and ground water tanking.

In the new building, once the original outbuildings on the site were demolished, the basement filled the full

Atrium

View from top floor terrace

footprint of the site, with various different details for the contiguous piled wall on each boundary. A detailed understanding of the adjacent building foundations and basements needed to be developed. The adjacent buildings varied from the heritage listed buildings on Kildare Street, new rear extensions with basements at the back of St Stephen's Green, to a basement carpark on the west boundary. We were concerned about the effects the weight of the piling rig and the vibration from the piling operations would have on the heritage listed buildings, so an eight-metre buffer zone was created between the two. This allowed the piles to be located at a significant distance from the buildings. Extensive monitoring of all adjacent buildings was carried out to identify any movement. The design loads into the piles were also managed so as to reduce the extent of drilling into rock required.

The only access to the site was a narrow lane off Schoolhouse Lane. With that in mind the contractor was brought on board early to help develop the structural frame. The constructability of the super-structure was discussed in detail and the design developed in a way that allowed access for materials and deliveries, with trial runs undertaken prior to planning to determine the size of concrete truck that could deliver to site. The structure of the building consisted of reinforced concrete foundations, basement box and cores, with post tensioned concrete floor slabs. All reinforcement for standard RC elements were prefabricated off site and craned into position. The PT floor slabs were used to reduce the number of columns and provide a larger clear floor plate, however this also benefited construction with reduced concrete and reinforcement volumes.

Wavin Single Source Solution

The connected solution for above ground drainage

Wavin PVC-U
Soil system

Wavin PVC-U
Compact Soil system

Wavin HDPE
Soil & Waste system

Wavin AS+ Acoustic
Soil & Waste system

Whether it's roof drainage or an ultra efficient soil and waste system, construction professionals can specify and install Wavin products and systems with total confidence, time and time again.

To find out more about our product ranges or how the single source solution can help with your project email: **projects.ie@wavin.com**

Free BIM revit packages for all systems. Download yours today wavin.ie/bim

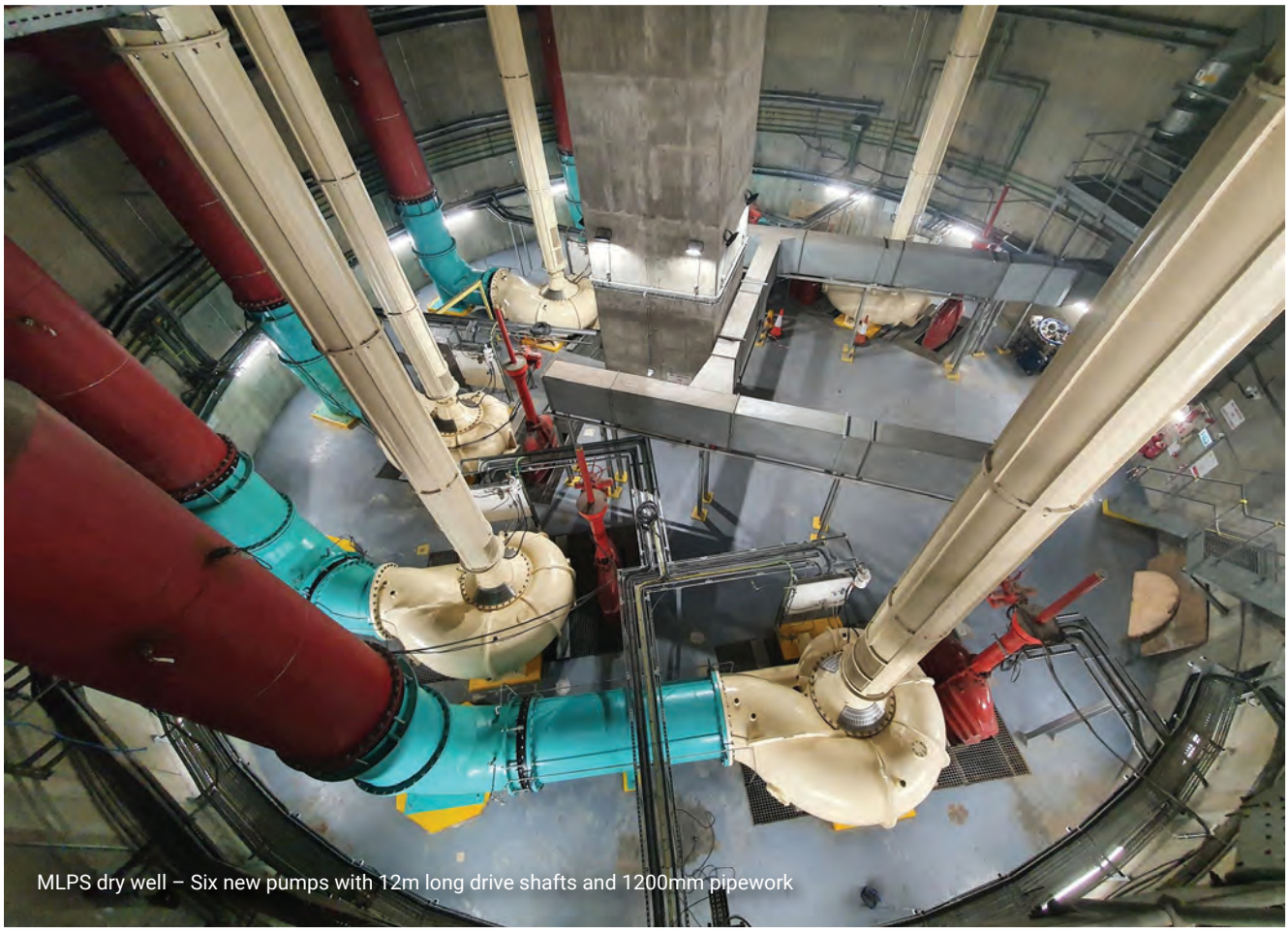
wavin

An Orbia business.

www.wavin.ie

ACEI ENGINEERING EXCELLENCE AWARDS: MECHANICAL & ELECTRICAL – MEDIUM

WINNER: J.B. BARRY AND PARTNERS – RINGSEND MAIN LIFT PUMP STATION UPGRADE



MLPS dry well – Six new pumps with 12m long drive shafts and 1200mm pipework

Ringsend Main Lift Pump Station was originally constructed as part of the Dublin Main Drainage Scheme in 1906 and subsequently upgraded in the 1970s in response to the city's growing population. In 2015 Uisce Éireann commissioned J.B. Barry to carry out an energy audit, then a subsequent multi-disciplinary survey followed by preliminary design and supervision of a major upgrade which commissioned in 2022.

J.B. Barry's experience in water and wastewater processes and approach to innovation in energy efficiency delivered an increase in capacity, extreme weather resilience and efficiency for this critical part of the city's network infrastructure.

J.B. Barry and Partners was appointed by Uisce Éireann to provide critical engineering services for the upgrade of the Main Lift Pump Station (MLPS), which is the country's


Old pumps


Pump manufacturing – pump volute casing

largest wastewater pump station, from initial assessment and emergency works through project concept design, to overall project delivery management.

Situated on Pigeon House Road in Ringsend, Dublin 4, the MLPS receives the majority of wastewater and stormwater from the Dublin City network and surrounding areas, which it pumps forward to the Ringsend wastewater plant (WwTP) for treatment and discharge to Dublin Bay. The incoming network comprises over 2,500 kilometres of sewers all of which converge within the boundary of the station.

Dry weather flow into the station is approximately 3,200 litres/second and can be managed by a single pump. But this swells hugely during heavy rainfall when the upstream network becomes full and flow rates into the MLPS exceed those into the River Liffey. There is no storage within the site nor any emergency overflow. All flow into the facility must be pumped to the WwTP.

ADDRESSING RISKS AND REPLACING CRITICAL EQUIPMENT FOR ENERGY EFFICIENCY

The recent project included replacement of critical equipment, including large wastewater pumps, as well as 1,200 mm diameter pipework and electrical switchgear which we identified as being near-end-of-life and a high failure risk. That failure would result in major flooding in the city, pollution and fire on site.

The project included civil works and other key M&E equipment and an objective to reduce energy consumption.

Uisce Éireann engaged JB Barry through a Design Build form of contract, with the existing plant remaining operational until successful commissioning of the upgrade. A robust specimen design was prepared by JBB and developed to detailed design by the contractor (EPS and their specialists).

The completed upgrade project was significant, comprising multiple systems and technologies:

- Six new Bedford foul pumps c/w 630kW WEG motors including long drive shafts (3,600 l/s each)
- Six new Rockwell VSD's (3.3kV)
- New suction, delivery and siphon pipework c/w actuated valves at each pump (1,200mm)
- Complete new electrical design including all cabling (MV, LV and ICA)
- New 10/20kV – 3.3.kV 5MVA and LV 10/20kV – 400V 500 kVA transformers
- 10/20kV Switchgear and new 3.3kV Switchgear supplies for each pump and three on site back-up generators
- New LV panels including ICA.
- New instrumentation, robust control system, SCADA, telemetry and backup supply
- New LED lighting, CCTV, intruder security, fire suppression and alarm, gas detection and alarm
- New ventilation, odour and temperature control systems
- All civil and structural works including cable trenches, plinths, stairwells, walkways, access platforms, roof repairs.

OPPORTUNITY TO SAVE ENERGY, EMISSIONS, AND BUILD RESILIENCE

JBB's original commission was for an energy audit at the MLPS. The site contained 40-year-old, manually operated pumps which were delivering less flow than expected while


New environmentally-friendly 3.3kV air-insulated switchgear to feed pump VSD's and motors

Switchgear replaced with six new 3.3kV VSD's installed with ventilation / temperature control system

MLPS construction – roof refurbishment and fall protection

drawing high energy. We identified how, by retrofitting with new high efficiency units and automating the station, UÉ could save significant OPEX costs, reduce energy and CO_2 emissions. This would create a plant which was efficient and resilient to extreme storm events and population growth.

A FULL MULTI-DISCIPLINARY REPORT

Other anomalies and risks with other critical components led UÉ in 2017 to commission JBB to conduct a detailed multidisciplinary survey and report, taking in civil/structural elements, mechanical/electrical equipment and control, instrumentation, and automation. The report identified the upgrade's scope of works and provided the business case. Six new, high efficiency pumps would deliver a total of 18,000 litres/second, supported by other ancillary works. JBB identified the need for advanced emergency pump overhaul works due to lead times for new units, and failure mode and effects analysis determined items with the highest failure risk.

PROCUREMENT AND CONSTRUCTION PHASE: SUPERVISING AND ENGAGING ALL STAKEHHOLDERS IN A TIGHT WORKING ENVIRONMENT

JBB acted as PSDP and Employer's Representative and prepared the preliminary design and tender documentation for construction phase including a very detailed pump optioneering design phase to ensure the correct system was specified. This went out to market under Uisce Éireann Framework in 2018. EPS was appointed as main contractor to the works supervised by JBB. Construction was completed and fully commissioned in 2022 under strict working environment – only one pump at a time could be decommissioned and retrofitted, maintaining five available pumps at all times.

The project's success required a strongly collaborative management approach and working relationship established by JBB between client, consultant, stakeholders, plant operators and contractor.

INNOVATION FOR RESILIENCE TO RESPOND TO WEATHER EVENTS & POPULATION GROWTH

JBB led a number of innovations introduced into the pump system. We needed to provide for flow distribution, as flow surges would flood the WwTP. We implemented a new pump control system which maintains a changeable level in the network depending on predicted rainfall events. This allows one pump to operate at varying efficient frequencies in line with the incoming flow during dry weather.

We applied a separate control philosophy to storm management, including measures to scour the network prior to predicted storms to build reserve capacity and step control to gradually increase the flow from the duty pump, bringing in additional pumps when required.

JBB design innovation included the specification of siphonic recovery pipework at the outlet of each pump. The pipework would be diverted under the outlet chamber water level, enclosing the system and reducing the total dynamic head of the pumps, resulting in considerable energy savings.

THE JBB CONTRIBUTION TO A FACILITY FOR THE CITY'S FUTURE

JBB was engaged by Uisce Éireann for our specific and deep knowledge in pumping and wastewater processes, supported by our expertise in project management and energy. The opportunities we took to develop the station will provide safeguards into the future. We engaged continuously with all stakeholders in reviewing the network model, future loadings, the WwTP processes and predicted storm events, and this all fed into the design process. Our design has ensured that by modernising the existing asset, UE has saved a significant amount of OPEX costs, reduced energy consumption and CO_2 emissions while creating a plant adaptable to and safeguarded against future challenges.

ACEI ENGINEERING EXCELLENCE AWARDS: MECHANICAL & ELECTRICAL – MEDIUM

JOINT WINNER: VARMING CONSULTING ENGINEERS LTD – MERLIN PARK UNIVERSITY HOSPITAL NEW ORTHOPAEDIC THEATRE BLOCK

Orthopaedic theatre external façade

Varming Consulting Engineers Ltd is one of the leading mechanical, electrical and sustainability consultancies in Ireland.

With a history spanning over 75 years we provide high quality, award-winning design, specification and cost control services coupled with expert advice on sustainable solutions.

Varming Consulting Engineers Ltd is dedicated to ensuring the economic, environmental and social sustainability of our designs. We are committed to acting on climate change in our own operations, limiting the impact of our clients' developments, and encouraging the transformation towards net zero carbon buildings in the wider industry.

Varming Consulting Engineers was appointed in October 2019 by HSE West, Estates Department as M&E Designers, Energy Efficient Design (EED) Experts and M&E Ancillary Design Certifiers under BCAR for this (650 sq m) project. The completed facility was handed over to the HSE in June 2022.

The brief for the project set out a schedule of accommodation for a highly serviced healthcare building to provide for two state-of-the-art orthopaedic theatres with provision for a future third theatre to the HSE West region.

HSE also required upgrades to the existing site infrastructure and new accommodation for the development of the new orthopaedic theatre block with no interruption to the live hospital campus.

OVERVIEW OF THE PROJECT

The project involved the fast-track design and construction of a new orthopaedic operating theatre block with patient recovery bays, staff accommodation and ancillary spaces.

The development was constructed over two levels with the health care function at ground floor level and plant space overhead. The new block is located at the front of the existing main hospital block with new site access routes and a ground floor link corridor to the main hospital block.

It was a requirement of the brief that all clinical areas had to take account of recommendations set out in NHS Health Building Notes (HBN) and Health Technical Memoranda (HTM).

The project was handed over to the HSE in full compliance with the above recommendations and IS 399 Energy Efficient Design, the highest standards of M&E performance based on an agreed budget, using state-of-the-art engineering design to reduce carbon footprint, improve reliability and minimise operating and maintenance costs.

COMPLEXITY OF DESIGN CHALLENGES POSED ON ADJACENT LIVE HOSPITAL AND FAST-TRACK PROJECT

The existing main block of Merlin Park University Hospital provides two orthopaedic theatres for the provision of orthopaedic elective procedures on the second floor which were not operational due to water damage, so the HSE commissioned a fast-track project to provide a facility to undertake caseloads and procedures.

From the outset of the project, Varming recognised from an M&E design perspective that close collaboration with HSE West, Estates Department team would be essential to ensure that the design outcomes would match end users' expectations.

MPUH insisted that no interruption to live services could be contemplated. At the same time, the M&E systems

Orthopaedic theatre UCV canopy

serving the new facilities had to be designed and installed to a high standard and be highly energy efficient, reliable, safe to operate and easy to maintain.

A detailed feasibility study was undertaken to evaluate the optimum construction methodology, enabling works, phasing and procurement of the works to ensure the fast-track project could be achieved. Potential options were explored and developed with the MPUH end-users and HSE Estates before an optimum solution was identified and agreed.

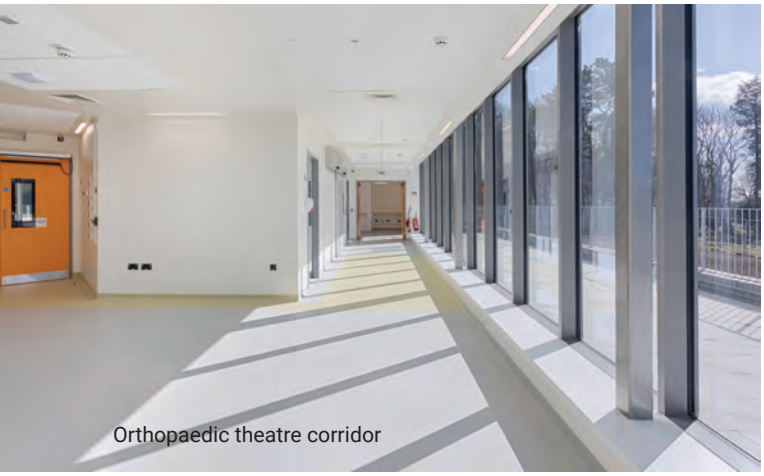
Varming carried out extensive surveys of existing M&E installations to identify how to approach necessary diversions, tie-ins, extensions and upgrades to accommodate new servicing demands while, at the same time, minimising both project risks and impacts on existing live services.

Varming had to futureproof the design to facilitate a future third theatre making allowances for upcoming tie-ins, spare capacity on major plant and the provision of subsequent plant space to minimise operational disruption to the new theatre block at a later date.

An Aspergillosis risk assessment was developed during the feasibility study as well as all service links, site diversions and infrastructure upgrades as enabling packages which were completed in advance of the main project, while the main project's planning, design and tender process was undertaken.

DESIGN ELEMENTS / PROCEDURES

Varming liaised extensively with HSE West, Estates Department and MPUH end users to ensure all M&E systems were detailed based on a common understanding. This approach facilitated the provision of clear directions to enable the building construction



Orthopaedic theatre corridor

Orthopaedic theatre nurse station

and M&E installations to be brief compliant. The facility was handed over ready for use with the majority of snags completed to the extent that the client was able to proceed with the fit-out and operation of the facility on program.

M&E design issues were addressed by the design team through dedicated workshops. As appropriate, hospital end-users, third party specialist equipment suppliers and M&E on the construction team were invited to attend. In all workshops emphasis was placed on ensuring effective delivery of the project by resolving issues ahead of commencement of related site activities so as to eliminate, as far as possible, changes on site, attendant costs and time delays.

The facility was independently validated by an AE(V) Authoring Engineer (Ventilation) and complies fully with HTM-03 guidelines.

COMPLEXITIES INVOLVED

BIM and 3D Revit Tool were utilised at design and construction coordination stages which provided sufficient information to enable planning of the building services, third party specialist equipment and structure. Detailed builders' work outlined the location and sizes of openings in the walls, floors and roof. Detailed room data sheets and cross sections of critical areas and heavily serviced areas were provided, showing building services, structure and building fabric. This allowed for off-site manufacture of services and walling systems which reduced the overall construction program.

Each theatre has been equipped with main lighting and theatre operating lights; one with inbuilt camera AV ORT and medical monitor screen for display purposes.

The theatre control panel provides lighting control, plant status indication, temperature and humidity indicated gauges, a clock with a sweep seconds hand which is easily viewed by operating staff, and the means of adjusting the set points for the theatre temperature.

An IP Intercom system has been provided for theatre reception, theatre suites and recovery room.

The new theatre block has the following mechanical systems: BeMS system, drainage, medical gases to HTM-02, ventilation and air conditioning to HTM-03 with UCV laminar flow canopies, heating, water services, firefighting equipment and fire/smoke damper system.

The new theatre block has the following electrical systems: LV switchgear, generator, UPS/IPS, cable containment, IT/comms and central core, medical pendants, general services and power, mechanical wiring, lighting and emergency lighting system, fire alarm system to L1, security system and intercom, patient systems such as nurse call and cardiac call system, induction loop, lightning protection and earthing and bonding.

SUSTAINABILITY OBJECTIVES

In-house computer modelling by Varming of the building design enabled various sustainable options to be evaluated. We prepared a Dynamic Simulation Model Report which verified full compliance with the requirements of the Building Regulations and CIBSE design guidelines for the daylight factors, overheating and ventilation rates, indoor air quality and BER requirements.

Varming Part L Modelling demonstrated that a building energy rating of A3 and NZEB was achievable. PV panels mounted on the roof was one of the factors that achieved this.

The finished building achieved a BER of A3. This included measured air tightness of less than $2m^3/hr\ m^2$ (1.9) which was tested to I.S. EN ISO 9972:2015.

Smart and Safer Electrical Infrastructure

Design the Future of Energy

Bender is one of the world's leading providers of solutions that make electrical infrastructures smart and safer.

Critical infrastructure relies on the safe, resilient, supply of power and energy, and Bender has provided customised and off the shelf solutions for over 25 years that support the needs of public and private sector business across the UK and Ireland.

Pioneering technologies coupled with its expert knowledge enable Bender to respond to the most challenging problems faced across healthcare, rail, defence, oil and gas, manufacturing, marine and renewable energy sectors.

Operations in demanding environments such as subsea cables and 24/7 processing plants rely on Bender to monitor, alarm, and forewarn of electrical failure in vital systems to protect services, people and production from costly disruption and downtime.

Bender UK & Ireland

A subsidiary of the Bender Group, and established for 25 years, Bender employs over 100 people across 3 locations. A provider of technical expertise, design consultancy, Bender products, and customised solutions and services – we offer installation, commissioning, repair, call-out, lifecycle and after sales support throughout the United Kingdom and the Republic of Ireland.

www.bender-uk.com

BENDER Design the future of energy

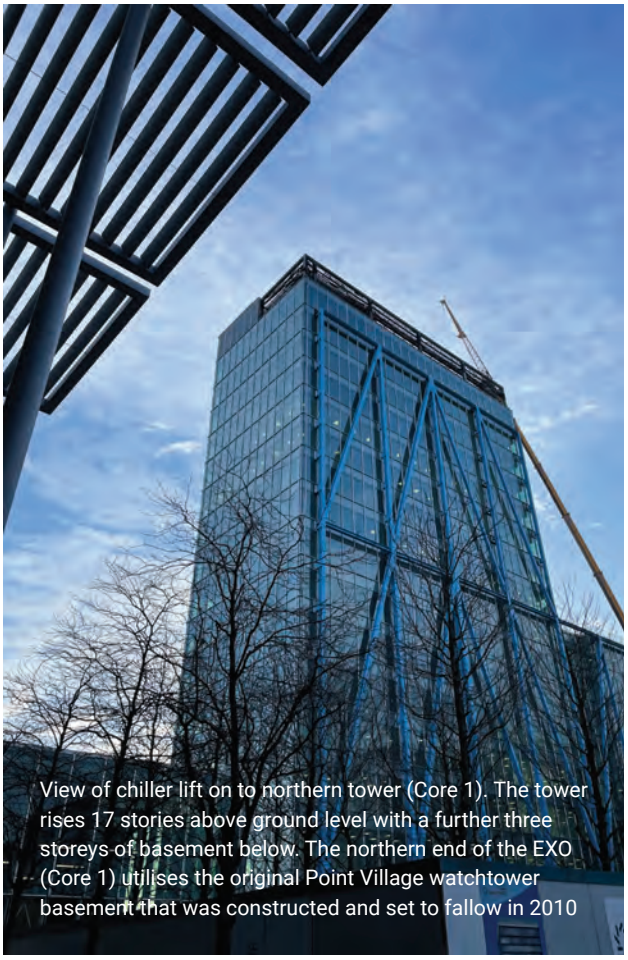
ACEI ENGINEERING EXCELLENCE AWARDS: MECHANICAL & ELECTRICAL – LARGE

WINNER: O'CONNOR SUTTON CRONIN – THE EXO BUILDING

The Exo Building Core 1 entrance

We in O'Connor Sutton Cronin, together with our client Grant Thornton and the entire project team are extremely proud to receive the prestigious 2023 ACEI Engineering Excellence Award for M&E Category for Large Project for The EXO Building. The ACEI Engineering Excellence Awards are among the most prestigious in the engineering industry, and winning one is a significant achievement. This award recognises excellence in engineering and is a testament to the skill, hard work, and dedication of the entire team involved in the project.

In February 2015, O'Connor Sutton Cronin & Associates MEP Ltd. (OCSC MEP) was appointed by Grant Thornton to provide professional engineering consultancy services to The EXO Building, Dublin 1. This project involved providing mechanical, electrical, and public health (MEP) engineering services including sustainability, LEED assessment, external feature lighting, and external building and public realm lighting design. OCSC Civil and Structural were responsible for the overall design, specification and detailing of the now iconic external exoskeleton.



View of chiller lift on to northern tower (Core 1). The tower rises 17 stories above ground level with a further three storeys of basement below. The northern end of the EXO (Core 1) utilises the original Point Village watchtower basement that was constructed and set to fallow in 2010

View of Core 02 plant room on Level 08 in the foreground and Level 16 external plant area and louvred 'crown'. The lighting design was carried out by OCSC

The EXO is located adjacent to The Point Village, 3 Arena and East Wall Road. The existing site formed part of the Point Village Development and as the new landmark bookend to the north quay, the EXO represents the height of construction innovation and building services co-ordination. This 17-storey, 16,025m^2, innovative, state-of-the-art building comprises three concrete cores with the highest core (Core 1) rising to 17 storeys. Cores 2 and 3 rise to seven storeys in height. These cores provide the main structural support to the exoskeleton, allowing the building to float above East Wall Road.

The building has an overall height of 20 storeys incorporating two levels of basement of the once planned U2 Watchtower, thus presenting significant servicing and coordination challenges. However, the building has been conceived with flexibility in mind, with the servicing strategy designed in accordance with British Council for Offices (BCO) and CIBSE guidelines. The EXO Building has attained WiredScore Platinum and LEED Platinum accreditation (first in Europe), from the US Green Building Council.

The exoskeleton of the EXO is the most dramatic and defining feature of the building, providing support and stability while also being aesthetically striking. The structure is made up of a series of diagonal steel beams that form a triangular pattern around the envelope of the building, drawing inspiration from the geometric shapes and forms of the nearby dockland cranes.

The sustainability features of the EXO Building, including free cooling chillers, combined heat and power (CHP), future district heating connections and thermal storage have all contributed to its LEED Platinum accreditation. The building also boasts an A3 Building Energy Rating (BER), which was challenging at the time of initial design.

The creation of a building that is innovative in terms of scale, structure, service integration, and distribution is no small feat. It required years of detailed briefing, planning, design, and collaboration between client, architects and engineers. Integration of the services with the supporting steels was a particular challenge as each member applied with intumescent paint to a specified thickness and a charring zone could not be encroached upon.

DESIGN STANDARDS

From the outset, the client was keen to commission a facility that was exemplary, that had a competitive edge in financial letting terms and the ability to offer high-quality

Aerial view of Level 08 external amenity space

and flexible office space for single or multiple tenants. It was therefore decided to adopt design standards that would achieve these clear goals:

- BCO Guide to Specification;
- CIBSE design guides;
- BREEAM – Performance of Buildings Exemplar in Use;
- WiredScore Certification;
- Grenfell interim findings and recommendations.

BUILDING FABRIC

The EXO was originally designed to comply with Part L 2008 of the Building Regulations, achieve an A3 BER and LEED v2009 Gold certification. By targeting the A3 BER at the outset, the thermal performance of the façade improved upon the backstops outlined in Part L 2008, exceeding them to achieve compliance with Part L 2017 (NZEB) requirements. Futhermore, the building's exemplar sustainability standards were recognised with a LEED Platinum certification (first in Europe) and NZEB (Nearly Zero Energy Building) rating.

In summary, the EXO Building is a remarkable example of contemporary engineering and design, showcasing a distinctive exoskeleton and advanced MEP systems. It represents the highest point in construction innovation and establishes a standard for building services coordination. The success of the EXO building, along with its WiredScore Platinum and LEED Platinum accreditations, demonstrates the dedication of OCSC MEP to offering sustainable, efficient, and inventive engineering solutions.

1st floor transfer truss and diagonal megacolumn

The external lighting design for both the EXO and the Point Square was carried out by OCSC. The lighting design included the upgrade of the CCTV and security systems

jve

J. Vaughan
Trusted since 1979
Electrical Contractors Ltd

J. Vaughan Electrical Contractors Ltd (JVE) is built on the reputation and integrity of Joe Vaughan and the Vaughan family. Established in 1979, today the company is trusted to deliver quality and safety at a fair price with an emphasis on customer care and value for money.

We pride ourselves on being one of Ireland's leading electrical engineering and contracting companies with an unrivalled expertise covering all areas of the industry including commercial, industrial, educational, residential, medical, and conservation & heritage.

We provide a complete range of services from "design and build" packages to installations, fit-out, specialist services, testing, maintenance, responsive and emergency call out work. Always customer focused, we believe in working collaboratively with all stakeholders to deliver a quality service on time and within budget.

Unit 2, Northwest Centre, Northwest Business Park, Blanchardstown, Dublin D15VA06
T: +353 1 8829728 F: +353 1 8829729 E: info@jve.ie W: jve.ie

MOORE CONCRETE

QUALITY PRECAST SOLUTIONS

REDI-ROCK

Freestanding & Retaining modular precast blocks suitable for a range of applications.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 15/H235

www.moore-concrete.com
sales@moore-concrete.com

CONTACT US
028 2565 2566 EXT 1

ACEI ENGINEERING EXCELLENCE AWARDS: ENVIRONMENTAL SUSTAINABILITY – BUILT ENVIRONMENT

WINNER: O'CONNOR SUTTON CRONIN MULTIDISCIPLINARY CONSULTING ENGINEERS – SPENCER PLACE

The Spencer Place development – River Liffey front view

The Spencer Place development is located at the heart of modern Dublin, occupying a prime 1.35 acre site in the Docklands. The development comprises of over 550,000ft^2 of Grade A office workspace across four buildings, one of which is an existing, naturally ventilated, historical building linked via a shared outdoor plaza, encompassing a seven-storey glazed atrium and three storeys of internal landscaped gardens with two levels of basement.

Completed in June 2022, Spencer Place became the first LEED V4 Platinum Campus project in Ireland, with all four buildings delivered to the highest level of certification possible.

OCSC was appointed as sustainability engineers on the project with key deliverables being to drive sustainability targets, achieve LEED certification, act as independent commissioning agents and provide embodied carbon life cycle analysis.

OSCS worked on the project in conjunction with Henry J. Lyons Architects, Axis Engineering, Cronin Sutton and P.J. Hegarty.

The Spencer Place development – Spencer Dock, central square park view

As sustainability engineers, OCSC's role began with a review of the project considering all aspects of sustainability that could be achieved and pursued. At the time LEED V3 was the assessment of choice. However, upon completion of design team workshops and design reviews it was apparent that the project could strive towards a higher level of sustainability, targetting LEED V4 and even attaining a Platinum rating across the development under more stringent conditions. Key sustainability highlights were rainwater harvesting to serve flushing, upgrades to the energy efficiency to achieve NZEB compliance and enhancements to material specifications.

OCSC also conducted an in-depth life cycle assessment (LCA) on the development's structures and enclosures with an aim to achieve a 10% reduction in environmental impact categories such as global warming potential, over the baseline design.

The Spencer Place development is award-winning which is reflected in the overall design. It meets the highest sustainability standards which go beyond industry best practice. Its holistic approach to sustainability has resulted in four LEED Platinium certifications and the first LEED V4 Campus project in Ireland, the highest sustainability standards available.

Link bridge between buildings

Glass façade

Night view

OCSC played a leading role in pushing the development's sustainability targets, implementing practical and measurable strategies and solutions aimed at achieving high performance through sustainable site locations, water efficiency, energy use and atmosphere, materials and resources, and indoor environmental quality.

All concrete specified had to have a minimum of 30% GGBS recycled content. Furthermore, structural steel sheets used were 97% recycled content.

Internally, water-efficient sanitary fixtures were carefully selected in collaboration with the design team and rainwater harvesting, used to serve the flushing demand of the building, was installed to reduce the development's overall water consumption. The total average water use reduction of the development is 44.39% below the LEED baseline, exceeding industry standard practice.

Externally, green roof systems and large vegetated areas have been installed, incorporating native and adaptive planting, increasing site biodiversity, conservation of native ecosystems and limiting the need for permanent irrigation to further reduce the site's water consumption.

In order to set P.J. Hegarty construction team up for the process ahead, OCSC developed checklist, reports and procedure templates for the on-site sustainability supervisor so that construction activity in relation to sediment control and pollution could be controlled and documented.

During construction ESC measures were tracked weekly on-site to reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust.

In relation to materials, all timber was FSC certified thus ensuring that timber only procured from legally managed and sustainable forests was used. In addition, materials with EPDs and material ingredient reporting certifications were prioritised.

In order to reduce the carbon emissions associated with materials and reduce the depletion of virgin resources, materials with high levels of recycled content were also prioritised. To further reduce the carbon impact of construction materials, preference was given to those that could be sourced within a 160km radius of the site, therefore reducing the carbon emissions associated with transportation. Of the total materials, 23% were sourced locally and contained recycled content.

Achieving the levels reported for responsible sourcing of raw materials was not an easy task for the project team, it required extensive research along with cost analysis. A detailed technical submittal process was developed and all materials had to be signed off from a sustainability perspective as being 'green' prior to any purchase on site. This had its own associated challenges, such as lead-in times and programme delivery. The architects, M&E, LEED APs and contractors had to work closely together to ensure that all aspects of the material requirements were fulfilled (eg. aesthetics, cost, performance etc.) This direct collaboration meant that project programmes were met in sync with the project objectives on sustainability.

All of these challenges were met by the project team with enthusiasm and energy to achieve a common goal: to deliver a holistically sustainable building. The LEED Platinum Certification on all four buildings serves to prove that this objective was not only met but exceeded for the Spencer Place development.

KEMPER hygiene systems KHS® from Hanley Controls

Do you want to save money, labour and operating costs?

Introducing your perfect solution:
KEMPER hygiene systems from
Hanley Controls

www. hccl.ie/quote

Benefits of Kemper Hygiene Systems:

- Prevention of stagnation
- Reduction of labour and operating costs
- Sustainable water usage
- Prevention of corrosion in the piping system
- Providing "natural" water at all outlets

HANLEY CONTROLS CLONMEL

Hanley Controls Clonmel Ltd.
Gortnafleur, Clonmel, Co. Tipperary
e: info@hccl.ie w: hccl.ie

International Gas Detectors (IGD) from Hanley Controls

www. hccl.ie/quote

International Gas Detectors (IGD) develop, manufacture and market a complete range of gas detection products designed to protect people and plant against gas hazards in industry, research and commercial applications.

HANLEY CONTROLS CLONMEL

Hanley Controls Clonmel Ltd.
Gortnafleur, Clonmel, Co. Tipperary
e: info@hccl.ie w: hccl.ie

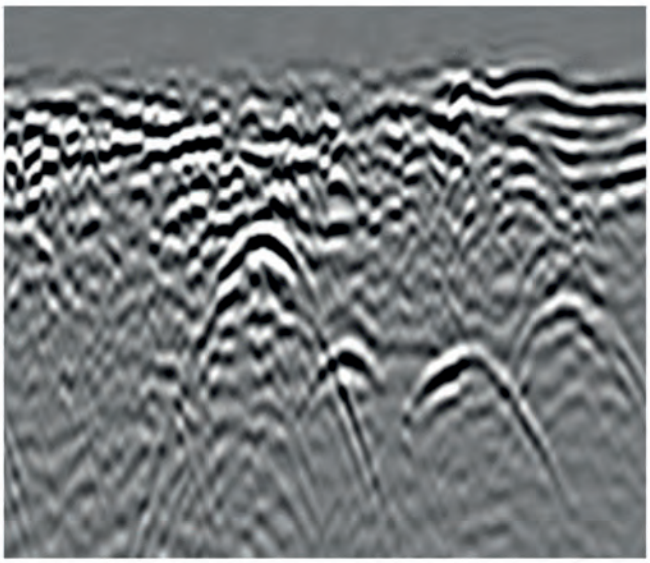
SCANTECH GEOSCIENCE

t: 01 2542680
m: 087 6614937
e: info@scantech.ie

scantech.ie

Ground Penetrating Radar (GPR) specialists since 1994

- Chartered Geophysicists (PGeo)
- ICE-BSI PAS 128 and ASTM compliant GPR-Utility surveys
- GPR for Utilities, Concrete, Geology, Pavement, Archaeology, Forensics and Forestry



ACEI ENGINEERING EXCELLENCE AWARDS: ENVIRONMENTAL SUSTAINABILTY – NATURAL ENVIRONMENT

WINNER: NICHOLAS O'DWYER – CLIFTON SEWAGE TREATMENT PLANT

View downstream through the ponds

Integrated constructed wetlands (ICW) are nature-based solutions that provide a low-energy, environmentally-friendly method of wastewater treatment with significant biodiversity benefits, promoting the UN Sustainable Development Goals.

Nicholas O'Dwyer (NOD) was appointed as designer by Barhale Doosan (contractor) to undertake the detailed design of Clifton Wetlands, Yorkshire Water's first ICW project. The scheme treats all flows from a small village (population equivalent of 180 persons) in Yorkshire. It is the first of its type in England to treat all flows and the first to be biodiversity net gain positive. The passive treatment process eliminates the need for energy-intensive, chemical treatment processes.

NOD reviewed the existing concept design and managed the required project constraints including planning, as well as environmental and ecological, in delivering the detailed design.

The site area was proportionally large for the treatment population (about three Olympic-sized swimming pools),

with a natural slope and impermeable clay layer – ideal conditions for supporting a nature-based solution. The site's shallow ponds were filled with over 20,000 plants of 25 different species; some to promote ecological conditions for nutrient uptake and some to promote a diverse habitat.

Working with Barhale Doosan, NOD designed the ICW, which comprises five ponds and covers an area of over 0.5 hectares. Work included design of the hydraulic profile of the ICW and setting levels of the ponds to maximise efficiency of the hydraulics and to minimise the required earthworks and, therefore, carbon footprint. NOD also carried out bespoke designs for the inlet and outlet structures to each pond and promoted the use of nature-based materials for construction, such as timber. These complex structures included a facility for controlling water levels in each of the ponds, along with measures to enable flow splitting, isolation, and bypass of each pond for routine maintenance. These structures were designed to ensure all required operation and maintenance works could be undertaken in a safe manner. Access pathways were interwoven between the ponds to provide easy access for site personnel and to enable the ponds to be inspected.

NOD was also responsible for the design of flow-measuring structures upstream and downstream of the ICW.

This nature-based solution was completed at 35% lower cost than building a conventional solution. The operational costs are also 40% lower. The operational carbon saving is 79%, and there was an embodied carbon saving of 50%.

The interconnecting ponds stimulate wildlife diversity – achieving a biodiversity net gain. The project enhances its local natural environment with a biodiversity net gain

View downstream post construction

of 2.28 – one of the first biodiversity net gain positive wastewater treatment works in England.

NOD was responsible for the earthworks design, a critical design aspect, and for setting the levels of the proposed ponds. Firstly, this involved detailed site investigation works and geotechnical assessment of the ground conditions. NOD was able to establish and quantify the suitable clay material that could be reused in forming the proposed ponds, thus reducing the project's carbon footprint by avoiding the importation of material to the site. A detailed cut and fill exercise was undertaken, with the desired outcome achieved of obtaining a neutral cut-fill balance to promote sustainability and economic benefit for the contractor.

The earthworks design was a significant challenge, as this exercise had to be completed with respect to the system hydraulics and site constraints. One restriction was that this was a confined site with a lack of available space between the pond edges and the site boundary for landscaping, hence the scope for cutting and filling was

Earthworks and construction of the ponds

Post construction with plants matured

View upstream through the ponds

limited. NOD designed the internal batters to the ponds and external batters to tie up with existing site levels. A detailed examination of the properties of the ground material established that sheet piles with accompanying geogrid reinforcement were required in areas of fill above, approximately 1m in height.

NOD designed the bespoke connection details at the inlet and outlet between each pond cell and applied creative solutions to identify unique, innovative designs that promoted sustainability. Each cell, five in total, required a unique design, as certain cells needed to operate either in a series or in a parallel arrangement (which required 50/50 flow splitting), and other cells needed to have facilities for the collection of samples. NOD evaluated available options, which included a swivel arm pipe, stop logs and various other forms of weirs. The stop logs were designed complete with lugs so that they could be added and removed by operatives in a safe manner.

Handrails and GRP mesh flooring were designed in accordance with Yorkshire Water standards to ensure the structures could be operated and maintained safely.

NOD designed chambers upstream and downstream of the ICW to house a flume chamber (upstream) and a V-notch weir (downstream). This enabled pre-treatment and post-treatment flow rates to be established and therefore the rate of evapotranspiration in the ICW to be calculated.

NOD's lead design role was critical to the delivery of this exemplar project. The design mitigated construction impacts – by reducing the amount of concrete poured and decreasing lorry movements. Additionally, no waste was removed from the construction site, protecting the local community from disruption and carbon emissions.

The Clifton ICW is a unique project that offered multiple opportunities for research across many areas, including climate impact, evapotranspiration and nature-based solution applicability in the water sector. It provides understanding of how sustainable treatment plants could be adapted across other rural or isolated locations and scaled up for larger plants.

NOD was delighted to be part of this award-winning project – the first wastewater treatment works in England to treat all flows and the first to be biodiversity net gain positive – which provides significant insights to further develop sustainable treatment plants and their role in climate resilience.

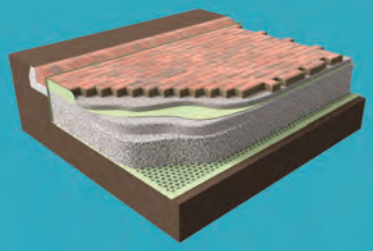
LEARN.

ROADSTONE ONLINE SEMINARS

Seminar platform offers a selection of CPD courses that address key topics within the building regulations as well as important technical advice on products and standards.

FEATURED COURSE

SuDS & PAVING



Enroll NOW on cpd.roadstone.ie

roadstone
A CRH COMPANY

ACEI ENGINEERING EXCELLENCE AWARDS: PROJECT MANAGEMENT

WINNER: ARUP – DIGITAL MANUFACTURING IRELAND (DMI)

Completed Digital Manufacturing Ireland
© Donal Murphy Photography

Digital Manufacturing Ireland (DMI) is an industry-led national centre that enables Irish-based manufacturers to access, adopt and accelerate new digital technologies which solve real world challenges and drive their future competitiveness. Supported by the Government through IDA Ireland, the facility is located in Limerick's National Technology Park. Designed for 100% expansion capability and maximum flexibility, the 12,000ft^2 hub features a technology-focused research and development floor that includes an end-to-end physical and digital production line with digital twin capabilities and offers several collaboration and administrative spaces.

The project team, led by Arup, included Henry J Lyons Architects and Michael Barrett Partnership Quantity Surveyors. Arup was appointed to deliver project management-led, integrated, multidisciplinary design team consultancy services for this project. This included civil, structural, mechanical, electrical and fire engineering, health and safety, BIM, environmental and manufacturing services. The Arup scope also included the design, planning and implementation of all subsequent contracts for the provision of a high specification, technically complex advanced manufacturing building, as well as the creation of a high-level masterplan of IDA's lands to pinpoint the most suitable location for the development. As the building would house smart manufacturing

technologies, a location with good broadband connectivity was essential. These technologies produce significant amounts of data, requiring the installation of appropriate IT, mechanical and electrical infrastructure to support.

GLOBAL EXPERTISE

Leveraging Arup's 50-year track record in advanced manufacturing and expertise in the latest global demands of sustainability, digitalisation and resilience, the project team supported IDA in navigating these intricate challenges. At masterplanning stage, the team conducted informative visits to recently completed projects in the UK, extracting valuable lessons learned and discerning emerging trends. The knowledge garnered helped shape and guide design solutions with a 'best for project' approach.

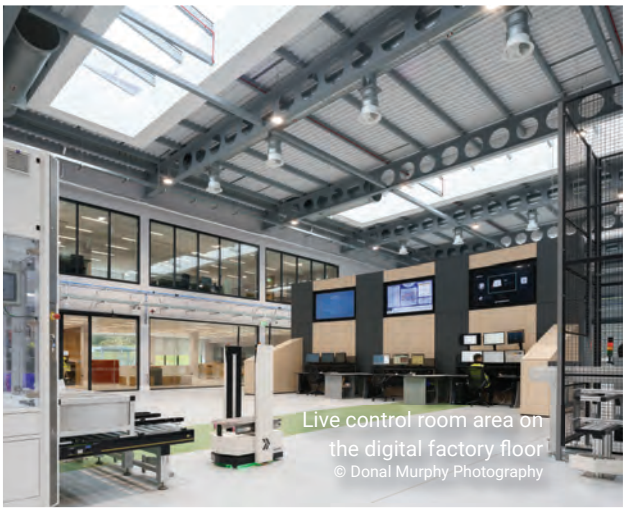
On commencement, masterplanning and initial design were primary focus areas. This involved identifying the optimal location for the facility – one that accommodates immediate needs while allowing for future expansion. National Technology Park, Limerick was selected, taking into consideration potential future developments in the business park.

PLANNING CHALLENGE

Given the importance of the project in maintaining the position of Ireland's manufacturing base at the forefront of digital transformation internationally, the procurement process was progressed in parallel with planning. This decision was made to accelerate the programme and commence construction at the earliest possible date. The procurement strategy was aligned with current public procurement guidelines and all appointments were made via a public works suite of contracts, which included the provision of building works designed by the employer.

Through focused developed design efforts, the project progressed promptly, producing an IDA-approved scheme. In December 2018, a formal planning application was submitted to Limerick City and County Council. Following response to a request for additional information, permission was granted in May 2019. Although the decision faced an appeal to An Bord Pleanála, it was upheld, and permission was reaffirmed in September 2019.

After a competitive procurement process, Conack Construction was appointed as the main contractor to deliver this part single/part two-storey, industry-led manufacturing centre. Following COVID-19 enforced shutdown from January to May 2021, the base build was successfully completed and handed over to IDA in January 2022.



Live control room area on the digital factory floor
© Donal Murphy Photography

CLOSE COLLABORATION

The design team was led by Arup's lead project manager who acted as project manager/coordinator and client liaison for all aspects of the project through all project stages. From the outset, the multidisciplinary design team adopted a collaborative approach, working with IDA and industry experts to create an advanced, adaptable building to house the DMI. Maintaining close collaboration with end users, technology professionals, construction contractors and the digital factory provider throughout the project lifecycle ensured the integration of innovative and sustainable solutions. The design phase for the fitout commenced in February 2022, informed by stakeholder workshops that ensured the end user vision for the digital factory would be achieved.

Office and breakout spaces overlook the factory floor and control room, encouraging open collaboration and partnerships
© Donal Murphy Photography

First floor breakout space
© Donal Murphy Photography

Throughout the 12-week construction programme, a proactive approach to change management was taken, fostering daily communication and agreed-upon workarounds to expedite the building fitout.

Following completion of the base build construction works and handover to IDA, Arup's appointment was extended to work with the end users of the building to design and fit-out the facility and incorporate desired modifications.

INNOVATIVE DESIGN

The building was thoughtfully designed for flexibility and the potential for future expansion, aligning with smart manufacturing objectives. A double height research and development floor provides a world-class space for collaboration and delivery of the next generation of manufacturing. It is supported by a compressed air ring main for easy tap offs and a 250A BusBar system for 40no connections for the end user. These innovative mechanical and electrical design solutions ensure adaptability to future technologies, resulting in a resilient, future-ready building for the DMI.

Perimeter servicing to the digital factory floor
© Donal Murphy Photography

DIGITAL SOLUTIONS

Priority was given to delivering this project through BIM. The design was developed through a comprehensive 3D model prepared in Revit and connected to analysis packages used by the various design disciplines. This shortened the overall design timeline as flythrough BIM models provided a deeper understanding of the building's visual and spatial characteristics during client review sessions, saving valuable review time.

Through close collaboration and the strategic application of digital tools, the project team overcame multiple challenges including navigating a planning permission appeal, managing a protracted procurement process and manoeuvring the unprecedented impacts of Brexit and the COVID-19 pandemic.

This collaborative approach extended across all facets of the project, from meticulous project management to streamlined procurement and contract administration, leading to a reduction in project costs, continuity of design assumptions from concept to handover and a decrease in post-construction works to fast-track DMI operations. The project was delivered with zero lost time accidents during the base build and fitout phases.

Unlock your future with DORNAN

Explore Exciting Career Opportunities Today

www.careers.dornangroup.com

ACEI ENGINEERING EXCELLENCE AWARDS: INNOVATION – LARGE

WINNER: O'CONNOR SUTTON CRONIN – THE EXO BUILDING

The Exo Building

Standing at 73 metres tall on Dublin's north docklands, The Exo Building is the tallest office block in the country and serves as a landmark where Dublin City meets Dublin Port. The Exo is a masterpiece of engineering which required innovation throughout in order to meet the vision set out by Shay Cleary Architects and delivered by MCA. The development successfully delivers over 16,000m^2 of prime commercial real estate, while maintaining the public plaza at ground floor level adjacent to the 3Arena.

The development comprised the following scope, for which OCSC provided civil, structural, mechanical, electrical, sustainability and environmental engineering consultancy services:

- Demolition and rebuild of top floor of existing three-storey basement to accommodate future light rail (LUAS) extension.
- Construction of new basement element under north core of The Exo to link with existing basement.
- Construction of standalone 250m^2 commercial space

Public plaza below The Exo Building adjacent to the 3Arena

known as The Glass Box.

- Construction of steel frame Exo building incorporating three RC cores ranging from nine to 17 storeys.

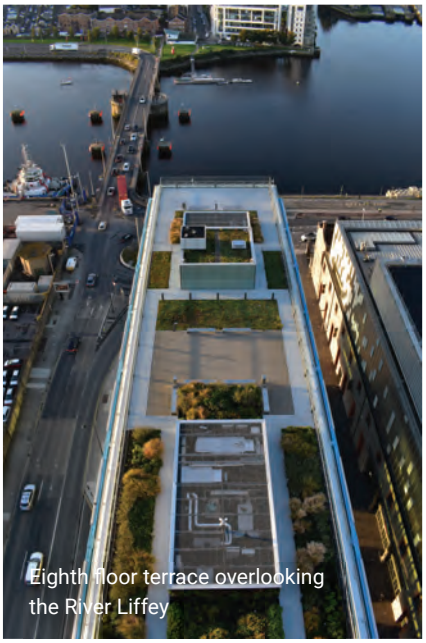
The Exo Building is a steel framed structure with three insitu concrete cores that are supported on piled raft foundations. These three cores are the only vertical supports for the building and house the primary structural steel 'megacolumns' which support the iconic exoskeleton steel truss and lends the building it name. Internally, the steel frame is laid out on a 9x9m grid with secondary steels supporting composite metal deck flooring.

The primary external truss – The Exo Truss – provides vertical support to the building and is supported at just three points aligning with the centre of each core. This layout dictated the need for 36m spans between cores and a 21m cantilevered overhang at each end, eight storeys high to the south and 16 storeys high to the north. This major piece of structural engineering required significant temporary towers to support the truss elements as they did not become self supporting until the truss was installed in its entirety. A series of nodes were developed and fabricated from solid plate to allow complex member arrangements to be accommodated, with bolted connections positioned away from the points of maximum stress. The location of the Exo Truss outside the building façade line attracted a host of design issues including structural, thermal, weathering, corrosion, detailing, buildability and aesthetic considerations which were overcome during detailed workshops with all stakeholders.

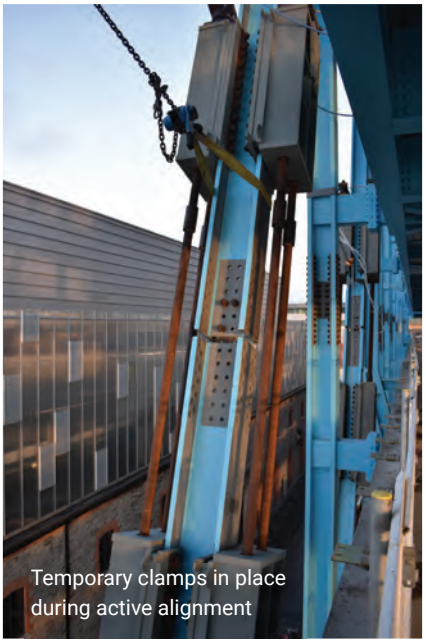
The megacolumns embedded within the RC cores are diagonal in elevation in order to fit within the ground floor footprint, and penetrate the façade between levels 3 and 4 to connect with the Exo Truss. The splayed nature of these columns results in a significant tie force across the level 4 floor plate, which had to pass through the congested lift and stair core area. The tie force was resolved by transitioning a steel column section into two vertical plates, which clamp to notches left out of the dividing wall within the lift shaft. This arrangement allowed the efficient transfer of forces without clashing with the lift equipment.

During a value engineering exercise, the internal floor plate spans were reduced from 18m across the width of the building to 9m by introducing a line of internal columns. These columns are transferred out at first floor level by two (separate) storey high transfer trusses spanning 18m between the ground floor cores. Each of these trusses were installed as a single element in one

The Exo Building viewed from the south



Eighth floor terrace overlooking the River Liffey



Temporary clamps in place during active alignment

lift which substantially minimised temporary works and connections on site.

The 21m cantilevers at the north and south ends of the building were a particular challenge on this project. It was clear from initial analysis that deflection at each end would be excessive and outside the allowable limits for the project. Many design solutions were considered and tested until an 'active alignment' solution was deemed to be most efficient. This procedure involved installing the diagonal truss members at each end shorter than required, then hydraulically jacking them together until the equivalent permanent load force was induced into the diagonals. This process would remove all permanent load deflection, with only the more manageable live load deflections remaining. To carry this out on site, large steel brackets were fabricated which housed over 40 clamps each. These clamps were attached to the flanges of the truss diagonal and then hydraulic jacks and macalloy bars were used to pre-stress the diagonals, resulting in an elongation of the diagonals by approximately 30mm. This procedure was a first in Irish construction and was a resounding success. Once complete, the recorded deflection of the northern cantilever was 4mm and 0mm at the southern end.

As a result of this complex engineering, the architectural vision was delivered on site providing 16,000m^2 of office space while occupying just 860m^2 at ground floor – a 60% reduction on the upper floor plate size. The building is suspended 8m above ground floor to continue the generous plaza space below and appears to float due to the lack of vertical structure below level 1. The building was designed to achieve Nearly Zero Energy Building (NZEB) standard, LEED Gold Certification and Wired Certified Platinum putting it at the forefront of modern construction

The building is a world class structure with a completely unique form of construction that pushed the boundaries of engineering. Rarely on a building is the structural form worn so proudly at the façade and this key design aspect resonates exceptionally well with the exposed steelwork of the adjacent dock cranes and the overall sense of this historically industrial area of Dublin City.

Level 4 tie transitioning at lift shaft

Temporary towers in place to receive Exo Truss

bennett

A LEGACY OF CONSTRUCTION EXCELLENCE

WWW.BENNETTCONSTRUCTION.COM

ACEI ENGINEERING EXCELLENCE AWARDS: INNOVATION - SMALL / MEDIUM

WINNER: MWP – HOWTH FISHERY HARBOUR CENTRE MIDDLE PIER UPGRADE

Howth Middle Pier upgrade completed works

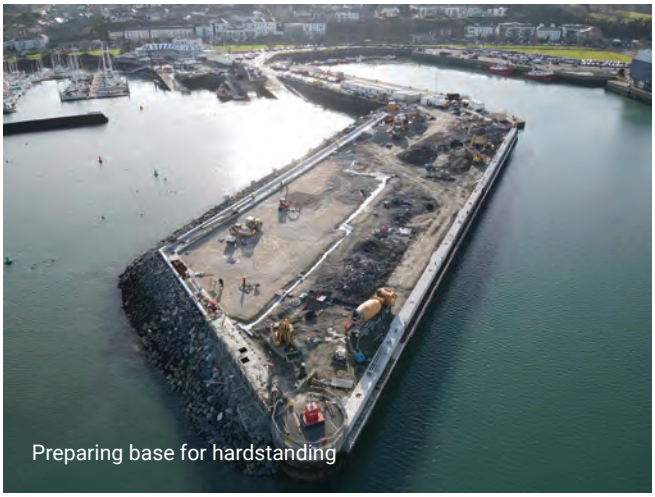
In the early 1980s major development works were undertaken to the Fishery Harbour Centre (FHC) in Howth. These works included the construction of a breakwater (Middle Pier) down the centre of the harbour, part berthing face, part rubble mound breakwater. To provide more berthage and hardstanding area within the FHC, the Department of Agriculture, Food and the Marine (DAFM) commissioned MWP, in 2016, to provide engineering and environmental services relating to the upgrade of the breakwater section of this Middle Pier.

The upgrading included the provision of 134m of additional berthing face, the dredging of 6000m^3 of contaminated soft silt, and the reclamation of a 0.2ha area. The project was put forward for an ACEI Engineering Excellence Award because of the innovative use of the treatment and reuse of contaminated dredge spoil to reclaim the required area.

The services provided by MWP related to preliminary design, environmental studies, planning, waste permitting, detailed design (structural, civil, mechanical and electrical), tender documentation, tendering, contract administration, site supervision and PSDP. In addition to planning, a waste facility permit was required by Fingal County Council because part of the development consisted of the treatment of dredge spoil from the berthing pocket and its reuse in the reclamation of an area adjacent to the works.

Having obtained the requisite planning and waste permitting approvals MWP completed the detailed design and managed the tendering process. Following contract

Howth Middle Pier before upgrade



Preparing base for hardstanding

award of the works, MWP undertook the role of Employers Representative for the construction stage, administering the contract and providing a senior and an assistant resident engineer for the duration of the construction period.

TREATMENT OF DREDGE SPOIL

A substantial element of the works was to develop a method of treatment for the contaminated dredge spoil to enable its reuse in the pier upgrade.

Client requirements relating to this included:

- The dredging of some 6000m^3 of contaminated soft silty material to create a berthing pocket in front of the new 134m of berthage.

And

- The reclamation of a 0.2ha area on the east side of the middle pier for the creation of a hard-standing area for use by the fishermen.

The dredge spoil was contaminated to a degree which precluded its disposal to sea. An assessment made of potential disposal options concluded that the most cost-effective disposal method would be the treatment and reuse of the dredge spoil to create the required reclamation.

Earlier work by MWP in the development of Bantry Inner Harbour for the Port of Cork indicated that it was possible to treat and reuse dredge spoil. In the case of Bantry, the material was used to reclaim an area that was subsequently used as an amenity area. Based on this it was considered possible to obtain a permit for the treatment of contaminated (but non-hazardous) dredge spoil and to successfully use it to reclaim an area from the sea. In the case of Howth, the volume of material was less than in Bantry, requiring a waste facility permit, from Fingal County Council, instead of a waste licence from the EPA. However, the strength and settlement criteria for Howth were more onerous because of the proposed future use of the area.

Services were provided by MWP relating to the treatment and reuse of the dredge spoil, permitting required,

Construction of bunded area for dredge spoil

Dredge spoil storage areas – filled


Rock armouring of eastern perimeter of reclamation

Treatment of dredge spoil allu system

trials undertaken prior to construction, construction methodology and testing undertaken during construction.

Several sets of trials were undertaken during the planning and design stages and further on at an early stage during construction. The trials were designed by MWP in collaboration with the testing laboratory. For the most part the trials related to strength characteristics with additional tests relating to the ability of the binder to lock in contaminants. The initial trials indicated that the use of Ordinary Portland Cement (OPC) alone would be unlikely to achieve the required strength characteristics, however, a binder consisting of Ground Granulated Blast Furnace Slag (GGBS) and OPC could. Following several further tests, a likely optimum mix of these two constituents was settled upon, consisting of 70% GGBS and 30% OPC at a dose rate of 150 to 175kg/m^3 of dredge spoil.

A design type specification was used by MWP within the tender documents specifying minimum amounts of binder to use, the treatment methodology and tests.

During construction, further tests were undertaken by the contractor to achieve a more rapid strength gain for construction purposes. In the treatment a dosing rate of 190kg/m^3 was used. The dredge spoil was initially placed in its final position and stored until the area was filled. Treatment was then undertaken using an Allu system with location monitored by GPS and dosage by flowmeter with the mixer working around the perimeter of the storage area gradually moving in on the area as the material gained sufficient strength through treatment.


Foundation of berthing face

Tests specified by MWP and undertaken on the treated dredge spoil included:

- Plate load tests to establish CBR values. Values in the range 23 to >100% were achieved.
- SPT tests undertaken in two cable percussive boreholes. An N value of 108 was obtained in both holes at 1m below top level.
- Dynamic probing at seven locations was undertaken giving values between 4 and >50.
- USC tests on samples taken from the treated material achieved average strengths of 550 and 1250kPa at seven days and 90 days respectively.
- Settlement monitoring at six points indicated settlement of less than 6mm in the 5.5m depth of treated material.
- Monitoring of binder strengths and material temperature.

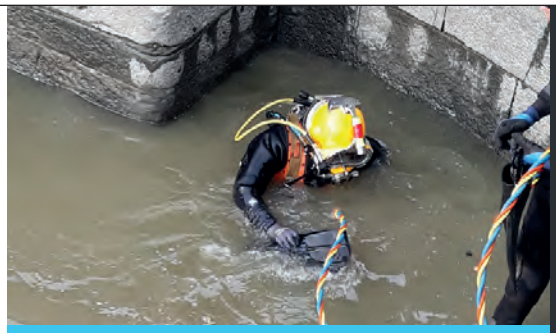
The test results and the works on the ground indicate that it is feasible to beneficially reuse contaminated dredge material and that good strength and settlement characteristics can be achieved.

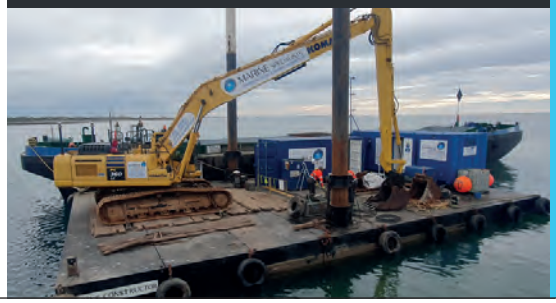
The works were constructed from October 2020 to May 2022.

A paper was prepared by and presented by MWP personnel at the Civil Engineering Research Association of Ireland (CERAI) Conference held in the TUD in August 2022. The title of the paper was ‘Dredge Sediment Stabilisation Works at Howth FHC’.

MARINE SPECIALISTS

COMMERCIAL DIVING & MARINE CONTRACTORS





OUR SERVICES INCLUDE:

- Commercial dive teams for inspection, survey and construction works
- Marine outfalls, dredging and pipelaying
- Long reach 360˚ excavator hire
- DTTS licenced vessel hire
- Marine plant hire

Marine Specialists Ltd.
Larkins Cross, Barntown,
Wexford, Ireland, Y35 K2N3

T: +353 (0) 51 562 061
E: john@marinespecialists.ie
www.marinespecialists.ie

PHL HYDRAULICS

PHL HYDRAULICS IS IRELAND'S SPECIALIST IN BRIDGE/STRUCTURAL JACKING, PRE-LOADING/MONITORING, BOLTING, BAR AND STRAND STRESSING.

- BRIDGE / STRUCTURAL JACKING
- PRE-LOADING / MONITORING
- MOVING STRUCTURES-SWING BRIDGES / LIFT BRIDGES / RO RO'S
- POST-TENSIONING EQUIPMENT
- BASEMENT PROPPING / FLAT JACKING
- ANCHOR STRESSING
- BOLT TIGHTENING
- HYDROTESTING

TEL: 087 2565640
Email: nfallon@phlhydraulics.com
www.phlhydraulics.com

Head Office:
Unit 408C
Greenogue Business Park,
Rathcoole, Co. Dublin.
D24 W306

Cork Office:
Unit 6 / 7
Ballytrasna Business Park.
Little Island. Co. Cork.
T45 VA89

Galway Office:
Oranmore Business Park,
Oranmore,
Galway.
H91 Y1YN

Belfast Office:
110 Tamnamore Rd.,
Dungannon,
Co Tyrone.
BT71 6HW

UK Office:
Unit 5 Greenwood Court,
Ramridge Road,
Luton,
LU2 0TN

ACEI ENGINEERING EXCELLENCE AWARDS: OVERSEAS

WINNERS: O'CONNOR SUTTON CRONIN – GOODLUCK HOPE

Completed view from River Lea

We in O'Connor Sutton Cronin, together with our client Ballymore Properties and the entire project team are extremely proud to receive the prestigious 2023 ACEI Engineering Excellence Award for our Goodluck Hope, London, UK project in the overseas category. O'Connor Sutton Cronin provided the civil and structural design of this fantastic project which is a new riverside neighbourhood located directly on the River Thames and the River Lea at the historic Leamouth Peninsula. It's an honour to be recognised for our expertise and passion for overseas engineering.

Goodluck Hope is a mixed-use development which comprises of 814 residential units, 2,300 m^2 of commercial space and 250 m^2 of education floorspace over 13 blocks ranging from four to 30 storeys. The development also features a 6,000 m^2 basement and a restored, listed dry dock. Six of the 13 blocks are of fully precast concrete construction, including the 30-storey Douglass Tower, which was the tallest fully precast building in the UK at the time of construction and features a steel cantilevering crown structure. This project is an excellent demonstration of an Irish client, Sean Mulryan's Ballymore, crafting a unique new development which

Sitewide aerial photo under construction

along with the adjacent London City Island development are transforming two former brownfield sites in east London into a social and cultural hub for Canning Town.

We were tasked with designing a precast concrete 'sandwich panel' system on behalf of the contractor Byldis. These panels feature a reinforced concrete inner leaf, insulated cavity, and brickwork outer leaf installed right at the factory. The project was quite a feat; our design covered all buildings involved in this development, with different construction methodologies such as reinforced concrete, traditional masonry, fully precast frame, and steel frame solutions. Furthermore a 6,000 m^2 basement was built complete with car parking and back-of-house uses, using steel sheet piles and a concrete basement slab. The project is bordered by watercourses on three sides and involved the restoration of a Grade II listed dry dock, as well as river wall improvement works.

The apartment buildings were constructed using a combination of reinforced concrete (RC) frame and fully precast concrete elements. The precast components include party walls and facade sandwich panels, which feature an inner layer of reinforced concrete, an insulated cavity, and an outer layer of brickwork. The precast RC walls form the party walls between apartments and support the precast, prestressed concrete, wide-slab floor units. The sandwich facade panels also provide support for the floor slabs where required. The innovative use of factory-installed masonry cladding with glazing had not been seen before in the UK. By sourcing the facade panels from Holland, a wide range of European brick types and colours were available. The precast specialist subcontractor for the project was Byldis Ltd. The 30-storey Douglass Tower is the tallest, fully precast building in the UK and features a steel 'crown' structure that houses a resident's lounge. Careful coordination was required in detailing the interfaces between the steel structure and the precast sandwich panel system. Goodluck Hope has been delivered employing several structural framing solutions including traditional RC frame, traditional masonry construction, steel frames and a precast sandwich panel system.

There were several complex interfaces to be resolved between these various structural systems throughout the scheme. Of particular note, was the interfaces between the RC frame and the precast sandwich panel system and also the cantilevering steel crown structure on Douglass

Block JKL under construction

Byldis precast sandwich panel installation

Completed view from River Thames

Tower. A corner of the Douglass Tower structure has been set back to allow access to the river wall by the Environment Agency in case emergency repairs are required. A tapered concrete column had to be introduced to achieve this set back, which had to be constructed in traditional reinforced concrete. The interface at this junction needed to support the precast system and required careful consideration of the tie forces introduced because of the tapered column supporting 27 storeys above.

The crown structure hangs from the precast panels using large steel gallows brackets that extend up to two storeys below level 30. The detailing of these was complicated and needed to take careful consideration of the limitations of the precast panels. The manufacturer and O'Connor Sutton Cronin's in-house designers put their heads together from the beginning, working in close coordination to ensure every intricate detail was resolved, making sure the precast panels were ready for production on time. The use of factory panels has resulted in a higher quality product that can be delivered to stricter construction tolerances, reducing material wastage. O'Connor Sutton Cronin made several visits to the Byldis factory in Holland to inspect the construction of the panels, which use advanced techniques like robotic reinforcement machines to construct the cages for the structural inner leaf, thus increasing construction efficiency.

Ballymore set quite stringent thermal performance criteria to be met by the façade, which the specialist, Byldis needed to integrate as part of their system. This high-spec facade ensured the need for active heating and cooling could be reduced, leading to a more sustainable development over the course of its design life. The Byldis system allows for a greatly reduced on-site construction programme, typically delivering a watertight floor per week and eliminating the requirement for a scaffold, which eliminates a large health and safety risk. The project also incorporates several other sustainability measures such as the use of GGBS up to 50% as a replacement for cement in concrete mixes.

Completed townhouses

ACEI ENGINEERING EXCELLENCE AWARDS: MICROFIRM

WINNERS: TORQUE CONSULTING ENGINEERS LIMITED – TROPICAL FRUIT WAREHOUSE

View of completed Block 2. Photograph taken from Sir John Rogerson's Quay. Block 1 visible in the background

The Tropical Fruit Warehouse is located in Dublin's South Docklands and overlooks the River Liffey.

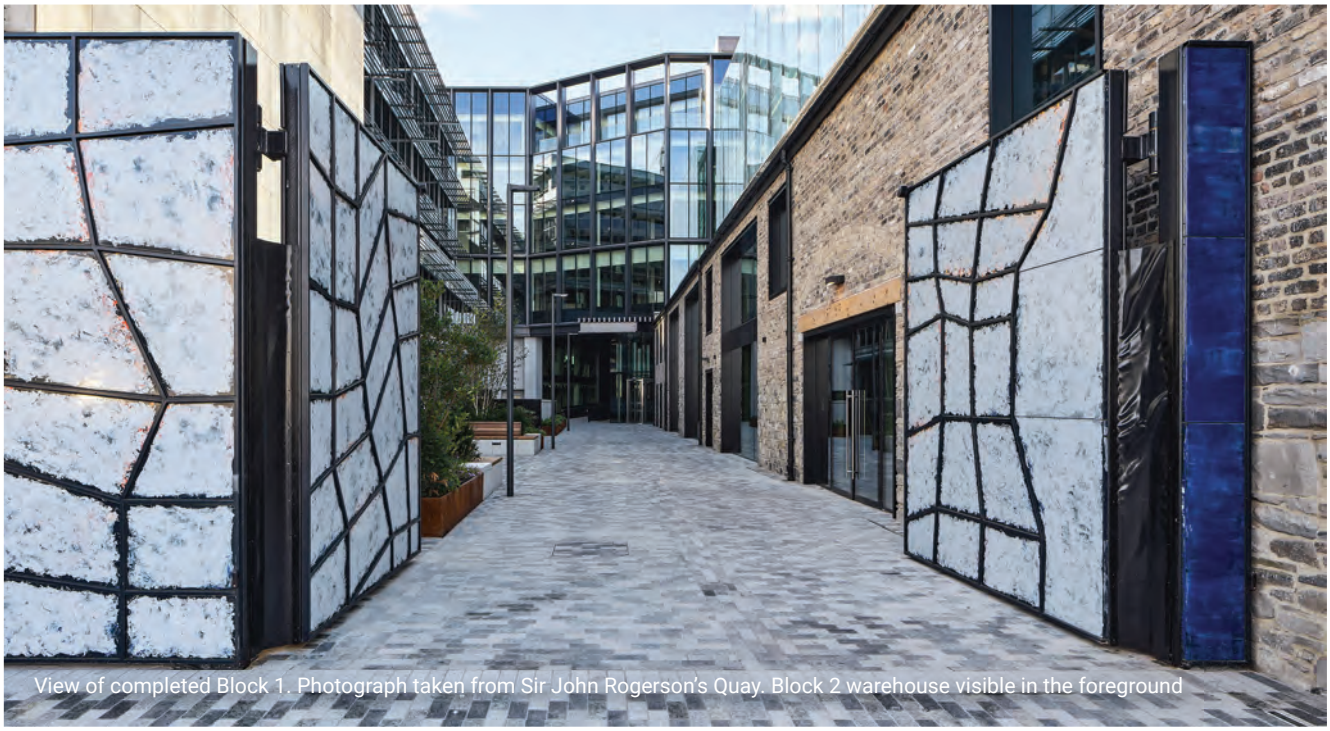
The project comprises three distinct buildings which combine together to provide an overall office campus of 80,000 square feet.

The resulting design consists of interconnecting rectangular office buildings, an historical warehouse building beneath a modern, cantilevered floating structure above which is wrapped in 'twin skin' full glass box envelope, with views out over the Samuel Beckett bridge.

Externally, the glass box facades create the sense of a transparent glass box floating above the heavier masonry facades of the historic warehouse below.

Torque Consulting Engineers was commissioned by IPUT to provide structural and civil engineering design services for the development, commencing in early 2017.

The project design intent comprises two distinct office blocks (Block 1 and Block 2) which are interconnected with a two-storey glazed link bridge at third and fourth floor levels. There is also a single storey glazed atrium connecting the buildings at ground floor level.



View of completed Block 1. Photograph taken from Sir John Rogerson's Quay. Block 2 warehouse visible in the foreground

The Block 2 office building, constructed at third and fourth floor levels, faces onto the quays. It is cantilevered on all four sides above the third building on the site (the existing two-storey protected structure warehouse), with a single central concrete core and a minimal number of structural columns to allow the structure to cantilever over the warehouse to achieve the appearance of the glass box 'floating' above the existing warehouse.

The Block 1 office building comprises a six-storey office block over a two-storey basement, with a 3.5m cantilever floor plate at Level 2 to roof inclusive, overlooking Whitaker Square. There are transfer structures at second floor to allow for a two-storey pedestrian walkway under the building and at ground floor to allow for the carpark layout at the basement -1 level.

The site measures approximately 75m x 58m in plan and was extremely restricted on its four sides, with live office buildings to the west, east and southeast, a live hotel also to the southeast and Whitaker Square to the south. The client/architectural design intent and the site constraints determined that a structural steel solution with lightweight metal deck flooring was chosen for the primary structure above ground level.

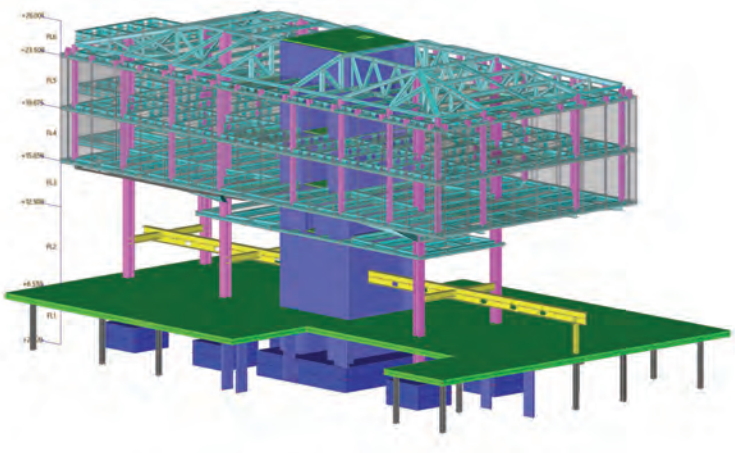
Due to the variable nature of the ground conditions on the site and the high foundation loadings, it was decided to found the buildings on CFA concrete piles, of varying diameter.

Due to the complexity of the structure required to achieve the client/architectural intent, the entire structure to Block 1 and Block 2 was modelled using SCIA Engineer, a 3-D finite element structural modelling package.

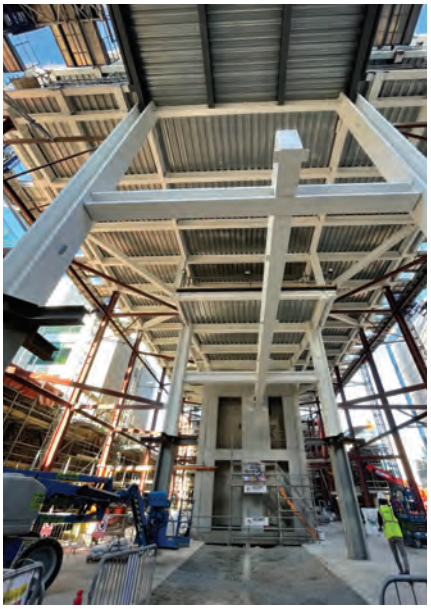
During the intermediate stages of the project the structural model allowed us to accurately determine slab edge deflections for various load cases. The structural design was fine-tuned iteratively to meet the deflection requirements of the glazing subcontractors.

In addition to the structural model, the entire project was modelled using Revit. The Revit model was invaluable at the early stages of the project, particularly with the coordination of the glass block over the warehouse structure and also the coordination of building services with the structure.

Due to the complexity of some of the steel truss to column connections in Block 2, it was agreed that truss/column junctions would be fabricated/welded as one section, with truss chord members bolted to the junctions using splice plates and high strength Tension Control Bolts.



3-D view of structural model for Block 2



View of Block 2 structural frame under construction. Photograph taken from Block 2 ground level

View of Block 2 structural frame under construction. Photograph taken from Block 2 ground level

View of completed Block 2, 'floating' over the warehouse. Photograph taken from Block 1

Because the entire structure to Block 2 is suspended above the roof of the warehouse, it was determined that 18 No. temporary steel columns would be erected around the perimeter of the Block 2 structure at 5.1m c/c, to allow the primary steel structure to be constructed on top of these columns, which stood circa 13m high and were braced laterally.

The entire Block 2 structure was constructed three storeys above ground level (13m) using the 18 No. temporary steel columns as temporary support.

The head plates to these 18 No. columns were designed such that a hydraulic ram could be placed in a small central void and expanded to allow the release of two outer steel chocks, thus allowing the suspended structure to be self-supporting. The entire suspended structure, comprising 18 node points over an area of 19.5m x 40m, was thus lifted clear of all its temporary supports concurrently whilst the support chocks were released.

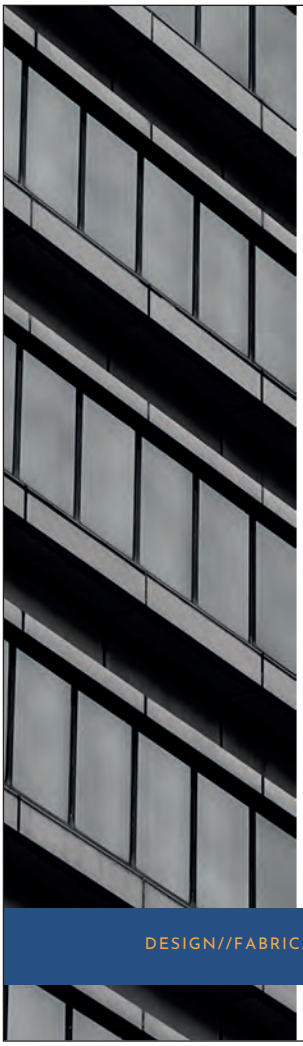
Once the structure was self-supporting, the floor structures (150mm metal deck 'Comflor' floors supported on cellular beams) were poured on consecutive days starting from the roof down. This enabled the self-weight of the wet concrete floor slabs to be taken into the structure without unnecessary stresses being introduced into the concrete floor slabs.

Survey works commissioned prior to the main project starting on site determined that a significant number of the built-in timber roof truss ends to the existing warehouse had decayed and had been replaced using structural steel channels bolted onto the timber trusses. To repair the roof trusses faithfully and allow working space for the Block 2 overhead structure, the roof trusses were carefully taken down, transported to a specialist joinery workshop and faithfully restored. The roof trusses were transported back to site and erected once the Block 2 overhead structure was structurally self-supporting, and the temporary column supports removed.

The Tropical Fruit Warehouse is an innovative structure, realised by experienced designers and contractors working together to achieve a common goal, which is the client/ architectural intent of constructing a two-storey 'floating' glass box above a protected structure warehouse.

It is a benchmark in Irish structural engineering, with all parties overcoming the technical challenges presented as a result of placing a suspended cantilever structure over an existing building.

View of completed Block 2, 'floating' over the warehouse. Photograph taken from internal landscape courtyard



ESTABLISHED IN 1988

STEEL & ROOFING SYSTEMS LTD

Kilkenny Road, Castlecomer,
Co. Kilkenny, Ireland
Tel: +353 (0)56 4441855/6/9
E: info@steelandroofingsystems.ie
W: www.steelandroofingsystems.ie

DESIGN//FABRICATION//ERECTION//CLADDING

WHO ARE WE?

Steel & Roofing Systems was founded in 1988 with the aim of supplying structural steel and cladding to the ever growing industrial and commercial sector in Ireland. Since its founding, the company has grown to be one of the leading structural steel fabricators in the country with an annual production capacity of 10,000tn.

We are one of very few companies in the sector that have both structural steel fabrication and cladding experience and expertise. It is because of this, we can offer a unique package to our clients which gives cost, programme and design benefits.

USSR LTD

Underground System & Sewer Repair Ltd.

USA Ltd.

Underground Surveying & Analysis Ltd.

"Our mission is to provide an innovative nationwide service to our customers. Our business exists to provide a no- dig service to help improve the underground pipe network by surveying and repairing using non-invasive technologies"

Castlebar – (094) 9038795 **www.usa-ltd.ie** Blessington – (045) 394010

Pipeline Renovation

- Manhole to manhole lining
- Lateral lining
- Blind-shot lining
- Localised repairs
- Lateral sealing
- Robotic cutting using Wamax / Picote / Springbok
- Joint Sealing using Hydrotite seals
- Pipe re-rounding

CCTV Surveys

- Mainline Surveys
- Lateral inspection
- Network mapping & connectivity surveys
- Pollution surveys

Manhole & Other Asset Surveys

- Drainage Area surveys and network mapping
- Pumping station surveys
- GPS / Topographical surveys
- Flow & load surveys
- SWO/CSO surveys
- Impermeable area survey

Sewer Cleaning

- Blockage removal
- Lateral cleaning
- Planned maintenance cleaning

Pipeline & Manhole Integrity Testing

- Pipeline testing for IPC compliance
- Drain Integrity Study

Report Production

- Infonet
- Wincan-web
- Taking in charge report
- Rehabilitation schedules and costings

Manhole Renovation

- Manhole / ironworks replacement
- Manhole structural relining
- Manhole chemical protection
- Manhole leak sealing using chemical injection
- Manhole Re-benching

Other Services

- GPR Surveys
- Watermains Cleaning

ACEI AWARDS DINNER 2023

ACEI President 2022-2023 Brian Kavanagh hosted the annual Awards Dinner on 31 March 2023 in the Shelbourne Hotel

Brian Kavanagh, ACEI and Angela Sherlock Kavanagh with Sarah Ingle, ACEI Secretary General and Willo Roe

Brian Kavanagh, ACEI; Sarah Ingle, ACEI Secretary General and Kevin Rudden, ACEI President 2015

Sue Arundale, Director General, EFCA; Sarah Ingle, ACEI Secretary General; Tara Cosgrove, Beale & Company and Shirley Coulter, CEO, SCSI

Brian Kavanagh, ACEI; Sarah Ingle, ACEI Secretary General with Tony Horan, awards adjudicator, ACEI President 2017 and Florry Horan

Anne-Marie Conibear, ACEI 1st Vice President and Joe Burns, Arup

Brian Kavanagh, ACEI; Keith Elliot, Chair, Institute of Civil Engineering (ICE) and Alan Hore, Chair, CitA

David Brennan, BDP; Claire Ault, Griffiths & Armour and Graeme Tinney, Griffiths & Armour, ACEI sponsors

James Kavanagh, ACEI; Michael Curran, Chair, CIBSE and Simon Dunne, Chair, IStructE (Ireland)

Pat Lucey, Chairman, Build Digital Project; Marc Jones, Roughan & O'Donovan; Tim Murnane, ACEI 2nd Vice President and Tom Parlon, Director General, CIF

David McHugh, ACEI President 2021; Ciarán Kennedy, ACEI President 2018 and Donnachadh O'Brien, Donnachadh O'Brien & Associates Consulting Engineers

David McHugh, RPS; Jim Casey, OPW and Kieran Walsh, OPW

Joe Burns, Arup; Heather Edge and Derrick Edge, Future Leader adjudicator and ACEI President 2005

Shirley Coulter, CEO, SCSI; Charlotte Sheridan, President, RIAI and Gemma McCarthy, Mott MacDonald

We Specialise in

Low Voltage Switchgear

PLC & SCADA

Motor Control

ATEX Equipment + Installation

Turn Key Projects

Real-Time Power Factor Correction

Supplier of High Quality Automated Control Equipment In Business For Over 30 Years

ESTA
Engineering Services to Automation

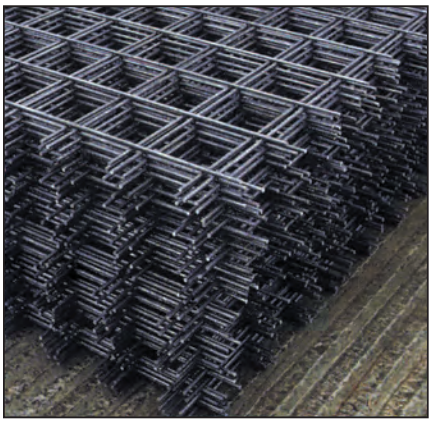
Woodstock Industrial
Estate, Athy, Co. Kildare.
Phone: 059 863 2088
Fax 059 863 2804
www.estams.com

BRC McMahon Reinforcements

Manufacturers of reinforcing mesh fabric

PRODUCT RANGE

IRISH MANUFACTURER



Reinforcement
- Fabric Mesh
- Standards
- Eco
- Flying Ends
- Specials, made to measure
- Concrete Pipe Reinforcing Wire
- Contistretch Coil Reinforcing
- Cut to Length Bar

Reinforcement Accessories
Hychairs
Tying Wire
Brickforce

BRC McMahon Reinforcements Ltd.
Rosanna Road, Tipperary, Ireland.
Phone: +353 (0) 62 51679 Fax: +353 (0) 62 51940
Email: sales@brcmcmahon.com www.brcmcmahon.com

IRISH MANUFACTURER

CARES

SALES & SUPPORT TEAM

Southern Ireland	John O'Dea	+353 (0)87 2578211
Midlands/West	Sean McDermott	+353 (0)87 2564663
East/North East	Pat Bermingham	+353 (0)87 2507955
East/South East	Enda Fitzpatrick	+353 (0)86 1414741

ACEI AND EFCA 2023 FUTURE LEADER AWARD

WREN URBAN NEST 'LUXURY WITHOUT THE GUILT'

Author – Patrick Kavanagh, Engineering Director, BDP

Wren Urban Nest hotel

Wren Urban Nest which opened in September 2021 is a hotel that makes the most of its tight urban site offering 137 compact bedrooms in the heart of Dublin. BDP was appointed as multi-discipline design consultants for the project providing architectural, civil and structural engineering, building services and sustainability consultancy advice from planning through to completion. The planning grant was received in 2017 with the project starting on site in 2019 and receiving practical completion in December 2020. Due to Covid-19 restrictions in place at that time the hotel did remain closed for nine months before finally opening in September 2021.

When BDP was first appointed at feasibility stage, the brief was simple: 'maximise the number of bedrooms on the site'. For us as a team the thought leadership with Wren evolved by imagining how guests of the future would engage with a host city and how responsible travellers want to experience cities. The hotel of the future with no brand standard had to respond with a different message to outwit its more powerful future competition. We used this to define the hotel brief and consistently returned to these basic principles as the design evolved. The design of the hotel focuses on compact luxury and energy efficiency, with small format bedrooms decorated and accessorised with the best contemporary Irish craft. It is a showcase for Irish design from brand to bed, confidently supported with smart, sustainable technologies. The ethos of the hotel, the materiality used throughout and the collaboration between the design team was aligned and seamlessly integrated to reflect the holistic concept and vision. This is now borne out by the type of guest attracted to the hotel, and the feedback and positive reviews achieved due to this new original product offering and guest experience.

Brian Kavanagh, presents the ACEI 2023 Future Leader Award to Patrick Kavanagh, Engineering Director, BDP


The European Federation of Engineering Consultancy Associations
has awarded
Patrick Kavanagh
Second prize in the EFCA 2023 Future Leaders Competition
for his outstanding contribution to the Wren Urban Nest Hotel project
Rome, 31st of May 2023
efca

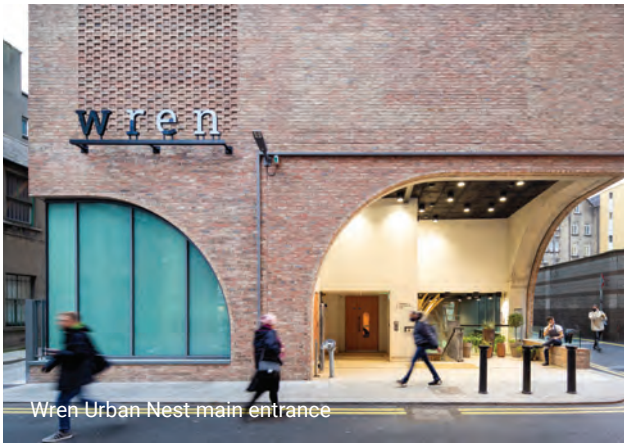
Specific challenges included an extremely tight site within an historic area in Dublin. It meant the design of the building had to utilise every square inch of the site and equally the mechanical and electrical services had to be highly coordinated with the structure and interior design to ensure no riser or plant space was wasted floor area. A number of unforeseen conditions from the fire officer in Dublin also proved challenging as we had to adopt a firefighting core with mechanical smoke extract into the design after work had already started on site. Another challenging aspect of the project was the introduction of a full commercial kitchen at basement level when the hotel operator was brought on board. This was introduced when the project was already on site and after the structural frame was complete. The change in brief had the potential to upset the environmental agenda as the operator was familiar with using gas burning appliances in the kitchen and BDP had just spent the last two years designing fossil fuels out of the project.

A number of innovative design strategies were adopted to minimise operational energy use without compromising on guest experience and expectations. As with all sustainable designs it is important to first focus on the passive design of the building to reduce the energy demand and then look at how the active systems can further improve the operation.

There were several iterations of the form and material of the façade design. Environmental modelling software was utilised to complete sensitivity studies on a number of options to see how each would be impacted by solar gain, daylight, and glare. Upon reviewing the operational building loads it was apparent that hot water, heating energy for fresh air and overnight heating contributed to over 60% of the total HVAC energy use. Therefore, an optimised façade that allowed useful solar gain but also reduced peak summer cooling loads was necessary to maximise efficiency for this building. To reduce peak loads in summer and keep plant sizes to a minimum (as well as plant space), the slightly faceted façade was giving us the ideal conditions as only half of the west elevation is fully exposed to the afternoon sun at any given time which aligned with peak cooling conditions.

To support the façade design BDP implemented clever use of exposed thermal mass to absorb unwanted solar gain in the summer and release it as free heating at night.

Whilst counter intuitive a high glazing ratio on the west façade for this building has passive heating benefits because the glazing was positioned in the correct orientation allowing useful solar gain from the sun to be shared with the rest of the hotel operation. The building itself has a glazing ratio of less than 40% with no glazing



Wren Urban Nest main entrance


Wren Urban Nest restaurant and bar

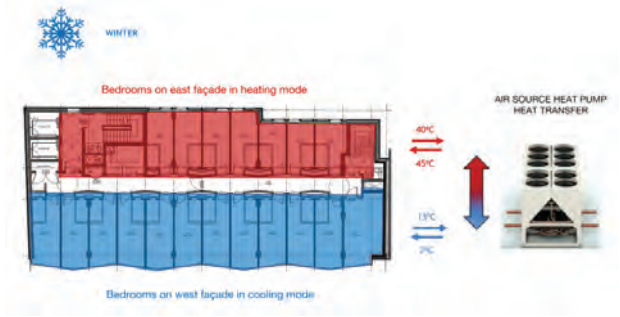


Fig. 1 - HVAC operation in winter

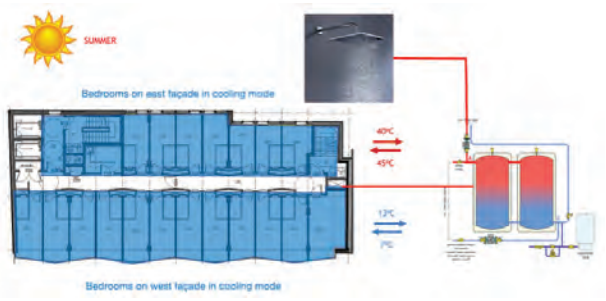


Fig. 2 - HVAC operation in summer

on the north or south and uses punch windows on the east. On the west façade the high-performance curtain walling combined with a low air permeability (2.3m^3/m^2/hr @50Pa) kept heat losses to a reasonable level whilst the exposed west façade captured the solar gain when beneficial to be transferred back to the central plant to be utilised. In simple terms, on cold winter days, the air source heat pump transfers heat from the west façade that is in the sun to the east façade in the shade (fig 1). In summer when there is no heating load, the energy is transferred to the hot water supply for showers and wash hand basins (fig 2).

This strategy would not be possible utilising the traditional gas-fired boiler and chiller approach or by separating the air conditioning plant from the domestic hot water using traditional refrigerant-based systems. Wren's hot water, heating and cooling system design is based on a combination of highly efficient air source and water to water heat pumps in series with no fossil fuels being consumed, avoiding the production of large amounts of local pollution within an urban environment.

Wren's ventilation system also further enhances the efficiency of this strategy by capturing over 81% of rejected heat using a thermal wheel. The incoming fresh air is heated with the use of active heating for most of the year. Even latent heat from the extract in the showers is captured and reused so solar energy entering the west façade that is used to generate hot water is utilised again in the ventilation system after a guest makes use of it. Another benefit of the integration of this heat recovery ventilation system is that it ensures that the hotel can provide fresh air 24/7 while maximising energy efficiency and maintaining optimal air quality.

Even the hotel's kitchen has no reliance on gas for cooking, ensuring the zero-carbon commitment is fully followed through.

The result is a hotel that has a very low carbon footprint, offering visitors to Ireland's capital city a more sustainable alternative. The building has no gas connection and burns no fossil fuels. It creates no local pollution and actually improves the air quality in the city by filtering the air as it enters and exits the building after being used. The building is one of just a handful of BER A-rated hotels in the country and has the highest renewable energy ratio at 40% which is four times the current NZEB requirement (according to SEAI). Since opening, the BMS-monitored water use is trending at 57% lower than hotel benchmarks and the total delivered energy use (including plug-in loads) is only 4,500 kWh/bedroom/year which is very low for a hotel building. To put this figure into context; CIBSE Guide F would suggest typical practice is 12,150 kWh/room/year and good practice is 7,650 kWh/bedroom/year (based on a 4-star hotel bedroom equivalent).

Since opening, the hotel has been widely recognised as setting a new precedent for hotel design and has won eight sustainability awards thus far, along with being shortlisted for several others. The hotel and its sustainability and engineering design has been published in multiple industry magazines and newspapers and has also been central to a number of conference and industry-event presentations and tours.

Awards won to date include:

- Construction Excellence Award 2022 – Leisure or Tourism over €10m Category
- Building & Architect of the Year Award 2022 – Sustainability Award for a Single Building or Development
- Mixology Awards 2022 – Positive Impact Award
- Sir George Grenfell Baines Awards 2021 – Overall Winner
- GGB Sustainability Award 2021
- SEAI Awards 2022 – Energy in Buildings' Winner
- Towards Net Zero Ireland 2022 – Highly Commended in Commercial Building Category
- Business Energy Achievement Awards 2023 - Best Energy Achievement in Tourism and Entertainment

DATA centres Ireland

20-21 NOV
2024
RDS, Dublin

For more information visit:
www.datacentres-ireland.com

ACEI AND EFCA 2023 FUTURE LEADER AWARD

Michael Minehane BEng (Hons) MEng DipHE CEng MIEI – Senior Associate and Chartered Engineer at RPS Consulting Engineers

2023 ACEI & EFCA Future Leader project submission – repair and rehabilitation of Daly's (Shakey) Bridge, Cork

The ACEI Future Leader Award recognises a consulting engineer as a potential leader with excellent communication skills, business acumen, technical capabilities, and strong ethical values. Congratulations to the 2023 runner-up: Michael Minehane, Senior Associate and Chartered Engineer at RPS Consulting Engineers.

Michael Minehane is a Senior Associate and Chartered Engineer at RPS where he leads a wide range of bridge and transportation projects as Project Manager and Technical Lead. Michael has worked on major national and international infrastructure schemes, significant heritage bridges and rehabilitation schemes. He has authored numerous technical papers and has won several awards in the field of civil and structural engineering. He is committed to knowledge sharing and participates on a voluntary basis on many industry bodies and committees. As an entrant in the 2023 European Federation of Engineering Consultancy Associations (EFCA) Future Leader Award, he also received an honorary mention from the jury in recognition of exceptional merit for engineering excellence among young professionals.

REPAIR AND REHABILITATION OF DALY'S (SHAKEY) BRIDGE, CORK

The rehabilitation of Daly's (Shakey) bridge project has seen one of Cork's most iconic structures faithfully restored for future generations to enjoy. The bridge provides a pedestrian route over the northern channel of the River Lee in the Mardyke area of Cork City. It consists of a single, 51m, cable-supported span with parallel steel latticed trusses supporting timber decking. The suspension bridge is a well-known local landmark and its colloquial name 'Shakey bridge' derives from the lively movement of the deck under pedestrian loading. The bridge opened in 1927 to replace an earlier ferry crossing at the same location. It remains the only

suspension bridge in Cork City and is the only surviving bridge of its type in Ireland. It is included on the Record of Protected Structures and is a significant contributor to the architectural heritage of the city.

The works include:

- Phased dismantling of the latticed deck for removal off-site for grit-blasting, repair and repainting.
- Encapsulation to the towers for grit-blasting, repair and repainting.
- Replacement suspension cables.
- Approach upgrades including parapets, bike ramp, landscaping and surfacing.
- Feature lighting.

ROLE

I chose this project for my future leader submission as it displayed all my skills as an engineer. I led the project team, encompassing the following key responsibilities:

- Leading the successful tender submission.
- Project manager, lead structural engineer and client contact.
- Technical approvals and consents and detailed design.
- Leading a team of engineers, ecologists, environmental scientists, planners and lighting specialists.
- Chairing client meetings, design meetings, site meetings and contractor workshops.
- Stakeholder consultations.
- Employer's representative and contract administration.
- Interim inspections at key stages.
- Final account.

DESIGN

The project was unique and complex. A special inspection in 2017 highlighted key structural issues including advanced corrosion throughout the latticework, inadequate hanger to transverse deck beam connections and wire breakages to the existing suspension cables caused by fraying/fatigue damage. The structure was assigned a condition rating of 3, i.e. significant damage with repair needed within the next year. Given the need for urgent intervention, I led the project team to deliver the design, contract documents and appointment of a contractor within 12 months of the inspection. It was a significant feat considering the complexities, constraints, and nature of the works. Indeed, the timely execution of the project ultimately prevented the introduction of load restrictions and eventual closure of the bridge.

The project was designed and constructed within significant constraints. These included working over, and adjacent to an environmentally sensitive tidal watercourse, working in a confined urban site with limited

Michael Minehane

access for plant, advanced corrosion and damage to the existing structure, presence of invasive species and intricate phasing of the works. The conservation design approach implemented included:

- Researching the full history and significance of the bridge.
- Successfully collating archive information on David Rowell & Co suspension bridges, including brochures, specifications and material lists. I compiled an inventory and detailed study of Rowell's bridges erected across the world.
- Knowledge-sharing relationship established with Aberdeenshire Council, including a study visit to Polhollick Bridge.
- Minimising interventions, retaining as much of the original material as possible. Over 30 bespoke and localised steelwork repair details were designed to rigorously apply the principle of minimum intervention.
- Where repair or replacement of damaged elements was required, like-for-like replacement was undertaken in material, detailing and work methods.


Completed lighting scheme


View at deck level looking west

- Retaining original features at the bridge, particularly where alterations to the character of the bridge was made since 1927.

INNOVATION

Innovative technology and techniques were embedded throughout. 3-D terrestrial laser scanning was employed to accurately acquire detailed survey information of the bridge geometry. A 3-D Revit model was generated from the point cloud and populated with inspection data to form an 'as-is' Bridge Information Model (BrIM) which creates an intelligent baseline model representative of the condition of the bridge. This model was output directly to form a 3-D structural analysis model to undertake the structural assessment, subsequent repair works design and dynamic modelling simulations. Further innovative uses of modelling techniques included:

- 3-D modelling of the intricate reinforcement and cable anchorage connection to the existing buried foundations.
- Graphically displaying the dismantling and re-erection sequences for the deck in 3-D (fulfilling 4-D sequencing in BIM terms).
- Geometry definition for the replacement cables and measures to achieve the final deck profile.

This approach realised efficiencies during the design phase, improved communication of design intent and avoided clashes and related issues from arising on site.

Through the consultation process, the public expressed a strong desire for the bridge's signature shake to be retained, which was promoted as a key project aim. Analytical structural models and physical accelerometer measurements were implemented to record and monitor the natural frequency and vibration response of the structure prior to, and following, repair works to ensure the signature shake was retained. This use of technology gave our project team a full understanding of the dynamic behaviour of the existing bridge and provided quantitative assurance that following re-erection, the signature shake had been retained and returned to the people of Cork.

SUSTAINABILITY

The completed works significantly improve the bridge as a public walking and cycling amenity, promoting these sustainable travel modes within Cork City. The refurbishment has extended considerably the service life of the bridge, avoiding the need for demolition or replacement. Circular economy principles of reuse and repair were embedded as part of the refurbishment approach. The conservation principle of minimal intervention was rigorously applied to retain as much of the original material as possible. This minimised the carbon footprint of the works compared to a new build.

Ecological surveys identified aquatic fish life and the presence of bats commuting and foraging near the bridge. Consequently, the feature lighting was considerately designed so as not to disturb the fish life or negatively impact on the commuting and foraging habits of bats. An inclined low-level lighting scheme was adopted to directly illuminate the walkway without light spill onto the river or riparian zones. Up-lighting was avoided completely, and low lux levels were adopted to minimise bat disturbance. Central management system technology allowed remote alteration to light colour, dimming and intensity.

IMPACT

Since reopening, the project has been warmly received by the people of Cork, who have long held an emotive connection to the bridge. The project is a true testament of the power of engineering to lift the human spirit. The project was awarded the Structural (Small/Medium) Project of the Year at the ACEI Engineering Excellence Awards 2021 and a commendation in the Structural Heritage category at the IStructE Structural Awards 2021. It is regarded as an exemplar repair and conservation project.

BIM REQUIREMENTS IN THE CWMF MANDATORY FROM JANUARY 2024

ACEI members should be aware that as of January 2024 consultants engaged to design and oversee the construction of public works contracts with a value in excess of €100m will have Building Information Modelling (BIM) requirements included in their scope of services. This requirement will cascade down to projects below €1 million over a four-year period

Following the announcement by Ministers Donohoe and Smyth of a package of contract reforms to build confidence in NDP delivery, the role of BIM and sustainability in these reforms, and a timeline for public sector BIM adoption are important changes in how public sector projects are procured, designed, and delivered. Digitalisation and sustainability trends are going to fundamentally transform our industry and your business over the coming years. Get involved in the ACEI's work and you will be better prepared and informed of these changes, giving you a competitive edge. What follows is an update from the OGP on the BIM mandate.

BUILDING INFORMATION MODELLING (BIM)

The Office of Government Procurement (OGP) has added BIM requirements to the Capital Works Management Framework. These requirements include the adoption of internationally standardised information management processes, data exchange formats and classification. The requirements will be applied by contracting authorities based on the specific needs of each client and project and based on the timelines set out by OGP. ACEI is supportive of these developments and expects that members will see greater consistency of BIM requirements across public sector projects over the coming years.

The content below is from the OGP CWMF website.

SUSTAINABILITY

We must ensure that the infrastructure built to serve the community and promote a prosperous economy has the smallest possible impact on the environment. We must also build more efficiently to conserve precious resources to meet our challenging climate action plan targets, reduce waste and increase productivity.

Measuring the carbon greenhouse gas generated in the operation of built assets has been a focus of building designers, legislators and policy makers for several decades with the result that our new buildings are constructed to near zero emissions levels for their heating, cooling and lighting needs.

The emissions produced in the construction stage is the next area that must be tackled.

Measuring and reporting on embodied carbon is vital if we are to understand what steps can be taken in the design and specification of buildings and infrastructure to reduce our carbon footprint, whether that is in specifying materials with a lower carbon footprint or incorporating greater amounts of recycled materials, or reusing resources that are currently sent to landfill.

The OGP is adopting the International Cost Management Standard (ICMS) to enable consistent reporting of costs, life cycle costs and life cycle analysis, including embodied carbon across the National Development Plan. The first updated cost reporting templates, incorporating ICMS published in August 2023, will be updated early in 2024 to incorporate reporting of life cycle costing and further again in 2025 to enable reporting on life cycle analysis, including embodied carbon.

The data handling capacity of Building Information Modelling is vital if we are to accurately measure the embodied carbon of construction projects. It can also drive significant efficiencies from the point of view of time and cost and enables a better-quality outcome.

TIMELINE

The BIM adoption strategy utilises the buying power of the public sector, which represents at least 25% of construction activity, to incorporate digital delivery

Public Sector BIM Adoption Timeline (Month 0 is January 2024)

Project Category Value	Task order and Milestones	Month
> 100m	Milestone 1 – Design Team only	Month 0
> 100m	Milestone 2 – Contractor and Supply Chain	Month 12
> 20m	Milestone 3 – Design Team only	Month 12
> 20m	Milestone 4 – Contractor and Supply Chain	Month 18
> 10m	Milestone 5 – Design Team only	Month 18
> 10m	Milestone 6 – Contractor and Supply Chain	Month 24
> 5m	Milestone – 7 Design Team only	Month 30
> 5m	Milestone 8 – Contractor and Supply Chain	Month 36
> 1m	Milestone 9 – Design Team only	Month 36
> 1m	Milestone 10 – Contractor and Supply Chain	Month 42
< 1m	Milestone 11 – Design Team only	Month 42
< 1m	Milestone 12 – Contractor and Supply Chain	Month 48

requirements as part of the overall Government strategy to digitalise the construction sector by 2030.

WORTH NOTING

The International Cost Management Standard provides a single methodology for reporting, grouping, and classifying construction project costs. The most recent edition provides a common reporting framework allowing the interrelationship between construction cost and carbon emissions to be explored.

ICMS will enable decisions to be taken based on the total cost of ownership including the environmental impacts of decisions with respect to material selection, foundation design and energy use and production.

Combined with the data handling capacity of BIM and the availability of greater levels of information on materials and building components, there will be capacity for contracting authorities and their project teams to review a project's environmental standing at all stages of its delivery lifecycle. ICMS will formalise reporting at the key decision points.

BIM is a process that governs the creation and management of all the information on a project – before, during and after construction.

Capital Works Management Framework

3-D model of modern office building

SELECTING A CONSULTING ENGINEER

Charlestown Centre Main Entrance A

Selecting a consultant is one of the most important decisions an owner or client makes. The success of any project often depends upon obtaining the most able, experienced and reputable expertise available.

The best project results are achieved when there is a true professional relationship of absolute trust between the client and the consultant. This is because the consultant must make sound, objective decisions and act in the best interest of their client at all times. The method of selection should therefore seek to develop mutual confidence between the two parties.

There are two key points to consider when deciding what method of selection to employ:

Since precise professional performance specifications cannot be written, it is difficult, if not impossible, to equitably apply the principles of competitive bidding. That is to say, if the competition is based on price, different consultants may anticipate providing very different levels of service. Although it is possible to write a performance specification for the physical aspects of the project itself, it is very difficult to write suitable specifications for how a consultant should perform. This difficulty arises because factors such as the extent of investigations, the consideration of alternatives or the quality of design and levels of innovation cannot be quantified. Each factor not only depends on the mechanics and procedures employed in executing professional work, but also upon the expertise, experience, judgement, innovation and imagination of the consultant and the supporting staff working on the project.

Successful consulting services depend on sufficient time spent by properly qualified people. Thus the method of selection should not force fees down to the point where consultants cannot afford to assign properly experienced staff for sufficient periods of time.

Inadequate fees lead to the reduction of the scope and quality of the service by spending less time on the project or assigning lower paid and usually less qualified personnel to the project. Thus lower consulting fees give no assurance of lower total project costs. Inadequate engineering often leads to higher construction costs, higher material costs and greater life cycle costs. All of which are likely to cost far more than the potential saving made on design fees.

THE IMPORTANCE OF QUALITY-BASED SELECTION (QBS) FOR THE PROCUREMENT OF CONSULTING SERVICES

Selection based on quality

The method of selection that best meets all factors is quality-based selection. That is, the client chooses the consultant on the basis of professional competence, managerial ability, availability of resources, professional independence, fairness of fee structure, professional integrity and quality assurance systems.

The recommended procedure for selection of consulting firms is to:

- identify potential firms with relevant experience
- select the most appropriate firm
- negotiate the fee on a mutually agreed scope of services with the selected firm
- execute appropriate agreement terms.

ADVANTAGES OF QUALITY - BASED SELECTION (QBS)

QBS Delivers the best value for money

Selecting a consultant based on quality ultimately provides the best value for the client. Experience has demonstrated that the competency of the consultant is the key to an efficient, cost-effective project. Top-quality consultants bring best practices to the project. This translates into the best possible solutions for the client and the end user; which means the appropriate technology, innovative solutions and the lowest life cycle cost. The QBS process encourages consultants to continually improve their skills and strive for creativity and innovation because their selection depends on it. The client is the beneficiary of these best consultant practices at competitive fees. QBS leads to:

Fairer Fees

Fees will be fairer to both the client and the consultant because they are negotiated after the parameters of the assignment are fully established. Consultants will not be under pressure to minimise their efforts by devoting less time to project details, by considering fewer alternatives, or reducing the amount of checking. This means the project will be safer, more efficient, cheaper to build and more economical to operate over its life cycle.

It has been suggested that the client is at a disadvantage when negotiating fees after the consultant is selected. This is not the case, since there is a wide spectrum of documentation on fee guidelines available to the client. In addition, the client can seek appropriate advice from other consultants and professional organisations.

SELECTION CRITERIA

The most important standards by which to judge a consultant's suitability to carry out a particular project are:

- professional competence
- managerial ability
- availability of resources
- impartiality
- fairness of fee structure
- professional integrity
- quality assurance system

The client should seek information on all these matters by:

- obtaining comprehensive written pre-qualification information from the consultant in a form appropriate for the assignment;
- interviewing senior personnel identified for the assignment;
- if necessary, visiting the premises of the consultants and examining systems and methods of work as well as hardware and software capabilities;
- where applicable, speaking to previous clients.


Three Park Place

Professional Competence

The competent professional consultant will be able to offer the client a team that will have the education, training, practical experience and judgement to carry out the project.

The client can evaluate the professional competence of the team by examining;

- the detailed resumes of key staff members and their relevant experience on similar assignments;
- the list of similar projects carried out by the firm and present staff;
- the approach to and methodology for the proposed assignment.

In addition, the client should validate the performance of the consultant on similar previous assignments with owners and examine the performance history of the consultant in similar foreign countries.

Managerial Ability

To successfully achieve project objectives, a consultant must have managerial skills to match the size and type of the project. The consultant will need to marshal skilled manpower and adequate resources, maintain schedules and ensure that the work is planned in the most efficient manner. The consultant will need to be a ble to deal competently with contractors, suppliers, loan agencies, government agencies and the public during the course of the project. At the same time, the client must be informed of the development of the project to be able to make decisions quickly and accurately.

The client can assess the managerial ability of the consultant team by examining;

- past projects performance record;
- the documentation and project control procedures which guide the performance of the consultant's services;
- the success record of the proposed project manager on previous projects;
- the project management and quality control approach proposed for the new assignment;
- the progress reporting and client communication techniques proposed for the assignment;
- the success rate on previous projects of the consultant in transferring technology.

Availability of Resources

When selecting a consultant it is important to establish whether the firm has sufficient financial and manpower resources to carry out the project to the necessary detail and standards commensurate with the time and fee schedule. This will indicate the extent to which the firm's current resources are committed. The client should verify that the consultant has sufficient staff available at the relevant experience levels and that there are sufficient financial resources to carry out the work.

The client can validate the adequacy of the consultant's resources by reviewing:

- the number of qualified professional and managerial personnel committed to the project team;
- the deployment of the project staff and how the team will be organised with lines of responsibility;
- the staff commitments to other work for the duration of the proposed project;
- the new assignments to projects of a similar size conducted by the consultant;
- the credit worthiness of the firm;
- the ready access to supporting resources;
- the proximity of the firm's offices to the proposed work.

Impartiality

When the client employs a consultant who is a member of one of FIDIC's member associations, such as ACEI, the client has the assurance that the consultant subscribes to FIDIC's Code of Ethics, is competent, and provides impartial professional advice.

The consultant is remunerated solely by the fees paid by the clients. The consultant has no commercial ties that could prejudice their impartial judgement.

"ONE FACTOR, QUALIFICATIONS, FAR OUTWEIGHS ALL OTHER CONSIDERATIONS IN RETAINING CONSULTANTS, ESPECIALLY PRICE."

THE INSTITUTE FOR MUNICIPAL ENGINEERING,
A DIVISION OF THE AMERICAN PUBLIC WORKS ASSOCIATION

> “THE GOALS OF DESIGNER SELECTION SHOULD NOT INCLUDE MINIMISING FEES. MAKING FEES PART OF THE SELECTION PROCESS WILL NOT SAVE TAXPAYERS MONEY. RATHER, THE PRACTICE IS LIKELY TO INCREASE THE ULTIMATE COSTS OF THE PUBLIC BUILDING SYSTEM DUE TO REDUCTION IN DESIGN QUALITY….”
>
> WARD COMMISSION

If the consultant is a member of a consortium, they may be remunerated from the proceeds of the consortium. In this case, the consultant must consider the consortium partners to be clients.

The consultant is therefore able to approach all assignments objectively and by exercising sound professional judgement and prudent economic principles, can provide solutions to serve the clients best interests.

The client may wish the consultant to furnish an affidavit confirming that no potential conflict of interest in the performance of the proposed assignment exists.

Fairness of fee structure

Consultants need to be adequately compensated to ensure that they are able to provide high-quality services with proper attention to detail, alternative considerations, innovation and cost effective solutions.

Consultants must maintain highly competent staff through continuous education and training initiatives and give constant attention to research and development to maintain state-of-the-art expertise and up-to-date equipment and technology.

The fee structure should be adequate to achieve the objectives of the project and meet the expectations of the client. At the same time, the fee must generate a reasonable profit for the consultant so they can remain in business ready to serve the client with well trained, experienced staff and the latest in innovative approaches.

Museum of Literature Ireland

"WE ARE CONVINCED THAT TENS OF MILLIONS OF DOLLARS OF PUBLIC MONEY ARE WASTED EVERY YEAR IN CARRYING OUT A SET OF PROCEDURES THAT FLY IN THE FACE OF COMMON-SENSE CONSTRUCTION PRACTICES."

MASSACHUSETTS TAXPAYERS FOUNDATION

Professional Integrity

Mutual trust and integrity represent the oil in the machinery of the relationship between client and consultant. Without it the machine becomes inefficient, hot through friction and finally can come to a standstill. If absolute trust exists between the client and the consultant and both parties have integrity, then the project will run more smoothly, the results will be better and both parties will be happier. These very factors of mutual trust and integrity are the reasons why consultants are commissioned by the same client again and again.

SELECTION PROCEDURE

In the scarce financial resources environment of today, the quest must be for the best possible solutions for the client and the end user. This requires the use of appropriate technology, innovative solutions, the lowest life cycle cost, all executed with prudent resource utilisation, environmental sensitivity and sustainability. The end user deserves the best the consulting profession can deliver and that quality comes from top qualified firms at a competitive price. A selection procedure that allows the consultant to use creativity, innovativeness, experience, seasoned judgement and best practices in the best interest of the client in return for fair and adequate compensation, gives the best results.

Competition between consultants that results in the best quality of services, is of benefit to the client and the public and in keeping with the philosophy of private enterprise. This competition, however, should be based on competence and qualifications. In an environment where investment money and loan funds are in short supply, it is in the interest of all concerned to focus on quality and value.

TERMS OF REFERENCE

Draft the terms of reference for the selection which should include an assessment of the physical magnitude and resource requirements of the project. The required services can be identified under the following headings:

- areas of expertise and categories of service
- a statement of work defining the project
- a time schedule
- regional factors such as geographic location, language, logistics, allowances, duration of commission
- type of contract proposed
- a project budget

PRE-QUALIFICATION

Make a list of consulting firms which appear to be qualified for the project. This is often referred to as the pre-qualification list.

"THE CONGRESS HEREBY DECLARES IT TO BE THE POLICY OF THE FEDERAL GOVERNMENT TO PUBLICLY ANNOUNCE THAT THE CONTRACTS FOR THESE SERVICES (DESIGN SERVICES) WOULD BE NEGOTIATED ON THE BASIS OF DEMONSTRATED COMPETENCE AND QUALIFICATIONS... AT A FAIR AND REASONABLE PRICE"

BROOK'S LAW

Names of possible consultants can be obtained from a number of sources including:

- ACEI Directory of Members
- persons or organisations that have employed consultants for similar projects by advertisement in the National Press for an "Expression of Interest" providing information on the firm relevant to the project.

SHORTLIST

Draw up a shortlist of not more than three to five consulting firms which appear to be best qualified for the project, bearing in mind the following factors:

- relevant experience
- availability
- capacity to complete the work
- access to support resources
- past performance on client contracts
- location of the firm's office in relation to the work
- political, social and environment or sensitivity
- security level required

REQUEST FOR PROPOSALS

The client may at this stage invite the most suitable consultant to negotiate an agreement on a mutually agreed upon project scope, fee and contract terms. More formally it can write a letter to each of the firms on the shortlist and invite proposals.

A request for proposals should contain at least the following:

- the statement of work, terms of reference and supporting documentation
- submission or closing date
- basis of evaluation
- a statement of information to be included

"WHILE IT IS APPROPRIATE TO AVOID DESIGN FIRMS WITH EXCESSIVE OVERHEAD RATES, A COMPETITION BASED ON COST INEVITABLY LEADS DESIGN FIRMS TO BASE THEIR BIDS ON THE MINIMUM POSSIBLE NUMBER OF HOURS, WITH A SUBSTANTIAL RISK THAT INADEQUATE DESIGN WILL BOOST OVERALL CONSTRUCTION COSTS."

MASSACHUSETTS TAXPAYERS FOUNDATION

Linn Dara Child and Adolescent Inpatient Unit

"THE COMMON LAW OF BUSINESS PROHIBITS PAYING A LITTLE AND GETTING A LOT"

JOHN RUSKIN FROM 1860

in the proposal
- expected selection date

Where appropriate, the request for proposal should also include the following elements which may have influence on the cost of consulting services:
- methodology
- alternatives to be considered; innovation invited
- transfer of knowledge/technology, local participation and training
- detailed target cost estimates for the project
- compliance with desired time schedule

The information required will include:
- past experience with projects of a similar nature
- details of organisation, project control, financial control
- size and responsibilities of staff
- type of organisation and managerial method proposed for executing the work
- quality assurance organisation
- knowledge of local condition
- local resources
- project methodology
- availability of resources
- approach and commitment to technology transfer, if appropriate

To assist the consultant in preparing a proper response to the proposal, the client should encourage the consultant to evaluate the scope of work by visiting the site and by meeting with the client.

ASSESSMENT OF PROPOSALS

Once the proposals are received, the client should systematically evaluate and rank each proposal against the basis for selection outlined in the request for proposal. This process helps to maintain the integrity of the selection process and can involve:
- formation of a selection committee
- a weighting or score for each criteria
- independent evaluation of firms by each member of the selection committee
- individual score sheets being collated and
- a documented record of the selection process being retained

Clients may be assisted in this evaluation process by an independent consultant.

If the project size and complexity warrants it, the client can include in the evaluation interviews of key consultant team members, visits to consultant's premises, discussions with consultant's past clients and project end users and inspections of past projects.

COST EFFECTIVENESS

The correct selection of a top-qualified consultant has major impact on the overall project costs. The decisions made by the consultant in the first five percent of their involvement with a project, have the highest leverage on the life cycle cost of the project. Compared with project life cycle costs, the consultant's fees range between one and two percent. Since life cycle cost impacts between excellent and marginal design can easily exceed the consultant's total fee, it makes no sense to select the consultant on the basis of lowest fee. In an environment where investment money and loan funds are in short supply, it is in the client's best interest to focus on quality and deliver value.

Quality-based selection does not involve consultants preparing costly priced proposals which have the effect of escalating the overall cost of consulting services.

FORMS OF AGREEMENT

When drawing up the contract for consulting engineering services both the client and the consultant should protect their interests, by using the model Conditions of Engagement documents produced by FIDIC or the Institution of Engineers of Ireland.

These standard documents are highly recommended as important instruments for reaching a fair and sound agreement between the client and the consultant.

One or two percent more spent on design costs can save up to ten or fifteen percent of the project.

ACEI ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

POSITION PAPERS 2024

SUSTAINABILITY AND CONSULTING ENGINEERS

By the ACEI Sustainability Committee

THE ENDANGERED ENVIRONMENT

Pledges made at COP26 and COP27 represent significant progress in some previously underdeveloped aspects of the fight against climate change. However, scientists say more action is needed to prevent a climate catastrophe by keeping temperature rises below 1.5°C.

Ireland's National Planning Framework identifies that by 2040 an additional one million people are expected to be living in Ireland. These people will need to be accommodated in new residential developments together with all ancillary infrastructure including schools and hospitals and will need to be provided with places of work. Without proper planning, this growth will be haphazard and uneven and could lock Ireland into carbon intensive assets for decades. Achieving the required reductions while providing for this expected increase in population further adds to the challenge before us and requires additional action across society.

Addressing these challenges is the domain of the engineer. The consulting engineering profession in particular can play an influential role in delivering these transitions, given its role in shaping policy and designing society's infrastructure.

A STRATEGIC FRAMEWORK

ACEI embraces the concept of sustainable development, which is founded on the premise of intergenerational equity and defined by the Brundtland Report as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*. The traditional approach to sustainable development considers the three pillars of environmental, social and economic concerns. However, it is important to recognise the foundational role that the environment plays, to support the other pillars. A healthy, clean, functional and productive environment is the foundation on which a stable and functional society & social order can develop. Similarly, without a stable and functional social order you cannot have a healthy economy.

Increasingly, the ability of finance to influence sustainable development has received greater attention in both the private sector (e.g. the "clean" technology commitment from COP26) and in regulations with the goal of increasing investment in sustainable developments such as the EU Taxonomy which is a classification system for sustainable activities.

In relation to the environment, over half of non-renewable resources consumed by human activity are used in construction and hence efficient material use is a key issue for managing the environmental impacts of development. This should entail the minimising of resource inputs (both materials and energy) on new buildings, repurposing of existing buildings, design for easy adaptation during a building's life, deconstruction and reuse of materials at the end of life with demolition and recycling only as a last resort. It is crucial to embed these considerations in the design and procurement of construction projects, to minimise the use of finite resources. Carbon footprint assessments need to become routine and ultimately the economic cost of environmental pollution would be included into economic assessments of projects.

ROLE OF THE CONSULTING ENGINEER

Engineers have the professional training and experience required to play an influential role in the delivery of sustainable development and their professional goals should include a commitment to this. While consulting engineers can raise the profile of sustainability with clients and support them in the procurement of assets that are sustainable while also meeting the needs of end users, it is the asset owners and developers themselves that make the most impactful decisions. Hence consulting engineers need to maintain an influential working relationship with their clients to ensure that the projects are conceived, designed and developed in a sustainable manner. This means guiding clients to go beyond the traditional focus on function, cost minimisation and programme; clients need to address sustainability, resilience and societal impacts in their design briefs.

Consulting engineers need to leverage a wide range of skills, including:

- Effective communication where listening, influencing and knowledge sharing are vital.
- Innovation where challenging conventional decision-making and delivery approaches result in improved outcomes.
- Risk management where risks are allocated to the parties best suited to managing them.

ACEI endorses the FIDIC recommendations that each consulting engineer should:

- Keep informed on global environmental issues,
- Adopt an interdisciplinary approach to solve environmental problems,
- Inform clients, the public, and government about environmental problems and how to minimise impacts,
- Promote the protection of the environment,
- Support environmental education and R&D.

ACEI also recommends that relevant environmental and social studies are undertaken on individual projects, in an objective and impartial manner. The findings should be used to inform and encourage clients on how to prevent or minimise the adverse environmental and social effects of projects in all phases. However, the challenges involved in this including the resourcing and timeline for such studies are discussed below.

Specific attention should be paid to over-exploiting natural resources, which should be assessed and brought to clients' attention, as appropriate. Ultimately, consulting engineers should take appropriate action, or even decline to be associated with a project, if the client is unwilling to support adequate efforts to address the sustainability of the project design and delivery.

MEETING THE CHALLENGE

Addressing the issues outlined above widely and with minimal delay is the fundamental challenge. For many engineers, the default position is often to continue doing what has successfully been done before, based on lessons learnt (both positive and negative). Past design solutions have an element of certainty regarding their effectiveness, resilience, and absence of unintended consequences that novel solutions may lack. Also, time and fee constraints limit the resources that can be brought to bear on the issue so engineers may end up incorporating limited change in an overall project's design.

The pledge to net zero commitment that many ACEI affiliated engineering practices are making is a very tangible initiative to help meet the challenge before the industry. It has the effect of focusing the mind on solutions that consulting engineers are going to have to pay for and live with. It is an initiative that will be readily monitored in-house providing participants with valuable information that can be shared for the benefit of clients as well as demonstrating individual commitment to the principles outlined here.

However, reducing the environmental footprint of engineering workplaces is addressing just a small component of the built environment. To address the wider challenge, much of which is beyond the consultant's direct control as engineers, government and government funded private research initiatives can and should provide knowledge and design support for individual initiatives and innovative solutions and these should be quickly scaled up. Commercial pressures give rise to the temptation to keep knowledge in-house and use it to enhance an individual consultant's position in the marketplace. Notwithstanding this, knowledge-sharing amongst consulting engineers across the industry is imperative, to ensure that the required changes and innovative solutions are widely implemented. The value of insights gained from practical industry experience and the ability of such insights to drive change cannot be overstated but this must take place within the wider industry at a pace very much faster than heretofore.

Considering the nature, lifetime, and potential long-term impacts of today's designs it is readily apparent that a step-change is required. The specific project level ACEI recommendations presented in the previous section are a first step in this direction. Neither consulting engineers nor their clients want projects and designs to end up being stranded assets and a liability on society. Consulting engineers need to reimagine design to embed sustainability and bring clients along on this journey.

NEW COMMUNICATIONS REQUIREMENTS: ADDING VALUE OR OVER-SPECIFICATION?

By Susan Cormican, Ethos Engineering

Corridor cabling

Communications room

Visit any electrical installation and witness kilometres of ICT cabling leading from numerous communications rooms. Walk into these rooms and encounter rows of cabinets, guzzling huge amounts of power for cooling.

The impact on cabling and equipment cost is significant, as is the reduction of usable space in the building. But is this level of infrastructure appropriate in all cases?

While Internet Protocol (IP) addresses were once exclusive to personal computers (PCs), network devices and then mobile phones, the advent of smart buildings means IP convergence is now being rolled out to most systems. The Internet of Things (IoT) looks for full convergence to bring information and controllability to hand-held devices. While this appears to be a consistent trend, is it necessary for every building?

Consideration of the scenarios below provides some insight into the variables involved:

1. **Simple Control Strategy – One off Restaurant Facility**
   Here, end-user functionality and set operating hours drove a solution for simplicity; with ventilation controlled from central panels in the kitchen and dining areas and lighting, audio-visual (AV) and cooling controlled from reception. Each system comes with its own control package and there is no requirement for convergence.
   This case reflects the traditional scope of the M&E consultant; a passive communications distribution systems and M&E control performance specification.

2. **Standard BEMS – Typical Commercial Office Fit-Out**
   A typical commercial office fit out, where IT to desks, landlord and tenant plant are pre-defined. M&E systems

are linked to a Building Energy Management System (BEMS) front end PC for monitoring, control, diagnostics and energy optimisation.

No system convergence is required in this case and the scope of the M&E consultant is limited to the passive ICT distribution and BEMS package only.

3. Standard BMS with Cloud Convergence

An office fit out where hi-tech clients typically wish to migrate systems data onto their own corporate networks from which to monitor / control several sites. Security concerns necessitate testing and approvals of control equipment and migration processes which the consultant is asked to review.

Here, the consultant is required to clarify the interface between the client ICT team and the M&E engineering scope. Often this issue can arise, post appointment, in parallel to delivering a design package.

4. Full Convergence

The example here is a new build hospital with high demand for diagnostics, maintenance planning, monitoring of systems and energy optimisation. The facility also requires assistive technology for patients (automatic control of environment through handheld devices), asset management, fire egress and access control.

These systems require full convergence onto the building Local Area Network (LAN). Is it appropriate for the consultant to input to passive systems only in this case? There is limited time for the debate on scope to take place during construction.

The advantage to the client and end users of convergence is clear; end users gain better facilities including improved comfort, AV, data connectivity and smart buildings access; while facilities teams gain integrated system monitoring for energy prediction / optimisation and system diagnostics.

However, the process to deliver convergence is not seamless, as evidenced by some of the examples above. Client briefs, particularly in the public sector, do not clearly delineate the scope required from the consultant and the pre-appointment clarification process rarely provides any further clarity. In a competitive environment, the consultant will price its traditional understanding of scope, leading to blurred lines throughout the design stage of the project.

A further impact is on space planning. For convergence of the different systems, all devices must be connected back to the building communications rooms.

Space must be allocated within the communication cabinets or racks located in the building communication rooms for the additional LAN switches that will be required. It is no longer acceptable to have the BEMS control panel situated in the plant room and the network switch located in a riser shaft located elsewhere.

The connection from end device to communications room will be by copper cable, fibre cable or WiFi, or a combination of the different connectivity systems. Appropriate space for the termination of these cables onto patch panels within the communication cabinets will also be required. If WiFi is providing the connectivity, then additional WiFi Access Points (WAP) may be needed as well. These potential solutions must be thought about early in the design process and included in the final design.

Ultimately, key to optimising clients' needs is an understanding of end user requirements at an early stage to develop the most appropriate system. In that context consultants will have to provide advice on active equipment, building LAN and convergence. This might require further investment in consultants' fees, the calculation of which needs to be consistent between consultants as well as affordable for clients.

Is it time for M&E consultants to step up and develop an affordable specialist service that our clients need, or let others fill the increasing scope gap?

Cables

RESILIENT INFRASTRUCTURE – IMPROVING LIVES

By Tony Horan, O'Connor Sutton Cronin

The threats and challenges caused by political turmoil, climate change, population growth, ever-increasing urbanization and inadequate investment are now requiring engineers to consider resilience and adaptive strategies in order to address infrastructure needs. So what is resilience? Resilience is *'the ability to withstand or recover quickly or to recoil or spring back into shape after bending, stretching or being compressed.'* A simpler way to put it, is that resilience is the ability of our infrastructure to keep functioning during and after major disruptive events or overloads. People are inimitably resilient, but not so their environmental infrastructure. When this is inadequate and inappropriate, it impacts severely on people's quality of life.

Urban societies depend heavily on the proper functioning of infrastructure systems, many of which are invisible or taken for granted. However, this reliance becomes painfully evident when infrastructure systems fail during disasters. Moreover, because of the network properties of infrastructure, damage in one location has the potential to disrupt service in extensive geographic areas. The societal disruptions caused by such failures can therefore be disproportionately high in relation to the actual physical damage. Numerous recent natural disasters have unfortunately demonstrated this phenomenon. In an Irish context we only have to look at the number and location of homes left without water and electricity in the wake of severe storms, as well as the associated transport outages wrought by the same events.

Designing resilient infrastructure systems will require collaborative efforts by engineers, working in multidisciplinary teams with other professionals, using increasingly sophisticated tools to properly advise their clients, many of whom are overwhelmed by the complexity of the infrastructure challenges they face. In addition, and as quoted at a FIDIC Conference, *'taxpayers' expectations for a more sustainable future rely on the ingenuity of engineers. The future is in our hands. It is time consulting engineers came out of the shadows and it is time public authorities were open to earlier advice and support.'* So, other than coming out of the shadows and leading the societal debate, what does the consulting engineer need to do?

The question can best be answered by first asking what it is are we trying to be resilient against and how exactly we are to design for that resilience? Well, on the 'what' side and on a global scale, the list includes floods, earthquakes, hurricanes, tsunamis, landslips, and terrorist/cyber-attacks. It also includes a list of climate change related disruptors such as increased rainfall, rising temperature, increasing wind speeds and sea level rise. In terms of the 'how' side we need to meet the following characteristics of resilient design:

- Adaptiveness: resilience will be based on an ability to respond to uncertainty and change and to 'fail safe' in critical events;
- Robustness: this is the strength within systems to allow them to continue functioning during a disruption.
- Diversity: geographic diversity means distributing assets such that a single geographic event such as a flood, cannot affect all assets.
- Redundancy: means having adequate back-up capabilities when systems fail and having alternative routes and systems in the event of elemental failure.

The degree to which we require resilience is a function of the end user requirement. The consulting engineer needs to consider what resiliency means for each part of the system's critical path. This may be milliseconds for some scenarios and weeks for others. To use a medical example, Intensive Care Units (ICU) will have a zero lag tolerance whereas hospitals may be able to function with external kitchens for some time. As a transport example think traffic route lighting versus runway lighting.

In many ways the new call to resilience is only asking consulting engineers to formalise an approach which many of them have been taking all of their professional careers. The simple act of putting dual road gullies either side of the carriageway, with separate connections to the storm carrier drain, at the base of all sag curves comes to mind as one such example of resilient design. However it is likely there is now a need to up the game to a more formal approach to resilience in design. This will include making an assessment of possible solutions with a recognised matrix to rate uncertainty, resilience and adaptability. It will also require Engineers to educate stakeholders on risk. The use of 'no regret' measures is to be recommended i.e. providing a solid foundation for change, as is maintenance of the ability to adapt with the environment. There will be a concomitant requirement to consider changing contract types so as to reward resilience in design.

Finally, the consulting engineer needs to remain engaged for the long term with ongoing monitoring, review and action in order to continue leading the societal debate.

ARE ADEQUATE RESOURCES CHECKED COMPETENTLY?

By Kevin Rudden, Garland

The checking of competence is commonplace within the construction industry and has been normal practice now for some time, as it should be. Before clients appoint duty holders such as designers, contractors, or project supervisors for design or construction, they regularly check training, experience and knowledge appropriate to the nature of the work to be undertaken to ensure competence.

The words *competent* and *adequate resources* appear in the same sentence within the Safety, Health and Welfare at Work (Construction) Regulations 2013. The Construction Regulations do not prioritise competence over resources or vice versa. There is no point in having a competent person available without sufficient resources and, similarly, no point having unlimited resources without competent persons to apply them.

How often are clients asking whether a duty holder has adequate resources? Are they checking it as often as competence? Do they ask the question if a duty holder has adequate resources appropriate to the nature of the work to be undertaken having regard to the task required to be performed and taking account of the size or hazards? Unfortunately adequate resources are not being checked to the same level and standard as competence within the Industry today.

There is some guidance that can be used for assessing competence such as the Health and Safety Authority's, (HSA) questionnaires BCP 1 and BCP 2. Tools and guidance to assist in checking adequate resources may not be as abundant but nonetheless are available. For example, the Construction Safety Partnership's Project Supervisor Design Process (PSDP) Case Study gives a client a step by step guide as to the actions a PSDP undertook on a sample project (http://csponline.ie/publications/). This case study could educate the client to ask questions in order to determine the level of resources being committed to a project by a PSDP, including for example the number of design team and site meetings to be attended.

Similarly, clients can ask at Project Supervisor Construction Stage (PSCS) how often site audits are planned, and site inductions are undertaken. The answers should be compared against the actions as suggested by recognised bodies such as the HSA and CIF in published documents such as the HSA's Guidelines to the Construction Regulations and HSA's Clients in Construction - Best Practice Guidance.

Where the project is carried out in furtherance of the clients business (i.e. non-domestic projects), the duty of assessing both competence and adequate resources of duty holders falls on the client, who is usually one of the least informed members of a project team. However ignorance is no defence in law. A client has a statutory obligation to only appoint those who are competent and have adequate resources. A failure to do so can lead to criminal conviction. Asking the duty holders to confirm they are competent and have adequate resources does not relieve the client of their statutory obligations. Where the work is carried in a domestic home, the duty holders are obliged to confirm to the client that are competent and have adequate resources. In this case the client has few obligations.

If a client for a project in furtherance of their business does not provide a fair and reasonable fee to a contractor or designer, how can they argue that adequate resources were available for the successful completion of the project? Likewise a contractor or designer who does not ensure the fee they proposed for a domestic project provides adequate resources is equally guilty of a breach of a statutory provision.

In the event of an accident on a construction site, the HSA is obliged to investigate all the relevant contributory circumstances in every case. This could, and should, include an assessment as to whether competent duty holders with adequate resources were appointed. There is no doubt that it is only a matter of time before we see convictions for these breaches of a statutory obligation. Many public sector clients mistakenly believe that they are obliged to appoint the lowest tenderer in any procurement competition. However, they are actually obliged to appoint the most economically advantageous tender. They have been provided with a suite of procurement documents by the Government Contracts Committee. These documents allow the selection of an appropriate quality price-ratio depending on the complexity of the project. An appropriately selected quality price-ratio, correctly applied takes the emphasis away from the lowest cost and is far more likely to end up with the appointment of adequately resourced duty holders. Any individual public servant who fails to follow the Government Contracts Committee Procurement Procedures leaves themselves personally liable for a breach of statutory obligation and consequently open to a potential criminal conviction.

FIREPRO

"OUR STRENGTH IS YOUR SAFETY"

Fire Protection & Thermal Insulation Contractors

Firepro are specialist applicators & installers of:

- Intumescent Coatings
- Penetration Seals
- Fire Boards
- Barriers
- Casing
- Cementitious Sprays
- Mineral Wool
- Suppression Systems

info@firepro.ie
www.firepro.ie
Tel: 353 (0)1 282 0484

VOLUNTARY CONSTRUCTION REGISTER

CONSTRUCTION INDUSTRY FEDERATION

Boris

firas

ASFPI

RADLEY ENGINEERING LTD

Europe's Leading Engineering Firm specialising in:-

Design, Manufacture, Fabrication & Mechanical Site Installation of High Quality Stainless Steel, Carbon Steel, Exotic Materials & Special Alloys

SAFETY FIRST…QUALITY ALWAYS…RIGHT FIRST TIME

Mechanical Site Installation/Maintenance…Modular Skid Packages…Pressure/Atmospheric Vessels & Tanks…Reactors…Heat Exchanger…Process Columns
Fully Trained Certified Specialist Welders, Craft Personnel & Design Team
Radley Engineering Ltd., Dungarvan, Co. Waterford
Tel: 00353 58 41199
Visit our Website – www.radleyeng.com

CONDITIONS OF ENGAGEMENT

ACEI and Engineers Ireland issued revised Conditions of Engagement in 2020:

- Agreement SE 9101 for the appointment of a consulting engineer for structural engineering work, and
- Agreement ME 2000 for the appointment of a consulting engineer for building services engineering work where the engineer is not the lead consultant.

With the exception of the individual services to be delivered by the Consulting Engineer, SE 9101 and ME 2000 are very similar.

The main changes to the documents relate to the following issues:

- The major changes to Building Control Legislation following the introduction of BC(A)R, S.I. 9 of 2014,
- The revisions to Health & Safety Legislation in relation to domestic clients, with the Safety, Health and Welfare at Work (Construction) Regulations 2013, S.I. 291 of 2013,
- The setting out of the normal allocation of design team responsibilities in relation to drainage,
- The elimination of the Memorandum of Agreement,
- The definition of the information to be provided by the Client to the Consulting Engineer where BIM and /or digital deliverables are specified for a project.

There are also a number of other changes to individual clauses throughout the documents, particularly in relation to additional services.

The revised documents carry forward previous critical clauses in relation to liability:

- Limit on Liability
- Net Contribution Clause
- Consequential Loss
- Collateral Warranties

For the benefit of both clients and consultants, the Association strongly recommends the use of these new Conditions of Engagement Agreements for the appointment of consulting engineers.

ACEI considers that the revised documents now reflect the up to date legislative situation in the industry, and that they will be very beneficial in the provision of a comprehensive and professional service to Clients.

Note: Hard copies of the new Conditions of Engagement documents are available from both the ACEI and Engineers Ireland offices.

ACEI ASSOCIATION OF CONSULTING ENGINEERS OF IRELAND

DIRECTORY OF MEMBERS

2024

GLOSSARY

Explanation of Engineering Disciplines

Civil Engineering
Arterial Drainage
Bridge and Dam Construction
Land Reclamation
Road and Highways
Sewage Treatment and Disposal
Site Investigation and Developments
Water Treatment Storage and Supply
Industrial Effluent and Pollution Control
Irrigation Systems
Environment Studies

Structural Engineering
Foundations
Building and Structural Frames

Mechanical Engineering
Steam Boiler Plants and Distribution Systems
Calorifies Plants
Water Treatment & Filtration
Dust Extraction & Collection
Fire Protection & Prevention
Compressed Air & Vacuum Systems
Pneumatic Conveyors
Hospital Services
Laboratory Services
Fuel Oil Storage & Distribution
Gas Fuel Supply & Distribution
Piping Systems
Cooking & Catering Equipment
Laundry Equipment
Sterilising Equipment & Systems
Conveyor Systems & Mechanical Handling Plant
Refuse Collection & Disposal Systems
Vibration Control
Sound Insulation & Control
Acoustical Design & Treatment
Piped Waste and Soil Systems
Industrial Effluent and Flue Gas Treatment

Marine Engineering
Sea and River Dredging
Sea Walls and Erosion Protection
Jetties, Wharves and Harbours
Marine Structures

Traffic Engineering
Traffic Studies
Transport Systems

Electrical Engineering
Electrical Generating Plant
Main & Emergency Supply Systems
H.T. & L.T. Distribution and Sub-Stations
Internal Distribution Systems
Illumination Engineering
Power Systems & Supply
Instrumentation
Street & Area Lighting
Hoists, Escalators & Lifts
Communication Systems
Fire Detection and Alarm Systems
Time Recording and Display Systems
Public Address, Personnel - Location and Call Systems
Radio and Television Installation
Central Distation Systems
Lighting Protection Systems

Heating, Ventilating and Air-Conditioning
Heat Generators
Heating Installations
Hot and Cold Water Storage and Distribution
Refrigeration & Cold Storage
Air-Conditioning Installations
Ventilation Systems
Thermal Insulation

Explanation of Abbreviations

A	Associate
AM	Associate Member
AIEE	American Institute of Electrical & Electronic Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration & Air-Conditioning Engineers
BA	Bachelor of Arts
BAI	Bachelor in Arte Ingeniaria (Engineering)
BE	Bachelor of Engineering
BSc	Bachelor of Science
CEng	Chartered Engineer
CIArb	Institute of Arbitrators
CIBSE	Chartered Institution of Building Services Engineers
DCT	Diploma in Concrete Technology
DEM	Diploma in Engineering Management
DIC	Diploma of the Imperial College of Science & Technology
DipEng	Diploma in Engineering
DLA	Diploma in Liberal Arts
DPA	Diploma of Public Administration
Eur Ing	European Engineer
F	Fellow
FB	Faculty of Building
FConsEI	ACEI Fellow Professional Consulting Engineer
Grad	Graduate
ICE	Institution of Civil Engineers
IEE	Institution of Electrical Engineers
IEI	Institution of Engineers of Ireland
IF	Institute of Fuel
IHT	Institution of Highway and Transportation
IHVE	Institution of Heating & Ventilation Engineers
IIMH	Irish Institute of Materials Handling
IMarE	Institution of Marine Engineers
IMechE	Institute of Mechanical Engineers
IMunE	Institution of Municipal Engineers
Ing.EurEta	EurEta Registered Engineer (European Higher Engineering and Technical Professionals Association)
InstME	Institution of Maintenance Engineering
InstP	Institute of Petroleum
INSTWPC	Institute of Water Pollution Control
IPHE	Institution of Public Health Engineers
IStructE	Institution of Structural Engineers
IWEM	Institution of Water and Environment Management
IHEEM	Institute of Healthcare Engineering and Estate Management
InstE	Institute of Energy
InstPet	Institute of Petroleum
InstTE	Institute of Transport Engineering
InstWPC	Institute of Water & Pollution Control
IOR	Institute of Refrigeration
IOSH	Institute of Safety and Health
IPHE	Institution of Public Health Engineers
IPI	Irish Planning Institute
IProjMng	Institute of Project Management
M	Member
MA	Master of Arts
MAI	Master in Artia Ingeniaria (Engineering - TCD)
MASc	Master of Applied Science
MBA	Master of Business Administration
MEM	Master of Engineering Management
MEng	Master of Engineering
MConsEI	Member of Association of Consulting Engineers of Ireland (ACEI)
MConsE	Member of Association of Consulting Engineers (UK)
MCGI	Member of the City and Guilds of London Institute
ME	Master of Engineering
MEngSc	Master of Engineering Science
MIE	Master of Industrial Engineering
MSc	Master of Science
PhD	Research Degree – Doctor of Philosophy
Pind	Diploma in Industrial Engineering (Madrid University)
PE	Professional Engineer (Licence to practice in a State of the USA) Professional Engineer (Licence to practice in a province of Canada)
RConsEI	ACEI Registered Professional Consulting Engineer
RIAI	Royal Institute of the Architects of Ireland
RSH	Royal Society for the Promotion of Health
RTPI	Royal Town Planning Institute
SFPE	Society of Fire Protection Engineers (US)
SLL	Society of Light and Lighting
SM	Student Member
VDI	German Association of Engineers

2HQ CONSULTING ENGINEERS LTD

6 Burnell Court, Northern Cross, Malahide Road,
Dublin 17. D17 RX47

T: +353 (0)1 968 5070

E: info@2hq.ie

W: www.2hq.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Stephen McQuade,** BEng (Hons), CEng, MIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

7

ABOUT THE FIRM

2HQ is an engineering consultancy firm offering the full spectrum of civil and structural engineering services to the construction and property sectors and also bespoke expert engineering services to the insurance and legal sectors. Our vision is to provide a single point of service for fully coordinated engineering design and project management that constantly exceeds the expectations of project stakeholders.

ENGINEERING ACTIVITIES

Civil, Structural, Traffic, Transportation, Project Management, Health and Safety, Building Investigations and Remediation.

PROJECT TYPES

Residential, Commercial, Industrial, Conservation and Refurbishment, Education, Temporary Works, Roads, Planning Applications, Design & Build, Office, Public Sector, Leisure, Building Surveys, Expert Engineering.

A1 ENG

11 Park Lane, Chapelizod, Dublin 20. D20 HX96

T: +353 (0)1 443 4105/+353 (0)87 779 2823

E: a1engconsult@gmail.com

OFFICES

Annsfort House, Lisnaclea, Shantonagh, Co. Monaghan
T: +353 (0)87 779 2823

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **EUR ING Senior Ing.EurEta Kevin P. Tracey,** CEng, DipEng, DEM, MCGI, FIEI, FCIBSE, FSLL, FInstME, FConsEI

TOTAL EMPLOYEES

1

ABOUT THE FIRM

Formerly Engineering Design and Management (EDM). The firm was established in 1997 and has gained a reputation for high quality design and service in the building services industry both nationally and internationally. International experience has been gained in England, Holland, Italy, Libya, Egypt, Nigeria, Sudan, the Kingdom of Saudi Arabia, Japan and the United States of America. It is the mission of the firm to deliver technically innovative, sustainable and cost effective engineering solutions to clients on time and to the highest level of national and international standards of excellence, quality and safety.

The firm is affiliated to a number of professional engineering bodies including Engineers Ireland, Association of Consulting Engineers of Ireland, Chartered Institution of Building Services Engineers, Society of Light and Lighting, European Federation of National Engineering Associations and European Association of Practice-oriented Professionals with Higher Education.

ENGINEERING ACTIVITIES

Sustainable Building Services Engineering, Mechanical Engineering, Electrical Engineering, Health and Safety, Fire Safety, Data Communications and Infrastructure, Vertical Transportation, Specialist Lighting, Low Energy and Sustainable Solutions, Energy Audits, Building Refurbishments, Maintenance Engineering, Building Services Insurance Claims, Accident Investigations, Forensic Engineering, Project Management, Project Monitoring and Cost Management.

PROJECT TYPES

Office Developments, Health Care Facilities, Pharmaceutical Plants, Clean Rooms, Data Centres, Industrial/Production Facilities, Warehouses, Educational Buildings, Embassies, Agricultural, Social Housing, Community Centres, Religious Buildings, Hotels/Apartments/ Housing, Private Dwellings, Sports and Leisure, Shopping Centres, Airport Facilities, Information and Communications Technology Projects, Lighting Projects, Refurbishment Projects, Historic Buildings, Temporary Installation Projects, Accident Investigations and Forensic Engineering.

AGL CONSULTING

Suite 2, The Avenue, Beacon Court, Sandyford, Dublin 18. D18 E0K5

T: +353 (0)1 295 6532

W: www.agl.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Conor O'Donnell,** BA, BAI, MNS, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

AGL Consulting is one of the leading geotechnical engineering consulting firms in Ireland. We are an independent Irish-owned company based in Dublin. The company was set up in January 2001 by Dr. Eric Farrell and Conor O'Donnell to provide expert consulting and design services in the fields of geotechnical engineering, engineering geology and hydrogeology.

Since its inception, AGL has worked on a diverse range of projects including tunnels, waterfront structures, motorways, flood control schemes, pipelines, water treatment systems, power stations, windfarms and large scale commercial and residential developments. We have worked on many of the technically challenging landmark civil projects in Ireland including the Dublin Port Tunnel, Limerick Tunnel PPP Scheme, Corrib Onshore Gas Pipeline and Dublin Port Alexandra Quay Development.

We have been involved in the earthworks design for over 150 km of motorways around Ireland, and the geotechnical design of a large number of windfarm projects, many of which had challenging geotechnical conditions on unstable upland blanket peat bogs or reclaimed tidal mudflats. We have provided expert geotechnical design services for large commercial developments with deep basements in congested urban settings such as the Dublin Central Shopping Centre and the Dundrum Town Centre.

Through our work we have gained extensive and invaluable experience in design and construction in a variety of ground conditions throughout Ireland, the UK and abroad. Our clients include many of the leading large civil contractors in the country, as well as a number of engineering consulting firms, local authorities, and property developers.

It is our mission to the deliver technically innovative and cost-effective geotechnical designs to our clients on-time and to the highest international standards of excellence, quality and safety.

ENGINEERING ACTIVITIES

Foundation Design – Piling and Spread Footings, Earth Retaining Structures and Excavation Support Systems, Tunnelling, Micro-Tunnelling and Pipe-Jacking, Earthworks Design for Civil Works, Slope Stability Analysis in Soil and Rock, Ground Anchors and Anti-Flotation Tension Piles, Ground Improvement Techniques, Geotechnical Instrumentation, Desk Studies and Walkover Surveys, Environmental Impact Statements (Soils & Geology), Ground Investigations, Geotechnical Interpretive and Design Reports.

PROJECT TYPES

Geotechnical Risk Management, 2D and 3D Finite Element Analysis, Groundwater Modelling, Construction Over Soft Ground, Temporary Works Designs, Expert Witness for Arbitration and Conciliation.

ARUP

50 Ringsend Road, Dublin 4. D04 T6X0

T: +353 (0)1 233 4455

E: dublin@arup.com

W: www.arup.com

OFFICES

One Albert Quay, Cork. T12 X8N6
T: +353 (0)21 422 3200

Hartstonge House, Upper Hartstonge Street, Limerick. V94 F8XE
T: +353 (0)061 212 100

Corporate House, City East Business Park, Ballybrit, Galway. H91 K5YD
T: +353 (0)91 894 700

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Clodagh O'Donovan,** BE, MEngSc, CEng, FIEI, MCIWEM, CWCM, FConsEI
- **Liam Luddy,** BE, CEng, MIEI, DipLaw, FConsEI
- **Joe Burns,** BE CEng MIEI MIStructE, FConsEI

TOTAL EMPLOYEES

650

ABOUT THE FIRM

Arup is the creative force at the heart of many of the world's most prominent projects in the built environment and across industry. With 89 offices across 33 countries, Arup has 15,000 designers, engineers, consultants, project managers and technical specialists delivering innovative projects around the world with creativity and passion. We offer a broad range of professional services that combine to make a real difference to our clients and the communities in which we work. We have been delivering landmark projects since our foundation in Ireland in 1946. Arup is one of the largest consulting engineering practices in Ireland, providing multidisciplinary engineering and advisory services from our offices in Dublin, Cork, Belfast, Galway and Limerick. We have built a reputation for unrivalled quality, local expertise and knowledge. With an enduring set of values and sense of purpose, our unique trust ownership fosters a distinctive culture that encourages collaborative working. This allows us to develop meaningful ideas, help shape agendas and deliver results that frequently surpass the expectations of our clients. The people at Arup are driven to find a better way and to deliver better solutions. Sustainable development is central to all our work. Through our diverse and expanding range of disciplines, we strive to shape a better world by designing safe, inclusive and resilient communities, infrastructure and cities.

ENGINEERING ACTIVITIES

Advisory Services, Asset & Facilities Management, BIM, Business Investor Advisory, CFD, Civil, Controls, Cost Consulting, Digital Property, Electrical, Energy, Environmental, Façade, Fire and Public Health Engineering, Ground Engineering, Health & Safety and Risk Management, Information and Communications Technology, Intelligent Mobility, Lighting, Masterplanning & Urban Design, Mechanical, Planning, Project & Programme Management, Road Pricing, Site infrastructure design, Site location and assessment, Structural, Sustainability, Transport Planning, Wellness consulting

PROJECT TYPES

Aviation, Highways, Bridges/Civil Structures, Rail, Water, Flood Risk Management, Maritime, Energy, Social Infrastructure, Commercial Property, Science, Industry & Technology, Healthcare, Residential, Mixed Use and Education.

AXISENG M&E LTD

47 Mount Street Upper, Dublin 2. D02 AC95

T: +353 (0)1 491 0044

E: info@axiseng.ie

W: www.axiseng.ie

FConsEI- ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Cian Dowling,** BSc (Hons) Eng, Dip Eng, CEng, MIEI ,FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEER

- **Rachel McKenna,** BEng, CEng, MCIBSE, DipProjMgt, LEED AP, RConsEI

TOTAL EMPLOYEES

40

ABOUT THE FIRM

Axiseng is a well-resourced, independent building services consultancy practice formed in 2004. We have established a reputation for consistently delivering a high quality service across a broad range of projects including large commercial developments, institutional refurbishments and complex industrial installations. Our directors are well known in the construction industry for their integrity, expertise and project commitment, and are recognised leaders in the fields of sustainable design, complex air conditioning installations and master planning major developments. The size of our practice allows the directors to maintain a strong personal presence throughout the full duration of every project.

ENGINEERING ACTIVITIES

Mechanical and Electrical Building Services, Sustainable/ Energy Engineers, Energy Modelling, Daylight/Sunlight Analysis, Net Zero Carbon Solutions, Heating / Ventilating and Air-Conditioning, Medical Gas Design, Project Management, Fire & Security Engineering, ICT & Communication Systems, Vertical Transportation Engineering, MEP Cost Control, 3D Building Information Modelling (BIM), BCAR Inspection / Reporting, Public Lighting, Value Engineering.

PROJECT TYPES

Commercial, Retail, Pharmaceutical, Education, Hotel, Sports and Leisure, Energy Audits, Health Care, Religious, Residential, Prisons, Industrial, Exhibition Spaces, Sports Stadia Facilities, Protected Structures / Historical Buildings, Hospitals, Mixed-use Developments, Shopping Centres, Master planning, Nursing Homes, Institutional, Heritage.

BARRETT MAHONY CONSULTING ENGINEERS

Sandwith House, 52/54 Lower Sandwith Street, Dublin 2. D02 WR26

T: +353 (0)1 677 3200

E: bmce@bmce.ie

W: www.bmce.ie

OFFICES

5th Floor, Mill House, 8 Mill Street, London, SE1 2BA
T: +44 (0)203 750 3530

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Ciarán Kennedy,** BSc(Eng), DipStructEng, CEng, MIEI, MIStructrE, FConsEI
- **Brian Mahony,** BE, DipCompEng, CEng, MIEI, MIStructE, FConsEI
- **John Considine,** BE, CEng, MIEI, MIStructE, FConsEI
- **Stephen O'Connor,** BSc(Eng), DipStructEng, CEng, FConsEI
- **Vincent Barrett,** BSc(Eng), DipStructEng, MSc, DIC, CEng, MIEI, MIStructE, FConsEI
- **Michael Hughes,** BEng, CEng, MIEI, MIStructE, MICE, Eur Ing, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEER

- **Liam Heffernan,** BSc(Eng), DipStructEng, MSc(Eng), CEng, MIEI, MIStructE, MIBCI, RConsEI

TOTAL EMPLOYEES

100

ABOUT THE FIRM

Barrett Mahony Consulting Engineers (BMCE) is a civil and structural engineering consultancy established in Dublin in 1994. BMCE is a progressive practice specialising in all aspects of civil and structural engineering, with offices in Dublin and London. The directors and staff have extensive experience in both public and private sectors across a broad range of projects including residential, commercial, industrial and institutional developments, with a particular specialist expertise in the refurbishment of heritage buildings. The BMCE practice ethos is to foster a positive problem solving approach amongst staff whilst always maintaining a quality-assured service with primary emphasis on technical excellence and cost-effective design. BMCE recognise the need to continuously invest in its staff and technology in order to provide competitive and up-to-date services to its clients. The company has comprehensive policies developed and in place in relation to quality assurance, health and safety and continuing professional development. The firm is focused on providing a quality assured service to its clients whilst ensuring that it complies with its responsibilities under health and safety legislation both as designers and as employers. As employers, it is also keen to promote career satisfaction and progression for the benefit of individual and organisational success. BMCE has received numerous awards and accolades for projects where they have provided noteworthy designs.

ENGINEERING ACTIVITIES

Structural, Civil, Project Management.

PROJECT TYPES

Construction Commercial, Retail & Office, Residential, Mixed Development, Education, Master Planning, Industrial Developments, Bridges, Healthcare, Institutional, Restoration & Protected Structures, Church Refurbishment, Government Departments, Multistorey Car Parks.

BCE, BELTON CONSULTING ENGINEERS LTD

Unit B17, Ballymount Corporate Park, Ballymount Avenue, Dublin 12. D12 NN97

T: +353 (0)1 429 5774

E: info@bcge.ie

W: www.bcge.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Shane Belton,** BScEng CEng, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

Murphy Belton is a Dublin-based consulting engineers company, offering expertise in mechanical, electrical, and public health engineering. Sustainability and energy conservation is at the core of what we do. Our ideology is centred on three core pillars:

To optimise client investment through simple yet innovative design with a goal to maximise client return.

To deliver better design through our unique structured process system, utilising systemisation to deliver consistency and quality in all our projects.

To be 'easy to get along with'. We pride ourselves on our staff's ability to problem solve, be proactive and flexible and effective communicators.

How we Deliver Quality Design – E3D Process
Extract – Our engineers are trained to ask better questions – we don't make assumptions, there is no guessing. Our mantra is give them what they want not what we think they want. How do we deliver this? Through clarifying the design goals and working in collaboration with the design partners.
Define / Design – Our objective is to mitigate risk of budget creep, lockdown scope, and correlate technology to maximise efficiency and keep it simple.
Deliver – Our aim is to deliver quality and consistency through benchmark processes. To engage in proactive problem solving. To be flexible yet creative and always adhere to the age-old adage 'the value is in the finishing'.

Murphy Belton's strengths lie in our communication and collaboration skills making us strong team players in any design team.

ENGINEERING ACTIVITIES

Building Services, Medical Gas Design, 3D Building Information Modelling (BIM), Energy Engineering, Heating / Ventilating and Air-Conditioning, Sustainable Engineering Design, Project Management, Fire & Security Engineering, Services Cost Control, BCAR Inspection/Reporting, Vertical Transportation Engineering, ICT & Communication Systems.

PROJECT TYPES

Offices / Commercial / Light Industrial, Laboratories,Third Level Sector, Clean Rooms, Retail, Hospitals / Healthcare Buildings, Residential, Heritage, Leisure Facilities, Public Buildings, Schools, Hospitals, Refurbishment, Bridges, Roads, Ports and Harbours, Surveys, Hotel & Leisure, Courtroom Facilities.

BDP

Old Stone Building, Blackhall Green, Dublin 7. D07 V0RF

T: +353 (0)1 474 0600

E: dublin@bdp.com

W: www.bdp.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **David Brennan,** BEng, CEng, MIEI, MCIBSE, FIHEEM, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEER

- **Patrick Kavanagh,** BE, CEng MIEI, RConsEI

TOTAL EMPLOYEES

22

ABOUT THE FIRM

BDP is a multi-professional practice providing a high quality, integrated design service for the built environment. We have offices in Ireland, Britain, Netherlands, Canada, India, China and the Middle East. We have been working successfully in Ireland for over 50 years offering a wide spectrum of professions and skills. Our integrated service is supported by the latest technology and computer-aided design and we are able to network skills and experience around the practice to the benefit of our projects. We also operate an 'all through' Quality Management System, which meets the requirements of ISO 9001 and an Environmental Management System which meets the requirements of ISO 14001.

We are passionate about designing sustainable, low energy buildings and for over 25 years our Dublin team has worked closely with our clients to deliver design solutions that minimise carbon emissions.

ENGINEERING ACTIVITIES

Mechanical and Electrical, Structural, Civil, Specialist Lighting, Acoustics, Heating, Ventilation and Air Conditioning, Dynamic Simulation Modelling, Low Energy / Low Carbon / Sustainable Design, BER Certification, BREEAM Assessors, LEED, WELL, WIRED, Life Cycle Assessments.

PROJECT TYPES

Education, Hospitals / Healthcare, Offices Developments / Fit Outs, Hotels, Residential, Mixed-use Developments, Commercial, Industrial, Shopping Centres, Leisure / Sports Centres, Historic Refurbishment, Master planning.

BJS CONSULTANTS

1 Marble Hill, Boreenmanna Road, Cork. T12 RY8R

T: +353 (0)21 431 5610

E: info@bjsconsultants.com

W: www.bjsconsultants.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Brendan Sheehan,** CEng, MIStructE, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

BJS Consultants was formed in 1998 by Brendan Sheehan, Chartered Structural Engineer with over 30 years' experience working with major consultancies in Ireland and overseas. The firm has completed a wide variety of projects and has the resources to provide a complete package for our clients. We offer a high quality, cost effective civil, structural and environmental engineering service with the emphasis placed on a personal service to the client. This ensures that our clients deal directly with the same team who are responsible for their project from start to finish. We also have ISO 9001 and ISO 14001certification.

ENGINEERING ACTIVITIES

Civil, Structural & Environmental, Engineering, Temporary Works Design, Project Management, Site Supervision, Surveys & Monitoring.

PROJECT TYPES

R&D and Industrial Facilities, Schools, Healthcare Facilities, Sports/Leisure Facilities, Refurbishments of Old and Historical Building, Property Surveys, Vibration and Noise, Monitoring, Temporary Work Design.

BRACKFIELD CONSULTING LTD

Unit K21, Drinan Enterprise Centre, Feltrim Road, Swords, Co. Dublin. K67 PD63

T: +353 (0)1 892 8087

E: info@brackfieldconsulting.com

W: www.brackfieldconsulting.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Kevin Brackfield,** BEng (Hons), CEng, MIStructE, MIEI, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Brackfield Consulting was established in 2009 by Kevin Brackfield as a general application engineering consultancy including architectural services. Kevin was previously Director of Off-Site Construction Design Ltd and B&E Consultants and he has 30 years' consultancy experience. Finalists in the award for excellence in Architectural Technology 2022, Brackfield Consulting places great emphasis on green design and ethical business practices.

ENGINEERING ACTIVITIES

Civil & Structural, Temporary Works, Architectural, Report and Advisory, Conservation, Project Management.

PROJECT TYPES

Structural/Architectural, Temporary Works Design, Restoration of Historic Buildings, Residential, Industrial, Educational, Commercial, Pyrite, Reporting and expert witness services.

BUNNI & ASSOCIATES LTD

42 Thormanby Road, Howth, Co. Dublin. D13 Y270

T: +353 (0)1 839 1141

E: bunni@eircom.net

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Nael G. Bunni,** BSc, MSc, PhD, CEng, FIEI, FICE, FIStructE, FCIArb., FIAE, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

In 1994 Dr Bunni established the firm of Bunni & Associates Ltd. and has continued to practice his engineering activities. Until March 1994, Dr Bunni was a Senior Director of T.J. O'Connor & Assoc., Consulting Engineers, Dublin, which was established in 1937. He joined the above firm in 1969.

ENGINEERING ACTIVITIES

Civil & Structural, Forensic Engineering, Dispute Resolution, Construction Insurance.

PROJECT TYPES

Expert Adviser in Dispute Resolution, Arbitrator in International Dispute, Conciliator, Arbitrator in Domestic Dispute, Dispute Board Member.

CARRAIG CONSULTANTS

11 Avondale Road, Killiney, Co. Dublin. A96 HK50

T: +353 (0)1 285 2222 / +353 (0)86 241 0184

E: ciaran.macintyre@carraigconsultants.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Ciarán MacIntyre,** BAI, CEng, MIEI, MIStructE, MCIArb, FIHEEM, FConsEI

TOTAL EMPLOYEES

1

ABOUT THE FIRM

Carraig Consultants was established in 2009 by Ciarán MacIntyre as an independent niche consultancy with a particular focus on structural design, project management and report and advisory work. Ciarán is an ACEI Registered Chartered Engineer with more than 35 years' engineering consultancy experience in the built environment. He is committed to taking personal charge from inception to completion of all work undertaken by Carraig. Ciarán was a Director of P.H McCarthy & Partners from 1997 to 2007. In October 2007 PH McCarthy & Partners was acquired by WYG Ireland and Ciarán became a Director of WYG Engineering. He continued to work with WYG until October 2009 when he set up Carraig Consultants.

ENGINEERING ACTIVITIES

Structural, Civil, Conservation, Project Management, Report & Advisory, Value Engineering, Dispute Resolution.

PROJECT TYPES

Residential, Commercial, Industrial, Health, Educational, Restoration & Conservation.

CHH CONSULTING ENGINEERS

Innisfree House, 44-45 High Street, Sligo. F91 WC79

T: +353 (0)71 916 1844

E: info@chh.ie

W: www.chh.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Paul Henry,** BScEng (Hons), Dip Eng, Eur Ing, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Established in 1981 as Concannon Healy Heffernan and recently re-branded to CHH Consulting Engineers. Predominantly based in the north-west but expanding to cover a large area of Ireland.

ENGINEERING ACTIVITIES

Civil & Structural.

PROJECT TYPES

Site Developments, Water Supply & Drainage, Residential Developments, Retail & Office Developments, Civic & Public Buildings, Building Restoration Projects, Hotel & Tourism Developments, Hospital & Healthcare Projects, Sports Hall & Leisure Projects, Third Level Colleges, School & Education Facilities, Banking & Institutional Projects, Energy & Wind farm Projects.

CLIFTON SCANNELL EMERSON ASSOCIATES

3rd Floor, The Highline, Bakers Point, Pottery Road, Dun Laoghaire, Co. Dublin, A96 KW29

T: +353 (0)1 288 5006

E: info@csea.ie

W: www.csea.ie

OFFICES

Unit 4D Fingal Bay Business Park, Balbriggan, Co. Dublin

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Geoff Emerson,** BE, MSc(Eng), CEng, MIEI, FConsEI
- **Aidan Smith,** Dip Eng, BSc(Eng), MSc(Eng), CEng, MIEI, A.IOSH, FConsEI

TOTAL EMPLOYEES

95

ABOUT THE FIRM

Clifton Scannell Emerson Associates is an independent, Irish owned firm of civil and structural consulting engineers incorporated in 1986 and originally founded in 1952. Our expertise covers a range of civil, structural, transportation and environmental engineering as well as project management. We pride ourselves in delivering engineering and management skills to give optimum value and sustainable solutions to our valued clients. We are ISO 9001:2015 & OHSAS18001 certified and are accredited members of Engineers Ireland's CPD programme.

ENGINEERING ACTIVITIES

Civil, Structural, Transportation, Environmental, Project Management, Project Supervisor Design Process (PSDP).

PROJECT TYPES

Roads, Bridges and Transport Schemes including Cycle Network Schemes, Bus Corridors and Green Routes. Site Development, Water and Drainage Schemes, Airport Facilities, Bridge Design and Assessment, Building Assessment and Refurbishment, Commercial / Industrial / Office Buildings, Conservation and Restoration, Data Centre Developments, Heritage Centres, Hospitals and Healthcare Projects, Cemetries and Crematoriums, Industrial and Business Parks, Multi-storey Car Parks and Transport Depots, Prison Facilities, Residential Developments, Universities / Colleges / Schools, Large Catchment Studies, Masterplanning, Transportation Studies, Traffic Impact Assessment and Mobility Plans.

CORA CONSULTING ENGINEERS

Behan House, 10 Lower Mount Street, Dubln 2.
D02 HT71

T: +353 (0)1 661 1100

E: john.casey@cora.ie

W: www.cora.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **John Pigott**, BE, Cert Eng Tech, CEng, MIEI, FConsEI
- **John Casey**, BE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

27

ABOUT THE FIRM

CORA Consulting Engineers was founded in 2005 (then Casey O'Rourke Associates) to provide high quality structural and civil engineering design services.

The philosophy at CORA is to work in conjunction with architects and clients to support their aims and aspirations and to use our creative ability and innovative thinking, along with all available technology, to achieve the desired building or structure.

We promote a culture of creativity, innovation and quality in the firm and we are always striving to produce a better, more economical solution with a low embodied carbon.

ENGINEERING ACTIVITIES

Structural & Civil Engineering. Conservation & Renovation of Historic Structures. Temporary Works Design.

PROJECT TYPES

Office Developments, Commercial, Residential, Historic Buildings, Conservation, Protected Structures, Renovation, Mixed Use Developments, Industrial, Process/Pharmaceutical & Low Embodied Carbon Design of structures.

CS CONSULTING GROUP

19-22 Dame Street, Dublin 2. D02 E267

T: +353 (0)1 548 0863

E: info@csconsulting.ie

W: www.csconsulting.ie

OFFICES

45 O'Connell Street, Limerick. V94 XE18
T: +353 (0)61 594 988

45 Beech Street, London, EC2Y 8AD, UK
T: +44 (0)207 0703660

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Pearse Sutton,** CEng, BSc(Eng), DipStructEng, FIEI, MAPEGS, FIStructE, DipEnvEng, Eur Ing, LEED Assoc, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEER

- **Cian Twomey**, BEng (Hons), CEng, MEng, MIEI, RConsEI
- **Damien Byrne**, BE (Hons), CEng, MIEI, MIStructE, RConsEI
- **Luke McNamee**, BSc (Eng), CEng, BSc CIOB, MIEI, MIStructE, RConsEI
- **Niall Barrett**, BEng (Hons), CEng, MIEI, Cert H & S, Cert PSDP, Cert RSA, RConsEI
- **Robert Fitzmaurice**, BEng (Hons), CEng, Post Grad Dip EE, MIE, MIEI, RConsEI
- **Mark McEntee**, BSc Eng, CEng, MIEI, MIStructE, RConsEI

TOTAL EMPLOYEES

50

ABOUT THE FIRM

CS Consulting Group (Cronin & Sutton Consulting) is a Group of civil and structural engineers based in Dublin, Limerick and London which was founded in 2012. CS Consulting draws on the knowledge and experience of our founders and management team. All have directed significant development projects in several territories, ranging from commercial and retail to residential and mixed-use. Our vision is to deliver the highest level of excellence in engineering. We aspire to this from a solid base. Our track record is one of top-quality design, advice and service across Ireland and the UK. We hold accreditation to ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001, demonstrating the highest commitment to quality, environmental, health and safety and energy management.

ENGINEERING ACTIVITIES

Structural, Civil (and associated structures), Traffic & Transport, Health & Safety, Environmental, Energy Management, Sustainability.

PROJECT TYPES

Residential/Mixed Use, Industrial, Office/ Commercial, Health Care, Housing/Apartments, Roads and Drainage, Environmental Projects, Refurbishment Projects, Public Sector Projects, LEED Accreditation, Traffic & Engineering, Hotel, Retail and Leisure.

C S PRINGLE

Main Street, Castleblaney, Co. Monaghan. A75 YR99

T: +353 (0)42 974 6492

E: info@cspringle.com

W: www.cspringle.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Marcus Dancey,** BSc(Eng), DipEng, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

The current practice continues in the tradition of the original firm, established in 1973 by Christopher S Pringle. Consisting of chartered engineers, architects and registered building surveyors most projects are handled fully in-house. The current practice provides a wide-ranging engineering service to our clients, with an emphasis on first-principles design, appreciation of sustainability and of the interrelated disciplines within construction. We act as retained engineers for a number of large manufacturing industries where our engineering versatility and prompt turnaround of work engenders longstanding relationships.

ENGINEERING ACTIVITIES

Civil, Structural, Fire, Assigned Certifier, Project Supervisor Design Process, Sustainable Design.

PROJECT TYPES

Commercial/Retail, Industrial/Warehousing, Mixed Use Developments, Resource/Recreational Centres, Educational Buildings, Healthcare Buildings, Sports Facilities, Hotel and Leisure Facilities, Housing Retrofits, New Housing Developments, Flood Risk Assessments, Conservation Engineering.

CUNDALL LTD

2 Dawson Street, Dublin. D02 VK75

T: +353 (0)1 513 7120

E: dublin@cundall.com

W: www.cundall.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Gerard Doyle,** BEng(Hons), CEng, MIStructE, MIEI, FConsEI
- **Derry Kearney,** BSc(Hons), BEngTech, CEng, MCIBSE, FConsEI

TOTAL EMPLOYEES

42

ABOUT THE FIRM

The firm was founded in 1976 and over the past 40 years has become a global, multi-disciplinary, engineering consultancy with offices in Dublin and Belfast and a further 21 offices and 900 employees worldwide. We have brought our knowledge and award-winning engineering expertise to each of these markets, and tailored it to suit individual local needs. Our success in these markets is attributed to our ability to be flexible, highly responsive and adaptable to the different challenges, regulations and local practices which influence the delivery of projects in each region. With staff across the globe, offering a full range of integrated engineering services, we are big enough to be able to provide a highly focused and dedicated team on our clients' projects, but still at a size where our core values can be effectively applied. Every project is led by a partner/director to provide the right experience and guidance throughout the life of the project.

ENGINEERING ACTIVITIES

Acoustic Engineering, Building Information Modelling (BIM), Building Automation, Building Performance Services (BPS), Building Services Engineering, PSDP Consultancy, Civil Engineering, Data Centre Infrastructure Management (DCIM), Fire Engineering, Geotechnical and Geoenvironmental, Health and Wellbeing, IT and Audio Visual, Specialist Lighting (Light 4), Planning, Structural Engineering, Survey Solutions, Sustainable Design, Transportation and Vertical Transportation.

PROJECT TYPES

Aviation, Critical Systems / Data Centres, Education, Government, Healthcare, Industrial, Lifestyle, Masterplanning and Infrastructure, Residential, Retail, Workplace and Mixed-use.

DAVID KELLY PARTNERSHIP

Nelson House, Emmet Place, Youghal,
Co. Cork. P36 F864

T: +353 (0)24 92412

E: info@dkp.ie

W: www.dkp.ie

OFFICES

10 Ormonde Street, Kilkenny. R95 R2HY
T: +353 (0)56 780 1260

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Colin Brennan,** BE, CEng, MIEI, FConsEI
- **Dermot O'Shea,** BE, CEng, MIEI, FConsEI
- **John Kelly,** BE, MSc, CEng, MIStructE, MIEI, Conservation Accredited Engineer, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

The practice commenced in 1987 and has undertaken a wide range of structural engineering projects, together with civil engineering works such as earth and water retaining structures, storm and sanitary drainage and small bridges. The partnership has a long established practice in historic building conservation, including national monuments and historic buildings and structures. Accredited to ISO 9001:2015.

ENGINEERING ACTIVITIES

Structural, Civil, Statutory Planning, Building Conservation, Fire Safety, Geotechnical.

PROJECT TYPES

Office Buildings, Educational Buildings, Industrial Buildings, Multi-storey Residential Buildings, Retail and Commercial Developments, Infrastructure for Housing Development, Conservation of Historic Buildings and National Monuments, Public Realm Rejuvenation, Quay Wall Repair, Foundation Design in karstified limestone areas.

DAVID REHILL CONSULTING

David Rehill Consulting, Dublin

T: +353 (0)49 389 1101

E: david@drconsulting.ie

W: www.drconsulting.ie

OFFICES

Dublin

Grilly, Belturbet, Co Cavan. H14 A261

9 Poststraße, 40213 Düsseldorf, Germany

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **David Rehill,** BE, CEng, MBA, Dip Proj Mgt, MIStructE, MIE, FConsEI

TOTAL EMPLOYEES

1

ABOUT THE FIRM

David Rehill Consulting was established in 2022 to provide bespoke engineering advice and solutions to clients in Ireland and Germany. David has over 20 years' experience as project lead on many large multi-million euro residential, commercial, industrial, and mixed-use developments in Ireland, the UK, mainland Europe and the Middle East. He brings a very practical mindset to collaborative workshops and has a wealth of experience in large building projects in a variety of structural forms, such as steel frame, insitu concrete, precast concrete, post-tensioned concrete, modular construction, and historic buildings. David is a Chartered Engineer with Engineers Ireland and the Institute of Structural Engineers.

ENGINEERING ACTIVITIES

Structural Engineering, Civil Engineering, Environmental Engineering, Traffic and Transportation, Technical Due Diligence, Site Feasibility Studies, Planning Applications, Project Management.

PROJECT TYPES

Structural Engineering, Civil Engineering, Due Diligence Reports, Feasibility Studies, Value Engineering, Planning Applications, Protected Structure refurbishment.

DBFL CONSULTING ENGINEERS

Ormond House, 28 Upper Ormond Quay,
Dublin 7. D07 W704

T: +353 (0)1 400 4000

E: info@dbfl.ie

W: www.dbfl.ie

OFFICES

14 South Mall, Cork. T12 CT91
T: +353 (0) 21 202 4538

Odeon House, 7 Eyre Square, Galway. H91 YNC8
T: +353 (0) 91 335599

Suite 8b The Atrium, Maritana Gate, Canada Street, Waterford.
X91 W028
T: +353 (0) 51 309 500

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Dan Reilly,** BEng, CEng, FConsEI
- **John Hayes,** BScEng ,CEng ,MIEI, FConsEI
- **John Keane,** BSc (Eng), CEng, MIEI, MICE, FConsEI
- **James G. Lawler,** BE, DIP COMP, CEng, MIEI, FConsEI
- **Paul M. Forde,** BE, CEng, MIStructE, FIEI, FConsEI

TOTAL EMPLOYEES

202

ABOUT THE FIRM

DBFL Consulting Engineers is one of Ireland's leading civil, structural and transportation engineering consultancies. We combine commercial understanding with innovative engineering solutions.

For over 36 years, DBFL has been successfully making designs a reality across commercial, institutional, educational, industrial, infrastructure, transportation and marine sectors. We have built our reputation by providing a high level of personal service to both public and private clients in each of our three disciplines across Ireland, the UK and Europe.

Ten directors provide easily accessible points of contact to provide our clients with experienced decision-makers and economical and workable solutions. Backed by a workforce of over 200 dedicated staff, we have the capacity to manage all civil and structural aspects of projects, both large and small.

ENGINEERING ACTIVITIES

Civil, Structural, Traffic & Transportation.

PROJECT TYPES

Commercial, Retail, Ports & Airports, Residential, Institutional, Healthcare, Hotels & Leisure, Roads, Traffic & Transportation, Infrastructure, Education, Refurbishment/Conservation, Industrial.

DELAP & WALLER

1st Floor, Bloomfield House, Bloomfield Avenue,
Dublin 8. D08 WT10

T: +353 (0)1 535 5900

E: michael@delapandwaller.com

W: www.delapandwaller.com

OFFICES

Delap & Waller, Unit 12, Antrim Technology Park, Antrim, BT41

1QS
T: +44 (0)28 9448 3800

London Office, 91 Clapham Road, London, SW9 0HY
T:+44 (0)208 059 7373

Street No. 16, Musaffah Industrial Area, Abu Dhabi, UAE
T: +971 2 406 7888

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Michael O'Doherty,** BEng, CEng, MCIBSE, MIMechE, FConsEI

TOTAL EMPLOYEES

15

ABOUT THE FIRM

Founded in Dublin in 1911, Delap & Waller is a Building Services and Sustainable Design Consultancy who are engaged in designing mechanical, electrical and sustainability systems for all Building types. We have been providing market leading engineering services for end-user clients, developers, main contractors and design and build / PPP contractors for over 100 years. In addition to our tailored mechancial and electrical design services we offer a range of related services including sustainability services and specialist legal services. As qualified engineers we can produce legal reports on a variety of issues ranging from mechanical or electrical damage to properties, planning permission disputes to accident reports. Some of the sustainable services we offer include: BREEAM Assessments/ BER Certificates/ CFD Modelling / Building Simulation/ Code for Sustainable Homes/ Energy Management/ Environmental Studies and Engineering/Life Cycle Costing/Sustainable Building Services – SBEM & EPC Assessors Some of our recent awards include the ACE Consultancy of The Year and NI Construction Excellence Award in Commercial Development Category.

ENGINEERING ACTIVITIES

Sustainable Building Services, Electrical Engineering, Mechanical Engineering, Energy Management, Health and Safety, Project Management, Accident Investigation, Arbitration and Litigation.

PROJECT TYPES

Commercial/Office, Healthcare/Hospital, Infrastructure, Education; Retail, Hotel/Leisure, Residential/Mixed Use, Heritage/ Museums, Sports Stadiums.

D. FALLON CONSULTING ENGINEERS

25 Calbro Court, Tuam Road, Galway

T: +353 (0)91 380792

E: info@dfcg.ie

W: www.dfcg.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Damien Fallon,** B Eng, M Eng Sc, C Eng, MIEI, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

D. Fallon Consulting Group (DFCG) is a multi-disciplinary construction consultancy company operating out of Galway and Dublin, providing services nationwide. We work with many of Ireland's blue-chip public and private sector infrastructural clients. The group incorporates D Fallon Consulting Engineers (DFCE) and D Fallon Building Design (DFBD) to provide full AEC services to clients on major public and private sector building and infrastructural projects. DFCE is our civil and structural consultancy company, with DFBD our architectural consultancy company. DFCG also works with established building services and quantity surveying consulting partners to provide full single point design team services to clients, when required.

ENGINEERING ACTIVITIES

Civil & Structural, Design Team services.

PROJECT TYPES

Public and Private Sector Building and Infrastructural Projects, Project Management, Employer's Representative Services, Single-Point Design Team Management, Quantity Surveying (with strategic partner company), Building Services Engineering (with strategic partner company), Civil Engineering, Structural Engineering, Drainage Engineering, Traffic Engineering, Road Safety Audits, Mobility Management Plans, Environmental Engineering, Water & Wastewater, Structural Surveys, Project Supervisor Design Process (PSDP), Architectural Services, Masterplanning, REVIT BIM / 3D Visualisations, Fire Safety & Disability Access Certificates, Building Regulations Surveys, Assigned Certifier Specialists, Design Certifier Specialists.

DOHERTY FINEGAN KELLY

Botanic Court, 30-32 Botanic Road, Glasnevin, Dublin 9. D09 W2V9

T: +353 (0)1 830 1852

E: mailroom@dfk.ie

W: www.dfk.ie

OFFICES

Unit B, Penny Corn Mill, 11 Trinity Street, Drogheda, Louth. A92 E4EE
T: +353 (0)41 984 7394

Roselawn House, National Technology Park, Limerick. V94 4A06
T: +353 (0)61 633 299

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Cathal Kelly,** BSc Eng, Dip Struct Eng, CEng, MIStructE, MIEI, PGDip (FSP), PGDip (PM), FConsEI
- **Emmet Finegan,** BSc Eng, Dip Struct Eng, CEng MIStructE, MIEI, FConsEI

TOTAL EMPLOYEES

14

ABOUT THE FIRM

Doherty Finegan Kelly (DFK) Consulting Engineers was established in 2003 and specialises in all stages of civil, structural, environmental and fire engineering. With three offices, DFK is well located to provide a high quality service to our client base throughout the country with attention to detail and cost effective solutions being our priority. Each commission is personally supervised by a director who takes an active role in the evolution of the scheme from concept to completion. The company is registered with the Association of Consulting Engineers of Ireland (ACEI) and all technical staff are members of Engineers Ireland and The Institute of Structural Engineers.

ENGINEERING ACTIVITIES

Civil, Structural, Environmental, Fire Safety, Health & Safety, Legal & Reporting.

PROJECT TYPES

All Types of Business & Retail Parks, Commercial & Industrial Developments, Healthcare & Hospitals, Residential & Domestic Developments, Restoration / Refurbishment, Infrastructural Development Works, Sports & Leisure Facilities including All-Weather Playing Surfaces, Hotels, Nursing Homes & Childcare Facilities, Educational & Schools, Health & Safety & PSDP Role, Legal / Litigation & Expert Witness, Conservation Works, Legal & Planning Reports, Sewerage & Main Drainage, Fire Safety Engineering, Land & Legal Mapping, Percolation & Infiltration Testing & Reports, Storm Water Management, Roads & Junctions, Project Management, Building Energy Ratings – Domestic, Value Engineering, Temporary Works Design.

DONNACHADH O'BRIEN & ASSOC CONSULTING ENGINEERS

Unit 5C, Elm House, Millennium Park, Naas,
Co. Kildare. W91 P9P8

T: +353 (0)45 984042 / +353 (0)87 223 1452

E: d.obrien@doba.ie

W: www.doba.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Donnachadh O'Brien,** BScEng, CEng, MIEI, DipEng, DipEnvirEng, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEER

- **Paul Doyle,** BE (Hons), CEng, MIEI, RConsEI
- **Richard Kiernan,** BE (Hons), CEng, MIEI, RConsEI

TOTAL EMPLOYEES

18

ABOUT THE FIRM

Donnachadh O'Brien & Associates is a civil and structural engineering practice and was established in 2010. Donnachadh O'Brien has over 28 years' experience in civil and structural engineering and the practice is involved in the design of a wide variety of projects in both the public and private sector for local authorities, semi-state organisations, institutional companies, private sector companies, private developers and international clients. Our aim is to deliver technical excellence in our design solution in a sustainable and cost-effective manner. We utilise the latest BIM technologies compatible with our civil and structural design software in the delivery of innovative engineering solutions, all in accordance with our I.S. EN. 9001 quality accredited system.

ENGINEERING ACTIVITIES

Structural Engineering, Civil Engineering.

PROJECT TYPES

Commercial Developments, Hotels, Residential Developments including Student Accommodation, Educational Projects, Healthcare, Leisure/Sports including Stadia, Domestic, Conservation Engineering and Refurbishment, Project Management, Infrastructure & Drainage Schemes /SUDS Design, Flood Alleviation Schemes, Temporary Works Design, Value Engineering, Expert Witness & Legal Services.

DON O'MALLEY & PARTNERS LTD

92 O'Connell Street, Limerick. V94 RKT1

T: +353 (0)61 318 677

E: accounts@domalley.com

W: www.domalley.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Liam Kavanagh,** HDip, CEng, FCIBSE, MIEI, MASHRAE, FConsEI

TOTAL EMPLOYEES

14

ABOUT THE FIRM

Don O'Malley & Partners was established in 1967 and is a leading registered consulting engineering practice specialising in mechanical and electrical building services engineering. The company is based in Limerick City and has gained a reputation for high quality design and service in the construction industry. Our project portfolio includes work on commercial, industrial, office, residential, education, health care, retail, public buildings, culture and heritage buildings, hospitality and sports and leisure projects. Our in-house expertise is provided by highly skilled and experienced chartered engineers, degree-qualified engineers and technicians. We utilise the latest mechanical and electrical services and design technologies in the delivery of innovative and efficient solutions.These technologies include IES Virtual Environment Design software, REVIT 3D software and AutoCAD version 2017. We can deliver engineering services and design solutions for a range of buildings that are now required to meet the latest standards for compliance with Nearly Zero Energy Buildings (NZEB) regulations.

ENGINEERING ACTIVITIES

Mechanical and Electrical Design Consultancy.

PROJECT TYPES

Commercial, Industrial, Office, CAT A and CAT B Fitouts, Residential, Education, Health Care, Retail, Public Buildings, Culture & Heritage Buildings, Hospitality and Sports & Leisure Projects.

DOUGLAS CARROLL CONSULTING ENGINEERS

Suite 7, 3rd Floor, Station House, Railway Square, Waterford. X91 XK8Y

T: +353 (0)51 306 670

E: info@dceng.ie

W: www.dceng.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Pearse Douglas,** CEng, MIEI, BScEng, FConsEI (Managing Director)

TOTAL EMPLOYEES

20

ABOUT THE FIRM

Douglas Carroll Consulting Engineers Ltd was established in 2005 and has two directors: Pearse Douglas (Managing Director) and Ted Carroll (Director/Partner). Douglas Carroll provides a consultant mechanical and electrical engineering service and specialises in low energy design using innovative and sustainable design solutions. We focus on integration of services into the built environment.

ENGINEERING ACTIVITIES

Electrical, Mechanical, Lift Services, Health and Safety, Project Management, Project Supervisor Design Process (PSDP).

PROJECT TYPES

Healthcare Infrastructure, Residential, Government, Food Processing, Education, Manufacturing, Commercial, Retail, Conservation, Office Fit-out, Large Campus Mechanical & Electrical Infrastructure Upgrades.

DOWNES ASSOCIATES

Cashel Business Centre, Cashel Road, Kimmage, Dublin 12. D12 ET25

T: +353 (0)1 490 1611

E: admin@downesassociates.ie

W: www.downesassociates.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Gavin McHugh,** BE, BSc, MSc, MIStructE, CEng, FIEI, FConsEI

TOTAL EMPLOYEES

25

ABOUT THE FIRM

Downes Associates established in 1997, is a structural and civil engineering consultancy specialising in the delivery of quality civil and structural design solutions. The practice serves a wide range of private and public sector clients throughout Ireland and has extensive experience in the commercial, residential, industrial and institutional sectors. Downes Associates' core objectives are to provide quality structural designs that are functional, elegant, economic and innovative where possible together with quality drawings and details, as these are vital in communicating designs to the client, building contractor and other design professionals. To deliver these objectives Downes Associates employs a fully integrated team of motivated, skilled and highly qualified engineers and technicians. Downes Associates' client base is wide and varied. Since formation, the practice has worked with local authorities, semi-State organisations, institutional companies, private sector companies, private developers and international clients. The wide client base and the very different types of projects successfully completed reflect the varied nature of engineering demands placed on the skill and experience of the staff.

ENGINEERING ACTIVITIES

Civil & Structural.

PROJECT TYPES

Office building, Industrial Developments, Schools, Municipal Buildings, Residential Developments, Retail Developments, Data Centres, Temporary Works, Conservation and Historic, Healthcare.

EIRENG CONSULTING ENGINEERS LTD

3 Rogans Court, Patrick Street, Dun Laoghaire, Co. Dublin. A96 T0H2

T: +353 (0)1 663 8957

E: info@eireng.ie

W: www.eireng.ie

OFFICES

Cambridge House, Henry Street, Bath, BA1 IBT, UK
T: +44 (0) 1225 618 222

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Terry Sheehan,** BE, MSc,CEng, FIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

31

ABOUT THE FIRM

EirEng Consulting Engineers was formed by Terry Sheehan and Jeremy Lamb in 2011 to address the need for engineering services that concentrate on client value and the use of integrated design at reasonable cost. This is achieved through the extensive use of BIM on our projects. We are dedicated to providing our clients with tailor-made solutions that provide the optimal combination of operational efficiency and whole life cost. We build strong and long-lasting relationships with our clients and fellow professionals with whom we interact based on mutual respect and co-operation. We break problems down into clear and manageable components to ensure that all parties are involved. At EirEng we give the same care and attention to detail to a simple house extension as to a multi-million euro, E-commerce, automated facility. EirEng has offices in Dublin and operates in Ireland, the UK and the Middle East. Specialist projects outside of these locations are taken on an individual basis where our particular skills, knowledge or experience can bring our clients a competitive edge.

ENGINEERING ACTIVITIES

Civil Engineering, Structural Engineering, Environmental Engineering, Flooding Studies and Marine Structures, Sustainable Design, Temporary Works Design.

PROJECT TYPES

Commercial Buildings and Mixed Use Developments, Logistics and Retail Developments, E-Commerce and Data Centres, Healthcare, Conservation and Heritage, Educational Buildings at all Levels, Sports & Leisure, Hotels and Car Parks, Residential including House Extensions, Building and Site Repurposing, Civil Infrastructure and Masterplanning, Flooding and Environmental Studies.

ENGENUITI CONSULTING ENGINEERS

Main Street, Macroom, Co. Cork. P12 WN82

T: +353 (0) 26 68008

E: info@engenuiti.ie

W: www.engenuiti.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Robert White**, BEng, BSc(Hons), MEngSc, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

7

ABOUT THE FIRM

Founded in 2019, Engenuiti is the embodiment of over 70 years' collective experience in the architecture, engineering and construction sector. Our expertise shines in Civil & Structural Engineering, shaping projects from roads and bridges to energy initiatives. With a focus on meticulous design and adept project management, our team excels in delivering results that go beyond expectations.

ENGINEERING ACTIVITIES

Civil/Structural engineering, Architecture, Building Services Engineering, Project Management.

PROJECT TYPES

Education, Industrial/Commercial, Life Science, Residential.

ENGINEERING DESIGN CONSULTANTS LTD

4th Floor, River House, Blackpool Retail Park, Cork. R23 R5TF

T: +353 (0)21 428 0476

E: info@edcengineers.com

W: www.edcengineers.com

OFFICES

Dublin - Unit 4, Grand Canal Wharf, South Dock Road, Dublin 4. D04 X6P3
T: +353 (0)1 531 3693

Limerick – 64 O'Connell Street, Limerick City. V94 886V

Galway – Suite 5, Aivilo House, Unit 16 Oldenway Business Park, Ballybrit, Galway. H91 PF8K

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Conor McGinn**, BEng Hons MEng, CEng, MSc Management, FConsEI
- **Richard O'Farrell**, BE, BSc, FConsEI

TOTAL EMPLOYEES

98

ABOUT THE FIRM

With over two decades of engineering expertise, EDC holds the distinction of being the first Lloyds BIM Level 2 Certified Consultancy in the UK and Ireland. With offices strategically positioned in Cork, Dublin, Galway, Istanbul, Limerick and London, EDC is well-placed to deliver exceptional service to clients on projects spanning Ireland and beyond.

Having successfully delivered over 1500 projects across Ireland, the UK and Africa, EDC continually invests in its people and technology, allowing agile expansion of service offerings to cater to evolving client needs. Committed to sustainable design, EDC takes pride in designing low-energy, high-performance buildings and is a certified HPI assessor.

ENGINEERING ACTIVITIES

Mechanical and Electrical Engineering, Specialist Lighting Design, Lifts and Vertical Transportation, Green Certification including BREEAM, LEED & WELL. Building Energy Rating (BER) Assessors, SAP Calculations, TM52 IES Overheating Analysis for apartments and communal corridors, CF Analysis for corridor smoke extract systems, CFD Analysis for car park smoke extract systems, MEP Installation Drawings Package Solution, Building Information Modelling (BIM), Design Audit and Peer Review.

PROJECT TYPES

Commercial, Mixed-Use Development, Residential, Life-Sciences, Energy From Waste, Pharmaceutical, Education, Leisure, Hospitality, Government, Industrial, Data-Centres, Logistics and Warehousing, Conservation and Heritage, Retrofitting.

ENVIRONMENTAL DESIGN PARTNERSHIP

Block B1, Centre Point Business Park, Oak Road, Dublin 12. D12 FP96

T: +353 (0)1 409 2800

E: admin@edp-engineers.com

W: www.edp-engineers.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **James Fogarty,** CEng. FCIBSE, MCiarb/AccMed, MSLL, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

Environmental Design Partnership is a modern building services engineering consultancy practice operating for more than 25 years, providing professional, independent services across a broad range of commercial, industrial, leisure, retail, residential, educational, healthcare and energy consultancy sectors. The practice has grown steadily and has gained a reputation for providing innovative and cost-effective quality design solutions.

Our dynamic but personal management provides a thorough understanding and focus on development, design and project management, thus ensuring energy efficiency, life cycle and cost competitiveness for all our developments.

Our highly qualified staff provide experienced, strong technical input and have the necessary expertise for a complete and integrated building services design, this combined with our in-house quality assurance system results in high client satisfaction on projects.

EDP has experience of and is committed to, providing clients with the highest level of design on projects and delivering the projects within budget and programme.

ENGINEERING ACTIVITIES

Mechanical and Electrical Engineering, Heating/Ventilating and Air-Conditioning,Green Technology,Energy Renewables, Industrial Project Management, Fire & Security Engineering, Services Cost Control, Sustainable Engineering Design & Modelling, BER Assessors, DEC Assessors, LEED Assessors, Cost Management & Control, Performance Evaluation/Commissioning.

PROJECT TYPES

Educational Buildings, Hospitals / Healthcare Buildings, Factories / Production, Offices / Commercial, IT Facilities / Communications, Pharmaceutical Clean & Sterile Rooms, Electronic Manufacturing Clean Rooms, Hotels Leisure Centres, Shopping & Centres, Sports Stadia Facilities, Security Installations, Protected Structures / Historical Buildings, Fire fighting & Detection, Automatic Smoke & Environmental Control, Feature & Flood Lighting, Conservation Lighting.

FAHEY O'RIORDAN CONSULTING ENGINEERS

Shanaclogh, Cappagh, Cappawhite,
Co. Tipperary. E34 WD96

T: +353 (0)62 75929 / +353 (0)87 933 9582

E: john@force.ie

W: www.force.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **John Fahey,** BSc(Eng), MPM, MIEI, CEng, FConsEI

TOTAL EMPLOYEES

3

ABOUT THE FIRM

The practice was established in 2009 and offers a comprehensive range of professional consultancy services in the areas of mechanical and electrical engineering, project management and construction supervision. The practice has a successful track record the delivery of a wide range of projects across all sectors of the industry to both private and public sector clients.

ENGINEERING ACTIVITIES

Mechanical & Electrical, Heating Ventilation & Air Conditioning, Public Lighting, Value Engineering / M&E Cost Control, Project Management, PSDP Services.

PROJECT TYPES

Healthcare, Nursing Homes, Education, Schools, Commercial Offices, Industrial Facilities, Community Centres, Sports Centres, Hotel & Leisure, Retail / Mixed Use, Infrastructure / Business Parks, Public Realm / Urban Renewal, Residential, Condition Reports, Feasibility Studies, Water / Wastewater (M&E).

FALLON DESIGN

4 Riverwalk, Arklow, Co Wicklow. Y14 X051

T: +353 (0)40 220612

E: mark@fallondesign.ie

W: www.fallondesign.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Mark Fallon,** BEng (Hons) Building Services, CEng, DipPM, FConsEI

TOTAL EMPLOYEES

4

ABOUT THE FIRM

Fallon Design is primarily engaged in providing M&E consulting engineering services. Main engineering activities are mechanical and electrical, fire safety, sustainability, passive house design, water conservation, assisgned certifier for residential, mixed developments, commercial and industrial projects.

ENGINEERING ACTIVITIES

M&E, Fire Safety, Sustainability, Passive House Design, Water Conservation, Assigned Certifier.

PROJECT TYPES

Residential, Mixed developments, Commercial, Industrial.

FEARON O'NEILL ROONEY

12 Windsor Place, Lower Pembroke Street,
Dublin 2. D02 W566

T: +353 (0)1 676 6167

E: info@fonr.ie

W: www.fonr.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Jose Poveda,** BSc(Eng), CEng, FConsEI
- **Mark Gill,** BSc(Eng), CEng, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Fearon O'Neill Rooney has over 40 years' experience operating as civil and structural consulting engineers in the construction industry. The practice was established in 1970 by Dermot Fearon. John Rooney and Terry O'Neill subsequently joined the practice in 1973 and 1976 respectively. Jose Poveda joined the firm in 1992 and Mark Gill in 1997 and both became partners in the practice in 2010 following Terry O'Neill's retirement from the office. Terry is currently engaged as a consultant to the practice. Since the firm commenced practice in 1970, personal service has been an important and consistent objective. It has been our policy to employ a compact staff of high calibre with a commitment to self-development and a facility for working as a team. The practice provides an engineering consultancy service to a wide range of clients principally in the fields of civil and structural engineering. Our client base extends from private individuals to national and international private and public institutions. Although the majority of our work is in structural engineering, Fearon O'Neill Rooney has also offered a wide range of civil engineering services over the last 40 years. Fearon O'Neill Rooney encourages, where possible the use of construction techniques that are environmentally responsible and resource efficient, from the initial scheme design stage of each project and throughout the life of the building. Our design approach is based on a commitment to providing the very best civil and structural design service that meets the client's key requirements in terms of programme, cost and quality.

ENGINEERING ACTIVITIES

Civil and Structural Engineering, Project Management, Value Engineering, Sustainable Design, Conservation and Restoration, Expert Witness Services.

PROJECT TYPES

Hospitals, Apartments, Industrial Developments, Office Developments, Brewing Associated Work, Retail Parks/Shopping Centre, Restoration/Conservation, Schools, Churches/Cathedrals, Bridges and Bridge Refurbishment, Housing Developments, Planning Rezoning, Drainage Schemes.

FEHILY TIMONEY & COMPANY

Core House, Pouladuff Road, Cork. T12 D773

T: +353 (0)21 496 4133

E: info@ftco.ie

W: www.fehilytimoney.ie

OFFICES

Unit 3/4, Northwood House, Northwood Crescent, Northwood, Dublin, D09 X899
T: +353 (0)1 658 3500

Unit 6, Bagenalstown Industrial Park, Royal Oak Road, Muine Bheag, Co. Carlow, R21 XW81
T: +353 (0) 59 972 3800

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Eamon Timoney,** BE, CEng, FIEI, MICE, MCIWEM, FConsEI
- **Sinéad Timoney,** BE Civil, HDip HSWW, CEng MIEI, FConsEI

TOTAL EMPLOYEES

96

ABOUT THE FIRM

Established in 1990, Fehily Timoney and Company has grown to be one of the largest Irish owned civil and environmental engineering, scientific and planning consultancy.

Specialising in the delivery of complex projects for our global clients, FT offers a total project management solution, acting as consultants from initial project planning and feasibility through to detailed design, construction supervision, commissioning and handover.

ENGINEERING ACTIVITIES

Circular Economy, Civil Infrastructure, Environmental Science, Energy & Planning, Waste & Resource Management, Geotechnical Engineering, Urban Development, and Project Supervisor Design Process (PSDP).

PROJECT TYPES

Circular Economy, Waste & Resource Management, Environmental Science: Surveys and Assessments, Noise and Vibration Assessments, Environmental Monitoring, Modelling and Assessment (surface and groundwater, dust and particles, landfill gas etc.), Contaminated Land, Baseline Emission Inventories, Climate Mitigation, Climate Action Plans, Sustainable Assessments, Public Realm & GIS. Waste Facilities – Civic Amenities, Waste Transfer Facilities, Material Recovery Facilities, Historic Landfills, Leachate and Landfill Gas Management, Land Reuse Assessment, Wetland Specialists, Waste Characterisation, Planning Applications, EIARs, Anaerobic Digestion, Biomethane, Composting.

Energy and Planning: Renewable Energy; Onshore and Offshore Wind Energy Developments; Utility Scale Solar Energy Developments; Electrical Grid Infrastructure including, HV and MV Substations, Battery Storage and Ancillary Grid Infrastructure. Urban Development including Residential and Commercial Development.

Sustainable Infrastructure: Roads and Utility Infrastructure, Geotechnical Engineering, Stability Assessments, Bridges, Structures, Drainage, Greenways, Blueways, Industrial, Pharma, Bund and Lagoon Testing and Certification, Transportation (Bus, Rail, Metro), Residential, Ancillary Civil Works, Marine and Coastal and Wind Farms.

FRANK FOX & ASSOCIATES

7 Bank Lane, Waterford. X91 XA61

T: +353 (0)51 872 799

E: info@ffaeng.com

W: www.ffaeng.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Frank Fox,** CEng, Eur Ing, FIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

5

ABOUT THE FIRM

The firm was founded in 1982, initially providing a civil / structural consultancy service for the design, procurement and management of industrial and commercial projects in the south east. It expanded steadily to work on a variety of projects nationwide, the UK and also Europe. Its current client base covers a diversity of business and community interests.

ENGINEERING ACTIVITIES

Structural, Civil, Project Management, Health & Safety.

PROJECT TYPES

Airport, Pharmaceutical, Industrial, Retail & Commercial, Banks, Schools, Healthcare, Site Remediation, Residential Development, Sports and Leisure, Hotels.

FUREY CONSULTING ENGINEERS LTD

Olde World Cottage, Rathasker Road, Naas, Co. Kildare, W91PW68

T: +353 (0)45 486 229

E: info@fureyconsulting.ie

W: www.fureyconsulting.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Emmet Furey,** B.E., C.Eng, M.I.E.I., FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Furey Consulting Engineers is based in Naas, Co. Kildare. We are consultants to all areas of construction. Furey Consulting Engineers was established in 1994, as an engineering consultants firm to provide services the design of all aspects of construction including drainage, structural engineering, site supervision, inspections and surveys. We have grown considerably from our original concept and have expanded into full design and project management.

While we still are proud to provide a very high quality service in structural and civil engineering, our expansion into architectural and project management is still a major aspect of the services being offered. In the current climate this service has been used by our clients to address specific site problems and, working with them and the local authorities, we have successfully found solutions that have been of major benefit to our clients.

We also work in association with a number of specialist service companies to offer a wide range of integrated services where the combination of the resources allows us offer a comprehensive one-stop shop for all project management requirements.

ENGINEERING ACTIVITIES

Structural and Civil Engineering, Drainage, Site Supervision, Inspections and Surveys, Full Design and Project Management, Architectural and Project Management.

PROJECT TYPES

Sports Retail Outlets, Housing Scheme Development, Project Engineering, Project Management.

GARLAND

Garland House, 28-30 Rathmines Park,
Dublin 6. D06 F8Y1

T: +353 (0)1 496 4322

E: info@garlandconsultancy.com

W: www.garlandconsultancy.com

OFFICES

Riverfront, Howley's Quay, Limerick. V94 W3F1
T: +353 (0)61 319 708

Suite 11B, The Atrium, Maritana Gate, Canada Street,
Waterford. X91 WR40
T: +353 (0)51 876 511

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Kevin Rudden,** BScEng, DipEng, DLS, CEng, FIEI, Eur Ing, FConsEI
- **Brian Kavanagh,** BE, DipProjMgmt, CEng, FIEI, Eur Ing, FConsEI
- **Caimin Jones,** BE, CEng, FIEI.Eur Ing, FConsEI
- **Brian Lahiff,** BE, PGradDip, CEng, MIEI, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Tommy Morey,** BE, CEng, MIEI, RConsEI
- **Simon Dunne,** BEng, MIStructE, MIEI, CEng, RConsEI

TOTAL EMPLOYEES

45

ABOUT THE FIRM

Founded in 1937, Garland is an international consulting engineering firm that has worked in over 30 countries worldwide. We provide a full range of civil and structural consulting engineering services, starting from feasibility study to detailed design and construction administration. We also offer specialist services in construction safety management, project management and planning, as well as social and economic development. Our highly experienced teams are renowned for prestigious work within the healthcare, educational, infrastructure, commercial and residential sector.

ENGINEERING ACTIVITIES

Structural, Industrial, Planning, Civil, Project Management, Coastal Protection, Refurbishment, Environmental, Marine, Pollution Traffic, Geotechnical, Fire, Health and Safety, Assigned Certifier, Project Supervisor Design Process (PSDP).

PROJECT TYPES

Airport, Civil, Coastal Protection, Commercial, Educational, Healthcare, Hotels, Industrial, Public, Residential, Private Dwellings, Refurbishment, Retail, Sports and Leisure.

GDCL CONSULTING ENGINEERS LTD

Scope House, Whitehall Road West, Perrystown,
Dublin 12. D12 K8PP

T: +353 (0)1 563 8342

E: info@gdalyconsulting.com

W: www.gdalyconsulting.com

OFFICES

75 Shelton Street, Covent Garden, London WC2H 9JQ
T: +44 (0)20 3286 1540

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Gregory Daly,** MBA, BSCEng, DipEng, Dip Highway & Geotech Eng, CEng, MIStructE, MIEI, DipArb, MCIArb, FConsEI

TOTAL EMPLOYEES

12

ABOUT THE FIRM

GDCL Consulting Engineers provide civil/structural engineering and project management services to a wide range of local and international clients both in the private and public sectors. GDCL Consulting Engineers has a proven track record of successful delivery over 20 years across a wide variety of construction projects including commercial, residential/housing, process/ pharmaceutical, leisure/process, refurbishment and renewables. We have the capability to produce fully integrated BIM models using the latest software/drawing office technology, including Revit.

ENGINEERING ACTIVITIES

Structural Engineering Design: New build and Refurbishment Projects - all materials including reinforced concrete, structural steelwork, precast concrete, masonry, timber. Structural Survey, Temporary Works Design, Structural Strengthening, Blast Resisting Design, Seismic Engineering, Design for Vibration.

Civil Engineering Design: Surface Water Drainage, Foul Drainage, Wastewater Engineering, GMP Containment, Roads, Site Specific Flood Risk Assessment, Traffic Engineering, Earthworks Control, Geotechnical Engineering, Coastal Protection.

Project Management: Design Team Management, Client Representation Contract Administration, Conceptual Design Studies, Feasibility Studies, Code Compliance Specialists, Building Control Regulations, (BCAR / Assigned Certifier). Dispute Resolution, Arbitration (UNCITRAL Model Law), Conciliation, Mediation, Adjudication, Expert Witness, Claims Consultancy.

PROJECT TYPES

Commercial, Residential/Housing, Process/Pharmaceutical, Leisure /Process and Renewables.

GORDON WHITE CONSULTING ENGINEERS

1st Floor, 8 Riverwalk, Lake Drive, Citywest Campus, Dublin 24, D24 V50F

T: +353 (0)1 479 6396

E: mail@gwce.ie

W: www.gwce.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Gordon White,** BA, BAI, HDipEnvEng, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

Gordon White Consulting Engineers was established in May 2016 and is based in modern offices at Riverwalk Plaza in the heart of Citywest Business Campus. Gordon White is a Chartered Engineer with over 25 years' experience in civil engineering design for residential and commercial developments.

ENGINEERING ACTIVITIES

Civil Engineering Design for Residential and Commercial Developments, Sustainable Drainage (SuDS) Design, Civil Engineering Design for Public Realm, Parks & Sports Pitches, Legal Mapping, Topographic Surveys and Digital Terrain Models, PSDP Services.

PROJECT TYPES

Residential Developments from a single house or extension to developments of many hundreds of houses, Commercial Developments from fit-outs to multi-storey office developments, Parks and Pitches, Legal Maps Declarations of Identity Boundary surveys, Water and Wastewater Treatment Plants.

HANLEY PEPPER

Owenstown House, Fosters Avenue, Blackrock, Co. Dublin. A94 N6D8

T: +353 (0)1 283 2967

E: info@hanleypepper.ie

W: www.hanleypepper.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Joseph Ryan,** BScEng, DipEng, CEng, MIStructE, MIEI, FConsEI
- **Kevin Pepper,** CEng, Eur Ing, MIEI, MIStruct, FConsEI
- **Michael Jackson,** BScEng, DipEng, CEng, MIStructE, MIEI, FConsEI

TOTAL EMPLOYEES

18

ABOUT THE FIRM

Established in 1987 as a specialist consultancy in civil and structural engineering. Hanley Pepper provides service to public and private clients. Projects completed for national and international organisations in Ireland and throughout Europe.

ENGINEERING ACTIVITIES

Structural, Civil, Project Management, Conservation, Project Feasibility Studies, Site Due Diligence Investigations, Sustainability, Legal Representation, Project Supervisor Design Process, Assigned and Ancillary Certification.

PROJECT TYPES

Data Centres, Healthcare, Hotels, Retail, Corporate Office Developments, Housing, Industrial, Sports & Recreation, Educational, Penal, Roads, Drainage, Bridges, Military Defence, Conservation, Masterplanning, Temporary Works Design, Expert Reports, Site Investigations.

HEAVEY KENNY ASSOCIATES

6 Liosban Business Park, 23E First Floor,
Tuam Road, Galway. H91 E9KN

T: +353 (0)91 566 004 / +353 (0)91 566 004

E: admin@heaveykennyassociates.ie

W: www.heaveykennyassociates.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **John Carr,** CEng, MCIBSE, MIEI, FConsEI

TOTAL EMPLOYEES

4

ABOUT THE FIRM

Founded in 1989, the company provides mechanical and electrical building services design, monitoring and project management to a high level in the private and public sectors.

ENGINEERING ACTIVITIES

Mechanical and Electrical, Heating, Ventilation, Air-Conditioning, Sustainable Energy, Project Management, Cost Control.

PROJECT TYPES

Hospitals, Colleges, Retail, Hotels, Shopping Centre, Office Development, Industrial Developments, Schools, Nursing Homes, Heritage Buildings, Churches.

HENDRICK RYAN + ASSOCIATES

10 Priory Hall, Stillorgan, Co. Dublin. A94 K735

T: +353 (0)1 283 4866

E: info@hra.ie

W: www.hra.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Peter Ryan,** BA, BAI, CEng, FIEI, MIStructE, MICE, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Formerly Brian Hendrick + Associates, which was established in 1988.

ENGINEERING ACTIVITIES

Structural, Civil, Project Management, Conservation, Project Feasibility Studies, Building Assessment and Remediation, Loss Assessing and Loss Adjusting Investigations, Expert Witness, Legal Representation, Project Supervisor Design Process, Assigned and Ancillary Certification.

PROJECT TYPES

Commercial Developments, Housing Developments, Hotels, Site Development, Industrial Buildings, Apartments, Educational & Health, Leisure, Restoration & Refurbishment, Multi-Storey Car Parks, Structural Assessments, Forensic Engineering.

HOMAN O'BRIEN ASSOCIATES

89 Booterstown Avenue, Blackrock,
Co. Dublin. A94 P2C2

T: +353 (0)1 205 6300

E: info@homanobrien.ie

W: www.homanobrien.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Brian Homan,** CEng, BScEng(Hons), DipProjMgt, MIEI, MCIBSE, FConsEI
- **Simon O'Brien,** CEng, BScEng(Hons), MA, Eur Ing, MIEI, MCIBSE, FConsEI
- **Gerard Keating,** C&G, FTC, CEng, FCIBSE, FIHEEM, MIEI, FConsEI

TOTAL EMPLOYEES

28

ABOUT THE FIRM

Homan O'Brien is a leading Irish consulting engineering practice specialising in the design and management of mechanical, electrical and lift services to all building types. The company has grown through 60 years of experience in the building industry by providing a quality professional service to all projects and clients on the domestic and international market. We have an ever expanding and dedicated workforce of highly qualified engineers available to undertake new projects.

Homan O'Brien implement an integrated Quality, Health & Safety and Environmental Management System. Our management systems are registered with NSAI to the following standards;
• ISO 9001:2015 Quality Management System
• ISO 14001:2015 Environmental Management System
• ISO 45001:2018 Occupational H&S Management System.

We are affiliated to a number of professional bodies including Engineers Ireland, Association of Consulting Engineers of Ireland, Chartered Institution of Building Services Engineers, American Society of Heating, Refrigeration and Air-Conditioning Engineers, Institute of Healthcare Engineers and Estate Managers and the European Federation of National Engineering Associations.

ENGINEERING ACTIVITIES

HVAC, Low Energy Building Design, Building Dynamic Simulation, 3D Building Information Modelling (BIM), BCAR Inspection / Reporting, Vertical Transport Analysis and Design, Building Energy Audits, Expert Witness, Due Diligence.

PROJECT TYPES

Education, Hospitals / Healthcare, Offices Developments / Fit Outs, Hotels, Residential, Mixed-use Developments, Commercial, Industrial, Shopping Centres, Historic Refurbishment, Master Planning.

HORGANLYNCH CONSULTING ENGINEERS (HLCE LIMITED)

Tellengana, Blackrock Road, Cork. T12 HP7R

T: +353 (0)21 493 6100

E: cork@horganlynch.ie

W: www.horganlynch.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Karel Murphy,** BEng, CEng, MIStructE, MIEI, FConsEI
- **Niall Fitzgerald,** BE CEng MIEI, FConsEI

TOTAL EMPLOYEES

17

ABOUT THE FIRM

Established in Cork 1969. Dublin office opened in 1973. HLCE Ltd. has an ISO 9001 Quality Management Certification: 2015.

ENGINEERING ACTIVITIES

Civil, Structural, Project Management.

PROJECT TYPES

Stadia Sports & Recreation, Pharmaceutical Industry, Office Developments, Museums, Conservation, Art Galleries, Education Facilities, Healthcare, Medical Devices, High Density Housing, Site Development, Commercial Mixed Use, Residential.

HUGH MUNRO & CO LTD

Alexandra House, Jetty Road, Dublin Port,
Dublin 1. D01 E9PO

T: +353 (0)1 855 4387

E: ciaran.wallace@hughmunro.ie

W: www.hughmunro.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Ciaran Wallace,** BE, MIE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

Hugh Munro & Co. Ltd is a specialist engineering consultancy, established in 1976, that delivers a wide range of services in the energy, pharmaceutical and waste water sectors. The time we have been working in these sectors has enabled us to build up a vast experience and knowledge of them, and has given us a well-established profile. We use our local knowledge of the Irish market, especially our proximity to and contact with relevant stakeholders, to get things done. At Hugh Munro & Co. Ltd. we develop a personal understanding of our clients' needs and tailor our service delivery to match those requirements.

Hugh Munro & Co. Ltd. has a commitment to quality, environmental management and health and safety in the management and design of projects for which we are awarded:

- Quality Assurance Certificate under I.S. EN ISO 9001:2015 from the National Standards Authority for design and project management from client's brief to final documentation.
- Environmental Management Certificate under I.S. EN ISO 14001:2015 from the National Standards Authority for promoting environmental management throughout our business to continually improve efficiency of our operations.
- Occupational Health & Safety ISO 45001:2018 from the National Standards Authority for providing services which reflect our earnest attention to the provision of design safety, health and welfare.

These certifications acknowledged the formalisation of procedures, which are an integral part of Hugh Munro & Co's commitment to the achievement of excellence and our policy towards quality, safety, health, welfare and environmental management. The maintenance of which is assured not only through regular inspections by the NSAI but also through ongoing in-house audits conducted by Hugh Munro & Co's quality manager.

ENGINEERING ACTIVITIES

Front End Engineering Studies, Planning, Project management, Health & Safety including PSDP and PSCS, Environmental, Process, Mechanical, Tankage, Electrical & Instrumentation, Control & Automation, Civil & Structural, Firefighting, Technical Assistance and Advice, Reports and Assessments including EPD – COMAH – Hazop.

PROJECT TYPES

New and Upgrading Petroleum Depots & Marine Terminals including Loading Facilities and Automation, Tanks including Secondary Containment, Aviation Fuel Depot & Hydrant System, Fire-Fighting Systems at Jetties and Terminals, Bitumen Plants, Pipelines, Turnkey Tank Assessment and Repair, Wastewater Treatment Plant Upgrade.

JAE ENGINEERING LTD

Guinness Enterprise Centre, Taylor's Lane,
Dublin 8. D08 WY02

T: +353 (0)87 257 1800 / +353 (0)86 788 0971

E: jennis@jaeeng.com

W: www.jaeengineering.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Aislinn Tate,** CEng, MIEI, MCIBSE, BScEng (Hons), FConsEI
- **Joseph Ennis,** CEng, FCIBSE, FIEI, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

JAE Engineering Ltd. is a specialist consulting engineering practice offering unique engineering solutions to the construction, manufacturing industry and energy sector. The company was formed early in 2012 and has established a reputation relating to specialist engineering solutions for building design and building services. The practice has been set up as a specialist engineering enterprise by Joseph Ennis and Aislinn Tate designed to provide strategic advice to clients. It is a solution-driven company, who strive to achieve its clients' goals with integrity through a knowledge of engineering and construction.

ENGINEERING ACTIVITIES

Building Services Strategic Design, Due Diligence/Building Surveys, Value Engineering, Peer Reviews of Building Services Documentation, Client Liaison to design and construction teams, LEED, BREEAM & WELL Engineering Expertise and assistance in the road mapping to certification, Energy and Sustainability, Building Services Insurance Claims Advice, Technical Advisor for clients, Dispute Resolution-Engineering Systems, Project Audits, Building Services Design Services.

PROJECT TYPES

Commercial, Industrial & Process, Business & Retail, Power and Energy Projects, Health & Laboratories.

J.B. BARRY & PARTNERS LTD

Classon House, Dundrum Business Park,
Dundrum Road, Dublin 14. D14 T9T0

T: +353 (0)1 485 1400

E: info@jbbarry.ie

W: www.jbbarry.ie

OFFICES

3A Eastgate Road, Eastgate, Little Island, Co. Cork. T45 KH74
T: +353 (0)21 452 4418

Unit 14C, N5 Business Park, Moneen Road, Castlebar, Co. Mayo.
F23 E283
T: +353 (0)94 903 8013

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Liam Prendiville,** BE, Dip Project Management, Dip Highways and Geotechnical Engineering, CEng, FIEI, FConsEI
- **Anne Marie Conibear,** BE, CEng, MICE, FIEI, Masters in Business Practice, FConsEI
- **Maurice O'Donoghue,** BE, Eur Ing, CEng, FIEI, Dip PM, FConsEI
- **Eamon Daly,** BE, MEngSc, CEng, MIEI, FConsEI
- **Peter Morehan**, BE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

195

ABOUT THE FIRM

Since our establishment in April 1959, J.B. Barry and Partners Limited has designed innovative and sustainable projects in water, transportation and structural engineering. As well as design excellence, our projects take into account the environment, planning risk, sustainability principles, energy optimisation and management, health and safety and value engineering. Our clients include government departments, utility companies, contractors, developers, private clients as well as some international financial institutions.

Barry Transportation Ltd (formerly Halcrow Barry Ltd and CH2M Barry Ltd.) was established in 2000. J.B. Barry and Partners is also a parent firm of BeMRA Engineering Limited. J.B. Barry and Partners is now part of the Egis Group.

ENGINEERING ACTIVITIES

Civil, Structural, Process, Mechanical, Electrical, Traffic, Transportation, Environmental and Geotechnical Engineering; Quantity surveying, Cost Estimates and Cost Control; Planning, Licencing and EIAR; Project and Programme Management; Health and Safety/PSDP; Contract Preparation, Administration and Dispute Resolution.

PROJECT TYPES

Water Supply Networks, Water Treatment Plants, Wastewater Collection Systems, Wastewater Treatment Works, Sludge Treatment, Sea Outfalls, Renewables, Solar/PV & Windfarms, Flood Risk Assessments, Flood Relief Schemes, Tunnels, Roads, Highways, Bridges and Culverts, Motorway Service Areas, Traffic, Rail, Rapid Transit, Active Travel/Greenways, Road Safety Audits, Commercial, Institutional, Industrial and Residential Buildings and Site Development Works.

JENNINGS O'DONOVAN & PARTNERS LTD

Head Office: Finisklin Business Park, Sligo. F91 RHH9

T: +353 (0)71 916 1416

E: info@jodireland.com

W: www.jodireland.com

OFFICES

Dublin

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **David Kiely,** BE, MSc, FIEI, CEng, MICE, Eur Ing, FConsEI
- **Joseph Healy,** BEng, DipWEng, CEng, Eur Ing, FIEI, TechIOSH, FConsEI
- **Audrey Phelan,** BE, MEngSc, CEng, FConsEI
- **John McElvaney,** BSc (Eng), DipStructEng, PG Dip PM, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

45

ABOUT THE FIRM

Established in 1950, the business focus areas of the company are Ireland, UK and the EU pre-accession countries. The company is ISO 9001, ISO 14001 and ISO 45001 accredited and certified as an accredited employer by Engineers Ireland for the CPD Programme.

ENGINEERING ACTIVITIES

Civil, Structural, Commercial Development, Environmental, Water Supply, Renewable Energy, Pollution Control, Traffic, Wastewater, Project Management, Architectural, Road Design, Health & Safety, Environmental Impact Statements, Planning Applications/ Planning Compliance, Assigned Certifier, Project Supervisor Design Process.

PROJECT TYPES

(Water Sector) – Water Supply Schemes, Sewerage Schemes, Drainage Schemes, Flood Risk Assessments. (Civil & Structural Design) – Industrial, Education, Commercial, Health Sector, Hotel & Leisure, Housing. (Renewables) – Renewables Planning, Renewables Construction, Wind Energy, Solar Energy, Battery Storage, Hydrogen. (Leisure and Tourism) – Leisure Amenities, Greenways, Blueways, Active Travel, Road Design, Sports Facilities.

J.J. CAMPBELL & ASSOCIATES

Unit F1 Nutgrove Office Park, Rathfarnham,
Dublin 14. D14 A895

T: +353 (0)1 298 0538

E: info@jjc.ie

W: www.jjc.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **John J. Campbell,** BE, CEng, MIEI, PEng Canada, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

J.J. Campbell & Associates was established in 1995.

ENGINEERING ACTIVITIES

Civil, Structural and Ocean Energy.

PROJECT TYPES

Office/Retail/Housing/Apartments/Hotels, Structural Alterations to Old Buildings/, Protected Structures, Specialised Glazing, Gantry/Cranes/Lifting gear, Pyrite Investigations, Analysis of Sewer Network Condition, Earthquake Analysis, Marine/Ocean Energy, Environment, Health & Safety.

JODA ENGINEERING CONSULTANTS

Ballycurreen House, Ballycurreen, Cork, T12 P4AY

T: +353 (0)21 454 4244

E: engineers@joda.ie

W: www.joda.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Jerome O'Donovan,** BE, CEng, MEngSc, MIEI, MICE, MIStructE, FConsEI
- **Paul Murphy,** BE, MSc, CEng, MIEI, MIStructE, HDipMM, FConsEI

TOTAL EMPLOYEES

16

ABOUT THE FIRM

JODA Engineering Consultants is a multidisciplinary practice providing engineering consultancy services related to buildings and structures, site development and infrastructure services.

The practice was established in 1961 and initially provided civil/structural consultancy. In 1972 the firm included mechanical and electrical building services and later expanded to include project management for industrial and other projects. The practice became a limited company in 1995.

ENGINEERING ACTIVITIES

Civil, Structural, Mechanical, Electrical, Project Management, Geotechnical.

PROJECT TYPES

Industrial Projects, Office Developments, Retail Developments, Hospitals, Hotels, Educational Buildings, Institutional Buildings, Bridges, Road Structures, Marine Structures, Residential Developments, Leisure Projects, Remedial Works, Fire Damage and Flood Damage Assessment and Remediation.

J.V. TIERNEY & COMPANY LTD

The Tannery, 53-56 Cork Street, Dublin 8. D08 P92R
T: +353 (0)1 421 4900
E: mail@jvtierney.ie
W: www.jvtierney.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Joe Lee,** DipEng, CEng, FCIBSE MIEI, MASHRAE, FConsEI
- **Stephen Walsh,** CEng, BEngTech, MIEI, FIHEEM, FConsEI
- **Colm Saul**, CEng, B.Sc Building Services Eng, Dip BS Eng, FConsEI
- **Andrew Clifford**, CEng, CIBSE Affiliate, B.Sc BS Eng, FConsEI
- **Rory Burke**, BE, CEng, FConsEI

TOTAL EMPLOYEES

41

ABOUT THE FIRM

J.V. Tierney & Co. was established in 1948 and is the market leader in consulting engineering design in the field of mechanical, electrical and sustainable engineering in the built environment. Our specialist subsidiary, JVTE, offers environmental and sustainable design solutions, daylight/sunlight analysis, net zero carbon solutions and energy efficient design (EED) analysis. We are certified Home Performance Index (HPI) Assessors, Building Energy Rating (BER) Assessors and accredited BREEAM Assessors and LEED Commissioning Agents (CxA) with a number of our projects achieving the international environmental standards of BREEAM 'Excellent' and LEED 'Platinum' accreditation. The company has become synonymous with the highest quality design concepts and is accredited to the following NSAI Management Systems – I.S. EN ISO 9001-2015 Quality Standard, I.S. EN 14001:2015 Environmental Standard and OHSAS 45001:2018 Occupational Health and Safety Standard.

ENGINEERING ACTIVITIES

Mechanical & Electrical and Sustainable Engineering Design, Daylight/Sunlight Analysis, Net Zero Carbon Solutions, Energy Efficient Design (EED) Analysis, Comfort Analysis / Natural Ventilation with Computer Modelling, BREEAM Assessors, BER Assessors, Home Performance Index (HPI) Assessors, LEED Assessors, Heating / Ventilating and Air-Conditioning, Medical Gas Design, Environmental, Project Management, Fire & Security Engineering, ICT & Communication Systems, Vertical Transportation Engineering, Services Cost Control, 3D Building Information Modelling (BIM), BCAR Inspection / Reporting.

PROJECT TYPES

Educational Buildings, Hospitals / Healthcare Buildings, Offices / Commercial / Light Industrial, Residential, Hotels & Leisure, Retail, Exhibition Spaces, Sports Stadia Facilities, Institutions / Secure Centres, Courtroom Facilities, Protected Structures / Historical Buildings.

JWHA

2-4 Merville Road, Stillorgan, Co. Dublin. A94 E3F8
T: +353 (0)1 212 1813 / 212 1816 / 212 1817
E: info@jwha.ie
W: www.jwha.ie

OFFICES

4 Sommerville, Reeves Wood, Douglas, Cork. T12 N903
T: +353 (0)21 429 3160

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Joseph W. Hogan,** CEng, FCIBSE, MIEI, MASHRAE, MIPM, ACIArbI, FConsEI

TOTAL EMPLOYEES

3

ABOUT THE FIRM

J.W.H.A. Consulting Engineers offers complete design and project construction management in the field of project management, procurement, structural and mechanical and electrical services. The practice has been in existence since 1980 and has completed numerous prestigious projects. Working from offices in Dublin and Cork, we serve a large base in all client sectors. The practice is Quality Assured to ISO 9001.

ENGINEERING ACTIVITIES

Building Services, Project Management, Mechanical, Electrical, Structural, Civil, BER, Pollution Control, Noise Assessment, Insurance Claims, Legal Reports, Personal Injuries Investigations, Mediation, Expert Witness, Loss Assessment,Traffic Accidents, Information Technology, Lighting Levels, Electronic, Energy and Power, Energy Audits, Health and Safety, Project Supervisor Design Process (PSDP).

PROJECT TYPES

Business & Retail Units, Commercial Development, Churches/ Cathedrals, Hospitals/Healthcare, Industrial Developments, Leisure Developments, Residential Developments, Educational, Office developments, Heritage, Hotels, Nursing Homes.

KAVANAGH MANSFIELD & PARTNERS

Sommerville, Dundrum Road, Dundrum, Dublin.
D14 WF24

T: +353 (0)1 660 6966

E: kmp@kmp.ie

W: www.kmp.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **James Mansfield,** CEng, BE, FIEI, MIStructE. FConsEI
- **Niall Clarke,** BSc, DipEng, CEng, MIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

10

ABOUT THE FIRM

Kavanagh Mansfield & Partners has a broad base of experience providing completely independent structural and civil engineering professional advice to public sector and private sector clients. The practice has evolved over the last 30 years and is highly committed to working towards design excellence allied to cost effectiveness. Kavanagh Mansfield & Partners has been involved closely in the development of standards for the industry in fields such as code development and health and safety regulations. Kavanagh Mansfield & Partners is the trading name of Piconsult Ltd.

ENGINEERING ACTIVITIES

Civil and Structural.

PROJECT TYPES

Factories & Warehousing, Hospitals & Health Care, Sports Complex, Artificial Playing Surfaces, Office Developments, Schools & Colleges, Housing & Apartments, Estate Development, Building Restoration, Protected & Heritage Structures, Telecommunication Buildings, Legal Work, Pyrite Inspections, Research and Development.

KILGALLEN & PARTNERS CONSULTING ENGINEERS LTD

Kylekiproe, Well Road, Portlaoise, Co. Laois.
R32 P 668

T: +353 (0)57 866 2860

E: info@kilgallen.ie

W: www.kilgallen.ie

OFFICES

Unit 3, Danville Business Park, Kilkenny. R95 VH33
T: +353 (0)56 770 1090

4th Floor, The Pinnacle, 160 Midsummer Boulevard, Milton Keynes, Buckinghamshire MK9 1FF

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Morgan Kilgallen,** BE, CEng, Eur Ing, FIEI, FCIArb, FConsEI
- **Niall O'Callaghan**, BSc(Eng), DipEng, CEng, Dip Proj Man, MIEI, FConsEI

TOTAL EMPLOYEES

17

ABOUT THE FIRM

Founded in 1998, Kilgallen and Partners specialise in the design and management of building and civil engineering projects including road schemes, flood relief schemes, renewable energy projects and buildings for the commercial, retail, educational, residential, pharmaceutical and manufacturing markets. Our clients are drawn from across the public and private sectors. The company is CPD accredited by Engineers Ireland and is ISO 9001 accredited by NSAI. Operating out of offices based in Portlaoise and Kilkenny and with a sister company in the UK, we have a proven and established track record of successful delivery from concept stage through to project handover.

ENGINEERING ACTIVITIES

Civil, Structural, Roads, Traffic Impact Assessments and Mobility Plans, Design of Temporary Traffic Management Systems, Flood Studies & Flood Risk Assessments, Assigned Certifier, Project Supervisor Design Process (PSDP), Geotechnical Engineering, Planning, Site Development, Building Assessment and Refurbishment.

PROJECT TYPES

Public Sector (Roads & Associated Infrastructure), Active Travel, Education, Drainage, Flood Risk Assessments, Flood Mitigation), Design & Build Projects, Temporary Works, Renewable Energy, Pharmaceutical, Manufacturing, Residential, Commercial, Industrial, Office, Leisure, Heritage, Conservation & Refurbishment, Industrial and Business Parks, Transport Depots.

KILLIAN CONSULTING ENGINEERS

Brideswell Street, Dublin Road, Athlone,
Co. Westmeath.

T: +353 (0)90647 7261

E: info@jkillian.ie

W: www.jkillian.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **John Killian,** BE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

3

ABOUT THE FIRM

Killian Consulting Engineers was established in 2001. The company provides structural and civil engineering services to a wide range of clients throughout Ireland. The firm delivers design, project management and construction supervision services to a range of clients in the industrial, commercial and residential sectors.

ENGINEERING ACTIVITIES

Civil, Structural, Project Management, Assigner Certifier, Project Supervisor Design Process.

PROJECT TYPES

Industrial, Commercial, Medical Devices, Residential.

LANGAN CONSULTING ENGINEERS

Leeson Enterprise Centre, Altamont Street, Westport,
Co. Mayo. F28 ET85

T: +353 (0)98 68961

E: info@langaneng.ie

W: www.langaneng.ie

OFFICES

Galway Technology Centre, Mervue Business Park, Mervue,
Galway. H91 D932
T: +353 (0)91 396 335

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **James Langan,** BE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

10

ABOUT THE FIRM

Langan Consulting Engineers (LCE) is a specialist civil, structural and marine design consultancy. We have a proven track record in the delivery of civil infrastructure, marine, energy projects in Ireland and the UK. We provide efficient, effective and pragmatic engineering design solutions.

ENGINEERING ACTIVITIES

Structural, Civil, Marine & Coastal, Hydrological/ Hydrogeological, Flood Risk Assessment, Drainage and Water Services, Geotechnical, BIM, Contractor Design including Temporary Works Design and Design Checking/Verification.

PROJECT TYPES

Marine (Ports, Harbours & Coastal), Energy (Oil & Gas, Renewables), Flood Management and Alleviation, Onshore Pipelines, Subsea Pipelines and Marine Outfalls, Drainage Works, Roads, Residential and Commercial Developments, Transport, Education, Healthcare, Aviation.

LED (LYNCH ENGINEERING DESIGN)

22 French Furze Grove, Kildare Town,
Co. Kildare. R51 R993

T: +353 (0)86 806 5273

E: david@lynchengineeringdesign.com

W: www.lynchengineeringdesign.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **David Lynch,** BSc(Eng), DipEng, CEng, PGradDip(Fire Safety), FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

LED was established in 2013 by David Lynch, following two years site and 14 years design experience.

ENGINEERING ACTIVITIES

Civil & Structural.

PROJECT TYPES

Residential, Commercial, Retail, Local Authority, Insurance, Legal.

MALACHI CULLEN CONSULTING ENGINEERS LTD

8 Centre Court, Blyry Business & Commercial Park,
Athlone, Co. Westmeath N37 A710

T: +353 (0)90 642 0364

E: info@mcullen.ie

W: www.mcullen.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Pádraic Keena,** BA, BAI, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Malachi Cullen has been in practice as a consulting engineer since 1970. Malachi Cullen and Partners was formed in 1986 from the well-established branch office of Stanislaus Kenny and Partners, Athlone, founded by Malachi Cullen in 1971. Having merged with the international, multi-disciplinary consultancy White Young Green in 2007, the company was subsequently re-established as an independent entity in 2010 under the new name of Malachi Cullen Consulting Engineers Ltd (MCCE). MCCE continues its long tradition of providing professional, civil, structural and environmental engineering as well as a project management service in the midlands.

ENGINEERING ACTIVITIES

Civil, Structural, Environmental, Project Management, Health and Safety, Project Supervisor Design Process (PSDP), Planning Permissions, Fire Safety Certificates, Disability Access Certificates.

PROJECT TYPES

Industrial and Commercial Developments, Educational – Primary / Secondary / Third Level Institutions, Medical / Primary Care, Residential Developments, Hotel and Leisure Facilities, Golf Clubs, Churches, Libraries, Public Amenities, Site Development Works, Refurbishments, Remedial Works, Conservation, Temporary Works Design, Conditional Surveys, Fire Safety Engineering.

MALACHY WALSH AND PARTNERS (MWP)

Park House, Mahon Technology Park, Bessboro Road, Blackrock, Cork, T12 X251

T: +353 (0)21 453 6400

E: info@mwp.ie

W: www.mwp.ie

OFFICES

Blennerville, Tralee, Co Kerry, V92 X2TK
T: +353 (0)66 712 3404

The Elm Suite, Loughmore Centre, Raheen Business Park, Limerick, V94 R578
T: +353 (0)61 480 164

2 Exchange Tower, 1-2 Harbour Exchange Square, London, E14 9GE, UK.
T: +44 (0)20 7253 0893

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Peter Fay,** BSc(Eng), Dip Struct Eng, C Eng, MIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

140

ABOUT THE FIRM

The practice is a multi-disciplinary, diversified engineering and environmental consultancy and was founded in 1967. It has expertise in civil, structural, mechanical and electrical engineering, environmental and waste management engineering.

ENGINEERING ACTIVITIES

Building Structures: Civil Engineering Works, Roads, New Bridges and Assessment of existing, Rehabilitation Work to existing structures, Commercial. Industrial projects: Pharmaceutical, Harbour and Coastal Works; Housing/Apartments; Water Services; Fire Engineering; Transportation, Building Services – Mechanical & Electrical; Renewable Energy, EIA/EIS, SEA; Planning Policy & Legislation.

PROJECT TYPES

Pharmaceutical, Healthcare, Airport, Commercial, Bridges, Roads, Industrial, Waste Management, Wind Farms and Pumped Energy Storage, Sewerage Schemes, Schools/Colleges, Water Services, Sports Facilities, Transportation, Conservation.

MALONE GROUP

239 Blanchardstown Corporate Park, Ballycoolin, Dublin. D15 KV21

T: +353 (0)1 866 5890

E: fergus.whelan@malonegroup.com

W: www.malonegroup.com

OFFICES

CIDO Innovation Centre Charlestown Road Craigavon, BT63 5PP
T: +44 28 3814 0026

Skyline Court, Third Avenue Centrum 100 Burton-on-Trent, DE14 2BZ
T: +44 1283 688083

120 East Beaver Creek Road Suite 200 Richmond Hill, ON L4B 4V1
T: +44 1289 635 2442

445 Broad Hollow Road Suite CL 25 Melville NY 11747
T: +44 1631 629 5050

38-40 Osogovo Street Sofia 1303
T: +359 2 491 7877

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Fergus Whelan**, BA.BAI, MSc, MBA, CEng, FIEI, FConsEI

TOTAL EMPLOYEES

30

ABOUT THE FIRM

Established in 1999 Malone Group works with leading international brands to design, manage and deliver high value, business critical projects.

We have the management, technical, safety and operational expertise to derive value for your business and protect your operations by ensuring projects are delivered safely and efficiently.

From locations in Ireland, the UK, Canada and Bulgaria we have the capabilities to provide project lifecycle support for capital investments and operational initiatives.

ENGINEERING ACTIVITIES

Mechanical Design, Electrical Design, Process Design, Project Safety Project Management, Control & Automation, Digital Transformation, Master Planning.

PROJECT TYPES

Owner's Engineer, Full Lifecycle Management, Managed Service Model, Project Support Office, Masterplanning, Business Case Development, Implementation Scenarios, Sustainability Roadmaps, Front End & Detailed Design, Building Services & Utilities, Electrical & Instrumentation, Process & Packaging, Data Acquisition & Analytics, AI & Vision & Robotics, Intelligent Buildings, Smart Factory Roadmap, Project & Process Safety, Machinery Safety, Safety in Design, HAZOP, Qualification & Security.

MALONE O'REGAN

2B Richview Office Pk, Clonskeagh,
Dublin 14, D14 XT57

T: +353 (0)1 260 2655

E: info@morce.ie

W: www.maloneoregan.ie

OFFICES

3-4 Canada Street, Waterford, X91 V52K
T: +353 (0)51 876 855

Hitech House, Unit 18 Claregalway Corporate Park, Claregalway, Galway, H91 KFX3
T: +353 (0)91 531 069

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Eugene Kelly,** BA, BAI, MSc, Dip Proj Mgt, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

45

ABOUT THE FIRM

The firm was founded in 1978 and established its environmental services division in 1991. It established its UK office in 2012. Originally recognised for its expertise in the design, procurement and management of projects in the dairy, food and manufacturing sectors, the firm has expanded its range of services to include marine structures, building structures and specialist production / manufacturing projects. Since 1999 it has been providing services in the area of transportation and roads infrastructure. With offices in Dublin, Galway and Waterford the firm provides clients with nationwide coverage within easy reach of a local base.

ENGINEERING ACTIVITIES

Civil & Structural, Environmental, Health & Safety, Manufacturing, Marine, Mechanical & Electrical, Project Management, Roads & Bridges.

PROJECT TYPES

Commercial & Retail, Education, Food & Beverage Processing, Healthcare, Industrial Development, Legal & Forensic, Manufacturing, Mining & Mineral Extraction, Pharmaceutical, Ports & Harbours, Sports & Leisure, Roads & Bridges, Site Remediation.

McCRAE CONSULTING ENGINEERS LTD (MCE)

Rear 6B Arbourfield Terrace, Dundrum Business Park,
Dublin 14. D14 F5C6

T: +353 (0)1 296 2596

E: info@mceeng.ie

W: www.mceeng.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Norman Irvine**, BEng, CEng, PgDip H&S, FConsEI

TOTAL EMPLOYEES

7

ABOUT THE FIRM

McCrae Consulting Engineers specialise in fire, civil and structural engineering. Having undertaken many new build projects, we are also experts in refurbishment and conservation work. We are currently active in the residential, commercial, industrial, leisure, health care and education sectors.

We have developed an extensive repeat client base of both public and private clients. We believe work should be completed on time and within budget and that this is the key to developing long term client relationships.

PRACTICE HISTORY

McCrae Consulting Engineers was founded in 2011 by Richard McCrae following 13 years working for the well-known and long-standing Lee McCullough Consulting Engineers, specialists in fire, civil and structural engineering. In mid 2020, the practice merged with LMC Consulting Engineers. LMC Consulting Engineers was formed by Frank Lee, Gerry McCabe and Norman Irvine, some of the former directors and associates of Lee McCullough, in 2012. Following the retirement of Frank and Gerry, Richard and Norman decided it was an opportune time to join forces. McCrae Consulting Engineers now incorporates LMC Consulting Engineers.

This merger has allowed the combined companies to provide an enhanced service to all our clients through an increase in scale while still maintaining the core values of both companies and providing clients with direct access to senior staff, something which is often lacking in other practices.

ENGINEERING ACTIVITIES

Civil & Structural, Conservation, Fire Safety, Assigned Certifier, PSDP, Access Consultancy.

PROJECT TYPES

Fire Safety, Residential Developments (Housing & Apartments), Commercial Developments, Conservation/Restoration, Educational, Industrial Developments, Healthcare, Leisure Facilities, Assigned Certifier, Modular Buildings.

McELROY ASSOCIATES

69 Lower Leeson Street, Dublin 2. D02 YP04
T: +353 (0)1 660 9000
E: info@mea.ie
W: www.mea.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Ray Curran,** BSc(Eng), NCEA Dip. Eng, MSc, MA, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

13

ABOUT THE FIRM

Established over 25 years ago, McElroy Associates is a multi-discipline consulting engineering practice. The firm delivers design, project management and construction supervision services to a range of international and domestic clients, primarily in the industrial sector and across a range of pharmaceutical, healthcare, process and food industry projects.

ENGINEERING ACTIVITIES

Civil, Structural, Mechanical, Electrical, Fire, Building Services, Project Management, Assigned Certifier, Project Supervisor Design Process.

PROJECT TYPES

Pharmaceutical, Biopharma, Medical Devices, Industrial, Healthcare, Commercial, Third level.

MESCAL & ASSOCIATES

Enterprise House, Centre Park Road, Cork. T12 X4YW
T: +353 (0)21 431 4388
E: mescaleng@gmail.com
W: www.mescal.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Michael Mescal,** BE, MASc, CEng, FIEI, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

The firm was commenced in 1987 and works continuously throughout Ireland.

ENGINEERING ACTIVITIES

Civil, Environmental, Water.

PROJECT TYPES

Wastewater Treatment Plants, Sewage Treatment, Underground Services, Water Supply, Housing Development, Landfill, Solid Waste Handling.

METEC CONSULTING ENGINEERS

La Vallee House, Upper Dargle Road, Bray,
Co. Wicklow. A98 W2H9

T: +353 (0)1 204 0005

E: info@metec.ie

W: www.metec.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Bernard Denver,** MSc, BSc(Hons)Eng, DipEng, CEng, MIEI, FConsEI
- **Maurice Ramsay,** BA, BAI, MSc, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

55

ABOUT THE FIRM

Metec's clients are industry leaders and innovators that are involved in fit-outs and construction projects – from commercial to residential. We place great value on operational excellence and innovation. Our highly qualified and experienced team of mechanical and electrical engineers provide an end-to-end solution that encapsulates good design, innovative thinking, and a keen focus on sustainability, energy saving and building performance. Our engineers work with our LEED and WELL APs and building performance modellers in an ecosystem where information is easily accessed, shared and updated, where collaboration is continual, and where sustainability goals underpin the design.

The Metec team of engineers collectively bring over 500 years' experience to our clients' projects and their experience comprises mixed-use commercial and residential developments across a wide range of engineering fields. Our values are aligned with those of our clients which uniquely qualifies us to successfully deliver their project goals.

ENGINEERING ACTIVITIES

Mechanical and Electrical, Sustainable/Energy Engineers, LEED AP, WELL AP, Energy Modelling.

PROJECT TYPES

Commercial, Retail, Pharmaceutical, Education, Sports and Leisure, Energy Audits, Health Care, Religious, Residential, Prisons.

MHL & ASSOCIATES LTD

Carraig Mor House, 10 High Street, Douglas Road,
Cork. T12 KC66

T: +353 (0)21 484 0214

E: info@mhl.ie

W: www.mhl.ie

OFFICES

88 Wood Street, London, EC2V 7RS, United Kingdom
T: +44 (0)20 72530893

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Ken Manley,** BE, CEng, MIEI, HdipEnvmn.Eng, FConsEI

TOTAL EMPLOYEES

13

ABOUT THE FIRM

The company was established in 1999 and has gained a reputation in the field of transportation engineering, local authority infrastructural design and the provision of civil engineering services for residential and commercial developments.

ENGINEERING ACTIVITIES

Civil, Transportation, Traffic modelling, Major Roads Infrastructural Works.

PROJECT TYPES

Business Parks, Traffic Impact Studies, Road Safety Assessments, Traffic & Transportation Plans, Commercial Developments.

MICHAEL SLATTERY ASSOCIATES

19 Windsor Place, Lr Pembroke St.
Dublin 2. D02 XH36

T: +353 (0)1 676 5713

E: dublin@msa.ie

W. www.msa.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Michael Slattery,** BE, MSc(Fire Eng), CEng, FIEI, MSFPE, Eur Ing, FConsEI

TOTAL EMPLOYEES

13

ABOUT THE FIRM

Founded in 1988.

ENGINEERING ACTIVITIES

Fire Safety Engineering, Event Safety Management, Occupational Health and Safety, Fire Safety Management.

PROJECT TYPES

Stadia, Hospitals, Universities/Schools/Colleges, Shopping Centres, Industrial Buildings, Apartment Developments & Hotels, Offices/Financial Services, Major Public Assembly Events/ Venues, Research Projects.

MMA CONSULTING ENGINEERS LTD

Unit 4E Fingal Bay Business Park, Balbriggan,
Co. Dublin. K32 HN82

T: +353 (0)1 690 5040

E: info@mma.ie

W. www.mma.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Dermot Doran,** HDipEng - Building Services Engineering BEng Hons. - Building Services Engineering CEng. - Engineers Ireland LEED AP, FConsEI

TOTAL EMPLOYEES

29

ABOUT THE FIRM

Established in 1968, the MacArdle McSweeney Design practice is now part of the Headcount Group, one of Ireland's leading outsourced engineering solutions providers. MMA Consulting Engineers continues the tradition of delivering high quality mechanical and electrical building services designs for the commercial, residential, healthcare, leisure and industrial sectors. MMA also has a comprehensive process design capability.

This high-tech alliance has allowed us to modernise our design practices and we have developed industry leading 3D BIM M&E design workflows that increase design team productivity, enhance deliverable quality and significantly reduce design costs.

ENGINEERING ACTIVITIES

Mechanical and Electrical Building Services, Environmental and Sustainable Solutions, Building Refurbishment, Feasibility Studies, Due Diligence, Energy Modelling, Lighting, Sun and Shadow Modelling, Material and Personnel Flow Studies, LEED & BER Certified. Industrial Process Design, 3D Laser Scanning and Scan to BIM Validation.

PROJECT TYPES

Commercial, Industrial, High-Tech, Healthcare, Education, Residential.

MOLONY & MILLAR

Riverbank House, Ballyboden Road, Rathfarnham,
Dublin 14. D14 W2V1

T: +353 (0)1 493 0211 / +353 (0)1 493 0215

E: info@molonymillar.ie

W: www.molonymillar.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Raymond D. Goggin,** BE, CEng, MIEI, Eur Ing, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

The partnership was formed in 1969 from the previously established practice of Sir Hugh F.Molony,

ENGINEERING ACTIVITIES

Civil, Structural, Environmental.

PROJECT TYPES

Airports, Education, Hospital, Industrial, Roads, Town Centres, Water, Waste Treatment, Landfill, Recreational, Office Development, Domestic, Private Dwellings.

MOTT MacDONALD IRELAND

South Block, Rockfield, Dundrum,
Dublin 16. D16 R6VO

T: +353 (0)1 291 6700

E: engineers.dublin@mottmac.com

W: www.mottmac.ie

OFFICES

5 Eastgate Avenue, Little Island, Co. Cork. T45 EE72
T: +353 (0)21 480 9800

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Barry Williams**, BE Civil (Hons), MEngSc, CEng, MIEI, FConsEI (Managing Director)
- **Gemma McCarthy,** BEng, CDipAF, CEng, FConsEI

TOTAL EMPLOYEES

165

ABOUT THE FIRM

Mott MacDonald Ireland has been operational in Ireland for over 55 years, developing the business into a multi-disciplinary operation. With over 165 staff operating in Dublin and Cork, we bring our customers a total project delivery capacity across all sectors. Mott MacDonald Ireland is part of the global Mott MacDonald Group which is entirely 'employee owned'. The total group staff is over 18,000 in 180 offices worldwide.

ENGINEERING ACTIVITIES

Civil, Structural, Transportation, Water and Wastewater, Power Generation, Power Transmission & Distribution, Environmental, Marine, Highways, Railways, Light Rail, Railway Systems, Traffic, Geotechnical, Mechanical and Electrical Building Services, Mining and Mineral Extraction, Oil and Gas, Value Engineering, Net Zero, Quantity Surveying. Telecommunications, Waste Disposal, Water, Pollution Control and Project Management.

MRG CONSULTING ENGINEERS LIMITED

4 Day Place, Tralee, Kerry. V92 AW26

T: +353 (0)66 712 3130

E: info@mrg.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Tadhg McGillicuddy,** BE, MEngSc, CEng, FIEI, FConsEI

TOTAL EMPLOYEES

13

ABOUT THE FIRM

Formerly Malone O'Regan McGillicuddy, the firm was established in 1980 in Tralee. Today it has offices in Tralee and Cork with a long-serving experienced team. Both offices are equipped with state-of-the-art engineering design and draughting software and technology and online library facilities. The practice offers a comprehensive civil and structural engineering consultancy service and has been involved in the successful design and completion of a wide range of projects across all sectors of the industry.

ENGINEERING ACTIVITIES

Civil, Structural, Project Management.

PROJECT TYPES

Office Buildings, Bank/Retail Developments, Civil Buildings, Hospitals, Healthcare Facilities, Schools and Colleges, Industrial Development, Pharmaceutical, Sports & Leisure, Roads & Bridges, Residential Developments, Windfarm Developments.

MTW CONSULTANTS LTD

Unit 4, MTW House, Broomfield Business Park, Malahide, Co Dublin. K36 F434

T: +353 (0)1 846 3505

E: info@mtw.ie

W: www.mtw.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Tom Markham,** BE, CEng, MIEI, FConsEI
- **Glen Faherty**, BSc(Eng), Dip Eng, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

Tom, Kevin & Bryan all graduated from the Engineering School of UCD in the mid '70s and came together in September 2000 to offer an engineering practice based on the north side of Dublin. We draw on a wealth of experience both nationally and internationally to offer a comprehensive and tailored service to clients.

ENGINEERING ACTIVITIES

Civil, Structural, Fire, Project Management.

PROJECT TYPES

Student Accommodation, Hotels, Industrial Development, Commercial Development, Housing Development, Apartment Complex, Listed Buildings, Artificial Playing Surfaces, Services to the Health Industry from Hospital to residentials.

MUIR ASSOCIATES LTD

Marketing Network House, Argyle Square,
Morehampton Road, D04 K0Y1

T: +353 (0)1 676 2788

E: info@muir.ie

W: www.muir.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Rafid Ajina**, BSc, MEngSc, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

20

ABOUT THE FIRM

Founded in 1952 and carried out projects in Ireland and over 20 African, European and Middle East Countries. Muir Associates Limited is a civil and structural engineering and project management consultancy practice that works in partnership with clients to provide key advice and to deliver on their ambitions.

We have a technically competent team of experienced personnel with a broad range of expertise to deliver technical excellence on projects regardless of project size.

ENGINEERING ACTIVITIES

Civil, Structural, Project Management, Environmental, Marine, Traffic and Transportation, Process & Manufacturing.

PROJECT TYPES

Hotels, Aviation, Industrial, Hydraulic Structures/Water Supply, Sports & Leisure, LPG Storage, Marine, Roads, Bridges, Education, Services Planning, Transport, Masterplanning, Urban Regeneration, Public Works, Sugar Industry, Environment, Residential, Retail, Conservation, Commercial, Light Rail, Health & Safety, Building Control.

NICHOLAS O'DWYER LTD

Nutgrove Office Park, Nutgrove Avenue,
Dublin 14. D14 V3F6

T: +353 (0)1 296 9000

E: dublin@nodywer.com

W: www.nodwyer.com

OFFICES

15 Downshire Road, Newry Co Down. BT34 IEE
T: +44 (0)28 302 66915

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Jim Oliver,** BE, CEng, MIEI, C.WEM, MCIWEM, FConsEI
- **Jerry Cronin,** BE, MIEI, CEng, Eur Ing, MCIWEM, FConsEI
- **Gerard Monaghan,** BEng, MSc, MBA, CEng, FCIArb, MIEI, FConsEI

TOTAL EMPLOYEES

286

ABOUT THE FIRM

Founded in 1932, we have been at the forefront of innovative work, promoting Irish engineering consultancy in Ireland, the UK and internationally. We strive to deliver sustainable solutions that transform communities and bring about lasting positive change. Through a blend of expertise, innovation, and global dedication, we envision a world where sustainable engineering protects grow communities. Since we joined the RSK group in 2020 the firm has almost doubled in size and in addition to established offices in Ireland, the UK and Africa we have opened offices in the Middle East, South Africa and Indonesia.

ENGINEERING ACTIVITIES

Water, Environmental and Planning Services, Energy including renewable energy, Wastewater, Buildings & Structures, Communications, Transportation, Infrastructure, Technical Assistance.

PROJECT TYPES

Water Resource Management, Water Treatment, Water Distribution Networks, Wastewater Collection Systems, Wastewater Treatment Works, Flood Protection, Educational Buildings, Residential Buildings, Healthcare Buildings, Transportation and Highways, Bridge Design and Assessment, Port Facilities, Energy Infrastructure including Solar and Wind farms, Communications Infrastructure, Urban Development, Social and Environmental Assessments, Environmental Studies, Licencing and Permitting.

N.J. O'GORMAN & ASSOCIATES LTD

16 Gilford Road, Sandymount, Dublin 4. D04 EC80

T: +353 (0)1 475 5244

E: contactus@njog.ie

W: www.njog.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **John O'Donovan,** BE, PE, CEng, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

N.J. O'Gorman & Associates (NJOG) is a consulting engineering, project management and design development consultancy. Established in 1984, NJOG has gained over 30 years of experience in the Irish and UK construction industry by providing a high quality professional service. The practice is firmly focused on the needs of our clients and has a highly qualified and dedicated professional workforce which ensures the successful delivery of construction projects.

ENGINEERING ACTIVITIES

Project Management, Civil & Structural Engineering. Mechanical & Electrical Building Services Engineering, Project evaluation and auditing of development proposals, Project Monitoring, Dilapidation/Condition Surveys, Historic Buildings Conservation and Restoration, Fit-out and Refurbishment of Existing Buildings, Energy Efficiency and BER Certification, Planning Applications and EIS Coordination, Fire and Disability Access Certificate Applications, Commercial Property Dilapidation Surveys and Reports, Flat Roof Design and Surveys, Pyrite Investigation and Remediation.

PROJECT TYPES

Student Accommodation, Hotel, Office Developments and Fit-out, Hospital Developments, Nursing Home Projects, Educational Projects, Shopping Centre and Retail Projects, Multiplex Cinema Projects, Residential Development Projects. Large Scale Veterinary Complexes, Refurbishment of Residential and Commercial Buildings, Refurbishment of Historical/Heritage Buildings. Project Evaluations, Master Plan Development and Co-ordination. Environmental Impact Report Co-ordination. Kitchens and Restaurants, Conservation and Restoration, Industrial and Manufacturing, Energy and Sustainability, Hotel and Sports, New Roofs and Re-roofing Projects, Clean Room Design.

NOEL LAWLER CONSULTING ENGINEERS

7 Patrick Street, Kilkenny. R95 HT9T

T: +353 (0)56 772 1115

E: info@nlce.ie

W: www.nlce.ie

OFFICES

Citywest Business Centre, 3013 Lake Drive, Citywest, Dublin 24. D24 PPT3
T: +353 (0)1 469 3711

Acorn Business Centre, Blackrock, Cork. T12 K7CV
T: +353 (0)21 461 4265

Morrell Business Centre, 98 Curtain Road, London EC2A 3AF
T: +44 (0)207 9797704

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Daniel Ring,** BEng(Hons), CEng, MIEI, Low Carbon Assessor, FConsEI

TOTAL EMPLOYEES

26

ABOUT THE FIRM

Noel Lawler Consulting Engineers was established in 1980 by Noel Lawler. Over the last 36 years the company has established itself as a highly respected M&E building services consultancy with a wealth of expertise across a broad range of sectors and clients with over 4,100 commissions to date.

ENGINEERING ACTIVITIES

Engineering Design, Mechanical, Electrical, Building Services, Building Refurbishment, Conservation Safety, Fire Safety, Health & Safety, Project Supervisor Design Process (PSDP) Project Management, Feasibility Studies, Energy Audits, Energy Management, Planning, Assigned Certifier, Insurance Claims & Investigations, Low Carbon Consultants, Building Services Software (BIM, IES, CAD etc.).

PROJECT TYPES

Commercial Developments including Retail and Office Complexes, Industrial and Manufacturing Developments, Hotel, Leisure and Sports Complexes, Schools, Hospitals, Religious Buildings, Assigned Certifier, Residential Developments including Multi-Storey Apartments, Healthcare, Pharmaceutical, Education and Training.

OBA CONSULTING ENGINEERS

The Schoolyard, No1 Grantham Street,
Dublin 8. D08 A494

T: +353 (0)1 535 0084

E: info@obaconsulting.ie

W: www.obaconsulting.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Ciaran O'Brien,** BEng, CEng, MIEI, Eur Ing, FConsEI

TOTAL EMPLOYEES

3

ABOUT THE FIRM

The firm was founded in 2009.

ENGINEERING ACTIVITIES

Civil & Structural.

PROJECT TYPES

Domestic, Educational, Industrial, Retail Development, Sport & Leisure, Roads & Bridges, Water, Office Development, Healthcare Facilities, Hotels, Pharmaceutical.

OBMG LTD

Moydrum Business Park, Athlone, Co. Westmeath.
N37 T6K8

T: +353 (0)90 646 5010

E: gareth@obmg.ie

W: www.obmg.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Gareth McGowan,** BEng (Hons), CENG, FConsEI

TOTAL EMPLOYEES

11

ABOUT THE FIRM

Innovative mechanical and electrical consultants with a focus on energy efficiency, client perception and the utilisation of modern design concepts.

OBMG focus primarily in the mission critical and data centre environment. We provide CA (commissioning agent), commissioning management and design services across all aspects of the mission critical industry.

We also provide M&E design services in the industrial, commercial and healthcare sectors.

Our core staff includes a highly trained and professionally capable team with a wide spectrum of expertise from commissioning to mission critical design.

Capabilities including Design, Commissioning Management, Project Management, PSDP, BCAR Duties, Feasibility Studies, Engineering Reports, Conditional Surveys, Preliminary Design and Reporting.

ENGINEERING ACTIVITIES

Mechanical Engineering, Electrical Engineering, Commissioning Agent Services.

PROJECT TYPES

Data Centres, Mission Critical, Industrial, Commercial, Medical Device.

O'CONNOR SUTTON CRONIN

9 Prussia Street, Dublin 7. D07 KT57

T: +353 (0)1 868 2000

E: contactus@ocsc.ie

W: www.ocsc.ie

OFFICES

2nd Floor, Technology House, Galway Technology Park, Parkmore
T: +353 (0)91 771 360

North Point House, North Point Business Park, Mallow Road, Cork. T23 AT2P
T: +353 (0)21 235 5816

113 The Mount, Belfast, BT5 4ND
T: +44 (0)28 9024 4444

40 Bowling Green Lane, London ECIR ONE. UK
T: +44 (0)207 415 7120

No. 2 Snow Hill, Unit 234, Birmingham, B4 6GA
T: +44 (0)121 231 3061

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Martin McGrath,** BEng, DipStructEng, CEng, MIEI, MIStructE, FConsEI
- **Patrick Field,** BSc(Hons), CEng, DipEng, CEng, GradDip (Thermal Bridging) MIEI, ASHRAE BEMP, FConsEI
- **Andy O'Brien,** BSc(Eng), DipStructEng, CEng, MIEI, MIStructE, DipProjMgt, FConsEI
- **Brian O'Rourke,** BL, CEng, MIEI, FCIArb, FCIHT, FConsEI
- **Michael O'Reilly,** BSc(Eng), DipStructEng, CEng, MIEI, MIStructE, FConsEI
- **Paul Healy,** BSc(Eng), CEng, FIEI, FIStructE, FConsEI
- **Brian Madden,** Dip.Eng, BScEng, PGD H+G, PGD CFE, PGD Int. S, FConsEI
- **Anthony Horan,** BE, CEng, MIEI, PMP, DipProjMgmt, PCertRSA, Prince2®Practitioner, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Eddie Lyons,** BE, CEng, MIEI, MIStructE, RConsEI
- **Ian Crehan,** BE, CEng, MIEI, MIStructE, RConsEI
- **Paul McSteen,** BSc(Eng), DipEng, CEng, MIStructE, MIEI, RConsEI
- **Declan Barry,** BE, CEng, MIEI, RConsEI
- **Shaun Doody,** BE, MSc, CEng, MIEI, MIStructE, RConsEI

TOTAL EMPLOYEES

280

ABOUT THE FIRM

This firm was founded in November 1988 in Dublin. It has since grown to become an international, mutli-disciplinary practice.

ENGINEERING ACTIVITIES

Structural, Civil (and Associated Structures), Mechanical and Electrical, Roads, Construction Management, Bridge Design, Rail, Environmental, Pollution Control, Waste Management, Water, Project Management, Traffic, Expert Witness, Sustainability, Health and Safety.

PROJECT TYPES

Third Level Colleges, Hospital Developments, Office Developments, Roads Design & Transportation, Commercial/ Corporate Developments, Industrial Developments, Primary/ Post Primary Schools, Site Development Works, Apartment/ Housing Developments, Civil Engineering Projects, Environmental Projects, Local Authority Developments, Refurbishment Projects, Leisure Developments, Golf Course Developments, Bridges, Rail, Construction Management.

PATRICK McCAUL ENVIRON. CONSULTING ENGINEERS LTD

3 Bankmore Business Park, Bankmore Road, Omagh, Co. Tyrone. BT79 0BE

T: +44 (0)28 8225 1155

E: info@pmccaul.com

W: www.pmccaul.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Niall O'Kane,** BEng(Hons), CEng, MCIBSE, FConsEI
- **Patrick McCaul,** BEng(Hons), CEng, MCIBSE, FConsEI

TOTAL EMPLOYEES

12

ABOUT THE FIRM

Patrick McCaul Environmental Consulting Engineers Ltd. is a fully accredited company of chartered mechanical and electrical and renewable technologies consulting engineers who have earned a respected reputation in the building services industry throughout Ireland.

The company has always been innovative and willing to embrace and implement new technologies. Being up-to-date with the most recent technological developments and legislation is a core business competency that helps ensure the company's place as one of the most experienced, dynamic and forward-thinking M&E engineering practices in Ireland.

We have extensive experience of new builds, refurbishment and upgrade projects over the years with quality design and build, sustainability, energy efficiency, comfort criteria, low maintenance and flexible and future proofing applied. Develop and construct contracts, including PFI projects, are a significant element of the design workload of the company over the past number of years and we have excellent experience of off-site constructions having completed the M&E services for numerous modular buildings.

As energy consultants we provide Low Carbon Design and Integration Strategies, Energy Management and Efficiency, Renewable Technologies consultancy and Building Energy Ratings (BER) assessments. These services recommend ways to control costs, reduce energy bills and lower carbon emissions which allow clients to operate their businesses to optimum efficiency.

We also provide a comprehensive, independent renewable energy consulting service to ensure maximum financial viability for our clients whether considering a small on-site system or a large-scale industrial project.

ENGINEERING ACTIVITIES

Mechanical & Electrical Engineering, Low Carbon Design & Integration Engineering and Building Energy Ratings.

PROJECT TYPES

Industrial, Educational, Healthcare, Churches, Hotels/Leisure, Swimming Pools/Spa's, Housing & Apartments, Office Blocks & Call Centres, Domestic, Retail and Commercial.

PAUL TWOMEY & ASSOCIATES LTD

18 St Patrick's Hill, Cork. T23 TN3H

T: +353 (0)21 450 7784 / 450 6414

E: info@ptaengineers.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Joseph O'Sullivan,** BE, CEng, Eur Ing, FIEI, FConsEI

TOTAL EMPLOYEES

4

ABOUT THE FIRM

The firm was founded in 1971 by the late Paul Twomey and provides specialist consultancy services in civil, structural, fire safety, project management, forensic and legal engineering.

ENGINEERING ACTIVITIES

Civil, Structural, Project Management, Fire Safety, Investigation of Damage to Structures, Presentation of Engineers Evidence, Building Structure Assessment.

PROJECT TYPES

Educational, Sports Centres, Housing Estate Services, Office Block, Structural Collapse Investigations, Factories, Warehouses, Religious, Underpinning.

P. COLEMAN & ASSOCIATES

Bank Place, Ennis, Co Clare. V95 HW27

T: +353 (0)65 682 9731 / 682 9173

E: engineers@pjcoleman.com

W: www.pjcoleman.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Patrick Coleman,** BE, MEngSc, CEng, FIEI, Eur Ing, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Founded in 1976 in Ennis.

ENGINEERING ACTIVITIES

Civil, Structural, Roads, Planning, Site Developments, Litigation.

PROJECT TYPES

Hotels, Office Blocks, Visitor Centres, Housing Developments, Water Schemes, Sewerage Schemes, Roof Repairs, Site Development Work, Road Design, Planning Submission/Reports, Underground Car Parks, Retail Developments, Schools, Industrial Units.

PCCE PAUL CONDRON CONSULTING ENG LTD

10 Rectory Way, Herbert Road, Bray,
Co. Wicklow. A98 CD88

T: +353 (0)87 243 3602

E: info@pcce.ie

W: www.pcce.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Paul Condron,** BE, CEng, Eur Ing, MIEI, MCIBSE, FConsEI

TOTAL EMPLOYEES

1

ABOUT THE FIRM

PCCE - Paul Condron, has over 48 years' experience in his areas of operations. After some 30 years of building services experience in both Ireland and overseas, Paul developed PCCE in 2003 to offer training and consultancy services primarily directed at Life Safety Systems – Fire Detection and Alarm (FDAS) and Emergency Lighting (EML).

In addition, experience was developed through working with ACEI and Engineers Ireland in respect of Designing for Safety in Construction.

Former joint Managing Director of Cuthbert Condron Associates and subsequently Regional Director with White Young Green Ireland.

Overseas experience in Nigeria, Saudi Arabia, USA.

Active member of the NSAI technical committees representing ACEI members, for the development of the following National standards:
I.S.3218 - Fire Detection and Alarm Systems (2001-2021),
I.S.3217- Emergency Lighting (2010-2021).

ENGINEERING ACTIVITIES

Technical Course Development and Presentation:
Fire Detection and Alarm Systems (FDAS)
Emergency Lighting (EML)
Fire Safety Systems (FSS)
Construction Legislation (DSC)

PROJECT TYPES

PCCE Training - Courses

- Fire Detection and Alarm Systems (FDAS): 1-day Review Course; 3-day Level Certificate course developed to Level 6 Special Purpose; Service
- Emergency Lighting (EL): 1-day Review Course; Service and Maintenance
- Courses; Fire Safety (FSS): User Responsibilities for Fire Safety in Residential Buildings
- Legislation (DSC): Designing for Safety in Construction - Structural/Civil Engineering (SC) and Building Services/ Facilities Management) (M&E/FM)

PHM CONSULTING LTD

11 Mallow Street, Limerick, V94 WRN4

T: +353 (0)61 576 020

E: info@phm.ie

W: www.phm.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Edward O'Donovan,** BSc(Eng), MProjectMgt, CEng, MIStructE, FConsEI

TOTAL EMPLOYEES

5

ABOUT THE FIRM

Established in 2009.

ENGINEERING ACTIVITIES

Civil and Structural, Environmental.

PROJECT TYPES

Commercial/Retail, Housing Schemes, Resource/Recreational Centres, Industrial/Warehousing, Educational, Environment, Stakeholder Management & Communications, Project Management Services, Structural/Buildings, Transport Planning.

PMCE LTD

17 Greenmount House, Greenmount Office Park, Harold's Cross, D6W. D6W VX78

T: +353 (0)1 464 3041

E: info@pmceconsultants.com

W: www.pmceconsultants.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Peter Monahan,** BE, MSc, FIEI, MIHT, FConsEI

TOTAL EMPLOYEES

9

ABOUT THE FIRM

PMCE provides consulting engineering services to public and private clients in Ireland, the UK and GCC countries in the areas of road safety engineering, road safety engineering, road planning and design, traffic analysis and assessment and project management.

ENGINEERING ACTIVITIES

Traffic Modelling, Road Design (all stages), Road Safety, Project Management, Collision Analysis, Network Safety Assessment, Network Safety Ranking, Quality Audits, Road Safety Impact Assessment, Project Supervisor Design Process (PSDP), Research, Training.

PROJECT TYPES

Road Design, Traffic Engineering, Road Safety Audits, Road Safety Inspection, Traffic & Transport Assessment, Quality Audits.

POGA CONSULTING ENGINEERS

Unit C2, Nutgrove Office Park, Rathfarnham, Dublin14. D14 CR20

T: +353 (0)1 205 1101

E: info@pogorman.ie

W: www.poga.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Paul Moran,** BE, CEng, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

Pat O'Gorman & Associates is a leading Irish independent consultant engineering practice. Our practice has over 26 years' experience providing professional consultant engineering services to the construction industry throughout Ireland and we pride ourselves on our unrivalled service. Our client profile includes private clients, developers, pubic bodies, international corporations, national asset management agency, local authorities and building contractors. We are Independently owned so we can focus on our clients' requirements. Our approach has made a real difference to our clients and this is measured not just in testimonials but in our client retention rate and continued growth of our business.

ENGINEERING ACTIVITIES

Structural & Civil.

PROJECT TYPES

Residential Developments, Retail/Commercial, Special Structures, Apartments, Industrial Estates, Conservation/ Building Restoration, Office Developments, Hotels, Factories & Warehousing, Educational & Community Buildings, Roads, Drainage.

PUNCH CONSULTING ENGINEERS

Carnegie House, Library Road, Dun Laoghaire,
Co. Dublin. A96 C7W7

T: +353 (0)1 271 2200

E: dublin@punchconsulting.com

W: www.punchconsulting.com

OFFICES

97 Henry Street, Limerick, V94 YC2H
T: +353 (0)61 221 200

Elm Court, Boreenmanna Road, Cork, T12 HHW2
T: +353 (0)21 462 4000

Carleycon House, Main Street, Oranmore, Co. Galway, H91 T026
T: +353 (0)91 703 500

Unit 2, The Doges Building, Templeton On The Green, Glasgow,
G40 1DA, Scotland
T: +44 (0)141 550 7270

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Tim Murnane,** BEng, CEng, FIEI, FICE, FConsEI
- **Cian Murphy**, BE, MSc, CEng, MIEI, FConsEI
- **Ronan Stokes,** BE, CEng, FIEI, MIStructE, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Kevin O'Riordan,** BEng, CEng, MIEI, RConsEI

TOTAL EMPLOYEES

120

ABOUT THE FIRM

PUNCH was founded in 1973 in Limerick. The vision of its founding members was to create sustainable, high quality engineering employment in the mid west region. This vision has been fully realised and 50 years later, the company has expanded geographically to have offices in the four largest cities in the Republic. Additionally, we have an office in Glasgow, Scotland. We provide engineering consultancy services in the area of civil, structural and environmental engineering. Our highly skilled team has extensive experience of planning, detailed design and construction and we have an extensive portfolio of completed projects throughout Ireland and beyond. Some notable award winning projects include: International Rugby Experience Building, National Gallery of Ireland, National Forensic Mental Hospital Dublin, Adare Manor and Thomond Park Rugby Stadium.

ENGINEERING ACTIVITIES

Civil, Structural, Environmental, Marine, Roads, Bridges, Transportation, Flooding, Waste, Assigned Certifier, Health and Safety (PSDP), Expert Witness and Government Advisory Work.

PROJECT TYPES

Residential, Office Developments, Industrial, Logistics, Bridges, Marine, Commercial, Museums/Cultural, Education Facilities, Roads, Heritage and Refurbishment, Sports and Leisure, Healthcare, Hotels, Waste Treatment, Water Supply and Conservation.

RKA CONSULTING ENGINEERS

2 Clogheen Business Park, Blarney Road,
Cork. T23 X70V

T: +353 (0)21 439 9799

E: admin@rka.ie

W: www.rka.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Raymond F. Keane,** BE, MEngSc, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

8

ABOUT THE FIRM

RKA – Ray Keane & Associates is an ISO9001:2008 accredited firm of consulting engineers and project managers. The practice, which was established in 1985, provides expertise in civil and structural engineering and project management. The practice is structured to offer a comprehensive range of engineering and project management services. We take pride in delivering a dedicated personalised service to our clients.

ENGINEERING ACTIVITIES

Engineering Activities.

PROJECT TYPES

Land Use Feasibility Studies, Retail and Forecourt Developments, Residential and Regeneration Projects, Building Conservation Projects, Office, Commercial and Business Park Developments, Industrial and Waste Management Developments, Land Surveying and Mapping.

ROADPLAN CONSULTING

7 Ormonde Road, Kilkenny. R95 N4FE

T: +353 (0)56 779 5800

E: info@roadplan.ie

W: www.roadplan.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Dermot Donovan,** BE, Dip Env Eng, CEng FIEI, FConsEI

TOTAL EMPLOYEES

13

ABOUT THE FIRM

Roadplan Consulting provides engineering consultancy services in road design, road safety and transportation assessment. Roadplan Consulting was established in late 2003 and operates from our offices in Kilkenny City. Our staff has a wealth of experience in all areas of the roads and traffic industry and serves the needs of a broad public and private client base.

ENGINEERING ACTIVITIES

Road Design, Road Safety Assessment, Urban Mobility, Transportation Analysis, Statutory Processes.

PROJECT TYPES

Roads, Urban Realm, Road Assessment Management.

ROGER MULLARKEY & ASSOCIATES

Duncreevan, Kilcock, Co. Kildare. W23 C4E9

T: +353 (0)1 610 3755 / +353 (0)87 232 4917

E: info@rmullarkey.ie

W: www.rmullarkey.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Roger Mullarkey,** BSc(Eng), DipEng, CEng, MIEI, Eur Ing, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

With over 26 years of experience, Roger Mullarkey has a vast experience right across the construction industry sector and has gained a strong reputation as a professional, safe, efficient and reliable consultant engineer who has always maintained a strong commitment to clients in providing a comprehensive consultancy service. Roger provides a high quality design in a cost efficient manner with a client-centred approach. Maintaining a personal commitment to every project from inception to completion is a proven attribute of Roger Mullarkey and is reflected by the respect he has gained in the quarter of a century of his consultancy experience.

ENGINEERING ACTIVITIES

Structural Engineering Design, Civil Engineering Design, Site Supervision, Structural Building Surveying.

PROJECT TYPES

Residential, Commercial & Retail Developments, Hotel/ Accommodation Schemes, Land Use Feasibility, Schoo Projects, Community Buildings, Local Authority Projects, New and Remediated Industrial Developments, Conservation Refurbishment and Due Diligence.

ROUGHAN & O'DONOVAN

Arena House, Arena Road, Sandyford,
Dublin. D18 V8P6

T: +353 (0)1 294 0800

E: info@rod.ie

W: www.rod.ie

OFFICES

Unit 2.1, Block 2, Woodford Business Park Turnapin Little,
Dublin 17. D17 E925
T: +353 (0)1 294 0800

82-87 Pegholme, Wharfebank Mills, Ilkley Road, Otley, LS21 3JP
T: +44 (0)113 298 0000

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Harry Meighan,** (Chairman) BE, CEng, FIEI, HDipConsLaw, FConsEI
- **Jim Thorpe,** (Managing Director) BSc, DipEng, CEng, MIEI, MICE, FConsEI
- **Richard Marc Jones,** (Company Secretary) BEng (Hons), CEng MICE, CEng MIEI, FConsEI
- **Mark Kilcullen,** BE, MSc, CEng, MIEI, FConsEI
- **Seamus MacGearailt,** BE, CEng, FIEI, FConsEI
- **Aonghus O'Keeffe,** BEng MEngSc MBA CEng MIEI, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Andrew Thomson,** PhD, BAI, BA, HDip (PrjMgt), CEng, MIEI, RConsEI
- **Daire O Riagáin,** BE(Hons), P.Grad.Dip Cons Law, CEng, MIEI, RConsEI
- **Edward Warren,** BE Civil, CEng, MIEI RConsEI
- **Peter King,** BA, BAI, PGrad.Dip, CEng, RConsEI
- **Eoin O'Catháin,** BE, MSc, HDip, CEng MIEI, RConsEI

TOTAL EMPLOYEES

216

ABOUT THE FIRM

Founded in 1974 the company has expanded to a leading position in the Irish market providing integrated multi-disciplinary professional services through all project phases. Current projects include TII eMOS, A6 Dungiven to Drumahoe, Waterford City North Quays, HSE CNU PPP, HSE Decarbonisation Pathfinder, West Clare Greenway, BusConnects, DART+ West, N5 Ballaghaderreen to Scramoge and Great Yarmouth Third River Crossing. The company has a research group who have progressed the INFRALINC project assessing risk to critical infrastructure resulting from climate change.

ENGINEERING ACTIVITIES

Asset Management, Buildings, Bridges, Civil, Environmental, Energy, Flood Modelling and Defences, Geotechnics, ITS, Planning, Ports and Harbours, Rail, Roads, Greenways, Research, Site Development, Structural, Traffic and Transportation, Water and Wastewater, Contract Administration, Project Supervisor Design Process (PSDP).

PROJECT TYPES

All types of projects in the practised fields of engineering from feasibility through to handover.

RPS CONSULTING ENGINEERS

West Pier Business Campus, Dun Laoghaire,
Co. Dublin, A96 N6T7

T: +353 (0)1 488 2900

E: Ireland@rpsgroup.com

W: www.rpsgroup.com/ireland

OFFICES

Cork	T: +353 (0)21 466 5900
Galway	T: +353 (0)91 400 200
Sligo	T: +353 (0)71 913 8909

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Willie Madden,** BA, BAI, MSc, PG Cert Mgt, CEng, FConsEI (Managing Director)
- **Gerry Carty,** BE, ME, CEng, FIEI, C.WEM, MCIWEM, MInsD, FConsEI
- **Christy O'Sullivan,** BA, BAI, MSc, CEng, CWEM, FIEI, MICE, MCIWEM, FConsEI
- **Grellan McGrath,** BE, CEng, FConsEI
- **David McHugh,** BE, MBA, CEng, MIEI, C.WEM, MCIWEM, FConsEI
- **Alan Curran,** BA, BAI, CEng, Post Grad DipEng, Post Grad Dip Mgt, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Brendan Brice,** BE, MEngSc, CEng, MIEI, RConsEI
- **Eamon Cox,** BE, CEng, MassPE, DipPM, RConsEI
- **Gareth McElhinney,** BE, MBS, CEng, MIEI, PMI-PMP, RConsEI
- **Paul O'Riordan,** BE, CEng, MIEI, RConsEI
- **Rowan O'Callaghan,** BE, MEngSc, DipIT, CEng, MIEI, RConsEI
- **Cormac Woods,** BSc(Eng), PGradDip, H&S, CEng, FIStructE, FIEI, RConsEI

TOTAL EMPLOYEES

450

ABOUT THE FIRM

We are an integrated multidisciplinary engineering, environmental, planning, project management and project communications consultancy. Part of Tetra Tech since 2023. Established in 1967.

ENGINEERING ACTIVITIES

Airports, Asset Management, BIM, Bridges, Civil, Energy, Environmental, Fire, Geotechnical, Health & Safety, Industrial & Commercial, Mechanical/Electrical, Planning, Pharmaceutical, Ports/Harbours, Project Management, Road, Rail, Structural, Sustainability, Waste, Wastewater and Water.

PROJECT TYPES

Catchment & Marine Management, Civil (incl Associated Structures), Energy (inc. Renewables), Environment and Ecology (inc. AA/EIA/SEA), Flood Risk Management, Geotechnical / Hydrological/ Hydrogeological, Health & Safety, Information Technology (inc GIS), Marine, Oil, Gas and Water Pipelines, Planning, Project Management, Public Private Partnership (PPPs/DB/DBO), Risk Assessments, Roads/Ports/Rail/Airports, Stakeholder Management & Communications, Structural/ Buildings/Bridges, Sustainability, Transport Planning, Waste Management, Water/Wastewater.

RYAN ASSOCIATES CONSULTING ENGINEERS

Unit C4, Nutgrove Office Park, Rathfarnham,
Dublin 4. D14 W6K3

T: +353 (0)1 299 0730

E: info@ryanassociates.ie

W: www.ryanassociates.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Valentine Ryan,** BSc, CEng, MIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

3

ABOUT THE FIRM

Established in 2003 we specialise in the design of building structures and associated civil engineering works and the monitoring of their construction. We are passionate about buildings and about our role in the design and construction process. We aim to deliver technically excellent, sustainable and cost-efficient solutions.

We believe in a collaborative process involving client, design team and contractors. This is key to achieving our common goal – another successful project.

ENGINEERING ACTIVITIES

Civil, Structural, Conservation, Project Management.

PROJECT TYPES

Domestic, Residential, Multi-storey Residential , Commercial Developments, Industrial and Warehousing , Retail, Offices, Hotels/Leisure, Schools, Healthcare, Nursing Homes, Conservation, Expert Reports.

RYAN HANLEY

1 Galway Business Park, Dangan, Galway. H91 A3EF

T: +353 (0)91 587 116

E: rhc@ryanhanley.ie

W: www.ryanhanley.ie

OFFICES

170/173 Ivy Exchange, Granby Place, Parnell Square West,
Dublin 1. D01 N938
T: +353 (0)1 297 3030

Innovation House, Moneen Road, Castlebar, Co. Mayo. F23 E400
T: +353 (0)91 587 116

Building 1000, Gateway Business Park, New Mallow Road, Cork.
T: +353 (0)91 587 116

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Ger Gibney,** BE, CEng, MIEI, FConsEI (Managing Director)
- **Elaine Shields,** BE, MEngSc, CEng, MIEI, MCIWEM, FConsEI

TOTAL EMPLOYEES

130

ABOUT THE FIRM

Founded in 1931. Present company formed in 1980.

ENGINEERING ACTIVITIES

Civil and Structural, Water, Wastewater, Drainage, Environmental, Flood Control, River Management, Water Conservation, Asset management, Roads, Traffic, Site Development, Structural Design of Buildings and Bridges, Project Management, Quantity Surveying, Statutory Compliance, Marine, Leisure.

PROJECT TYPES

Water Resource Planning, Water Treatment, Water Supply, Water Conservation, Water System Management, Drainage Urban, Hydrological Studies, Flood Control, Wastewater Treatment, Marine Outfalls, Environmental Impact Statements, Transportation, Traffic Analysis, Roads, Bridges, Building Design, Ecological Assessments and Reports.

SDS DESIGN ENGINEERS

Unit 9, N5 Business Park, Castlebar, Co. Mayo.

T: +353 (0)94 9034914

E: info@structuraldesign.ie

W: www.structuraldesign.ie

OFFICES

Dublin : Silverdale, Old Swords Road, Santry, D09 CA24
T: +353 (0)1 687 7480

London : Bridge House, 25-27 The Bridge, Wealdstone, Harrow. HA3 5AB
T: +44 203 026 6724

Spain : Calle Virgen de Guadalupe 44, Ubeda 23400, Jaen.
T: +34 662 556 212

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Danny Groarke,** MSc, BE, DIC, FConsEI

TOTAL EMPLOYEES

20

ABOUT THE FIRM

SDS design engineers is in our twentieth year of business. We are a design-focused civil, structural, architectural and geotechnical engineering practice. We employ architects and building engineers to enhance our service to clients. We are experts in the construction of low-rise buildings, the analysis of ground conditions, and foundation design. Our clients are in public and private sectors, including government bodies, developers, main contractors and owners. We work with clients across the UK, Ireland and Spain to create quality, efficient and sustainable design solutions for the future. Key to our success has been our long-term relationships with our existing client base who continuously re-engage with us on new projects and designs. Our reputation of excellence is a product of knowledge, teamwork, dedication, communication and total commitment to achieving top quality results. Our commitment to quality means that all contracts are continuously monitored and assessed to ensure that they are completed on time, within client budgets and most importantly, according to the company's and the clients' standards and specifications. Our highly skilled and experienced design team are fully competent with the most up to date software and are always available to offer you advice and design solutions on any challenges you may be facing on your project. By using our innovative and efficient design thinking we are always able to propose significant acceleration in construction activities.

ENGINEERING ACTIVITIES

Structural, Civil, Water/Waste Water, Geotechnical, Temporary Works, Assigned Certifier.

PROJECT TYPES

Residential, Commercial, Mixed Development, Industrial/ Warehousing/Data Centres, Education.

SEMPLE & MCKILLOP

Unit 6, Drumillard Retail Park, Monaghan Road, Castleblayney, Co. Monaghan. A75 KH60

T: +353 (0)42 974 9570

E: info@semplemckillop.com

W: www.semplemckillop.com

OFFICES

Belfast: Unit 4, Eastbank House, 3 Eastbank Road, Carryduff, Belfast BT8 8BD
T: +44 (0) 28 9033 1700

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Stephen Finch,** BEng, CEng, FIEI, FConsEI

TOTAL EMPLOYEES

43

ABOUT THE FIRM

As a multi award-winning practice, we have experience across all sectors. With significant new build and refurbishment works experience, our expertise is particularly strong within the education, healthcare, housing, retail and commercial sectors. We have developed an impressive local and international client base in both the public and private sectors.

ENGINEERING ACTIVITIES

Mechanical, Electrical, Plumbing, Low Carbon and Environmental Consultancy, Specialist Technical Services.

PROJECT TYPES

Education, Healthcare, Housing, Retail and Commercial sectors.

SIOBHAN FAHEY

Chartered Engineer and Chartered Arbitrator,
Gold Coast Road, Ballinacourty, Dungarvan,
Co. Waterford.

T: +353 (0)58 44505

E: siobhanfahey@protonmail.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Siobhan Fahey,** BA, BAI, LLB, DiplArb, CEng, MICE, MIEI, FCIArb, CIArb Accredited Mediator. FIDIC International Accredited Trainer. CIArb Accredited Adjudicator (Republic of Ireland), FIDIC President's List Adjudicator, FConsEI

TOTAL EMPLOYEES

1

ABOUT THE FIRM

Siobhan Fahey is a Chartered Civil Engineer who specialises in construction law. Her particular expertise is in the avoidance and resolution of construction disputes. An independent consultant since 2004, Siobhan spends her working life as an arbitrator, conciliator, adjudicator and mediator of construction and commercial disputes, but also provides advice and training on contracts, dispute avoidance and dispute resolution.

Siobhan became a Chartered Engineer in 1996, completed a law degree in 1997, obtained a postgraduate diploma in arbitration in 2000, became a Chartered Arbitrator in 2009, qualified as an Accredited Mediator with CIArb in 2011, an International Accredited Trainer with FIDIC in 2012 (Module 1) and 2013 (Module 2), a CIArb Accredited Adjudicator (Republic of Ireland) in 2014 and a FIDIC President's List Adjudicator in 2016. She has worked in Ireland, the United Kingdom, Europe and the Far East, for consulting engineering firms, government agencies, contractors and consultancy firms advising contractors and developers.

Siobhan is on the FIDIC President's List of Approved Dispute Adjudicators, and on the panels of Arbitrators and Conciliators held by Engineers Ireland and by the Chartered Institute of Arbitrators. She is Chair of the Dispute Resolution Board of Engineers Ireland.

She is a very frequent speaker at FIDIC international conferences, at FIDIC/ICC (International Chamber of Commerce) conferences, and at training workshops and seminars run by the Chartered Institute of Arbitrators and Engineers Ireland.

In FIDIC, Siobhan is:-
• Member of the Contracts Committee (CC),
• CC's 'Principal Drafter' for updating the FIDIC construction, plant & design-build and EPC/turnkey forms of contract
• Chair of CC's task group for updating the FIDIC DAB Rules,
• Chair of CC's task group for drafting Subcontracts for the Plant, Design and Build and EPC/Turnkey Projects forms of contract.

She was also a member of ICC's 'expert panel' for revision of the ICC Dispute Board Rules in 2015.

ENGINEERING ACTIVITIES

Arbitration / Mediation, Civil, Legal / Forensic, Dispute Resolution, Adjudication, Conciliation.

PROJECT TYPES

Civil Engineering and Commercial.

SWECO

Glandore, 3rd Floor City Quarter, Lapps Quay, Cork.
T12 Y3ET

T: +353 (0)21 206 3920

E: tara.oleary@sweco.ie

W: www.sweco.ie

OFFICES

Grove House Mansion Gate Drive Leeds, LS7 4DN
T: +44 113 262 0000

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Tara O'Leary**, CEng, CTPP, FConsEI

TOTAL EMPLOYEES

11

ABOUT THE FIRM

Sweco plans and designs the communities and cities of the future. The results of our work are sustainable buildings, efficient infrastructure and access to clean water. With 15,000 employees in Northern Europe, we offer our customers the right expertise for every project. We carry out projects in 70 countries annually throughout the world. Sweco is Europe's leading architecture and engineering consultancy.

ENGINEERING ACTIVITIES

Acoustics Environmental Noise & Vibration, Active Travel, Asset Management, BIM, Bridge Engineering, Building Acoustics, Building and Specialist Structural Engineering, Building Services, Building Structures, Carbon Management, Construction Supervision, Contaminated Land and Water Quality, Development Infrastructure, District Heating, Due Diligence Services, Ecology, E-mobility, Energy Storage, Environmental Impact Assessment/ EIAR, Expert Witness Services, Fire Engineering, Flood Risk Management, Gas to Grid and Biomethane Upgrading, Grid Services, Ground Engineering, Highway Engineering, Intelligent Building Solutions, Intelligent Transport Systems, Landscape Design, Multimodal Studies, Offshore Wind, Onshore Wind and Hydro, PAS 55/ISO 55000 Assessment and Certification, Pavement Engineering, Project Management, Rail, Real Time Systems and Data, Regulation, Risk and Value Management, Road Safety Audits, Site SCADA Systems,
Sludge Treatment, Solar, Stakeholder Management, Sustainable Development and Planning, Telemetry Systems, Thermal Biomass and CCGT, Traffic Engineering and Design, Transport Appraisal, Transport Economics, Transport Modelling, Transport Planning for Development, Transport Policy and Strategy, Transportation Feasibility Studies, Travel Behaviour Change, Travel Planning, Value Engineering, Waste and Regulatory, Waste and Resources Management, Wastewater Infrastructure, Wastewater Non-Infrastructure, Water Infrastructure, Water Non-Infrastructure, Water Resources.

PROJECT TYPES

Asset Management, Building Engineering, Energy, Environment, Transport Planning, Development Infrastructure, Transportation Infrastructure, Water, Landscape Architecture.

TG LENIHAN & CO

O'Brien Street, Kanturk, Co. Cork. P51 FK19

T: +353 (0)29 20900

E: info@lenihanengineers.com

W: www.lenihanengineers.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Tim Lenihan,** BE, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

6

ABOUT THE FIRM

Established in 2003, TG Lenihan has established a reputation in the region as being capable of providing a professional service in all aspects of civil and structural engineering. We have a track record in successfully completing large commercial and industrial projects. Based in a rural town, we also have established a reputation in the local community as providing civil engineering services, including house surveys, mapping, land surveys, fire certificates, DAC certificates and more.

ENGINEERING ACTIVITIES

Structural Design, Project Management, Assigned Certifiers.

PROJECT TYPES

Industrial Warehousing, Churches, Industrial Plants, Schools, Sports Stadia, Housing Developments, Agricultural.

THE McKENNA PEARCE PRACTICE

Unit 39, Spruce Avenue, Stillorgan Industrial Park, Stillorgan, Co. Dublin

T: +353 (0)1 289 7260

E: mail@mckennapearce.com

W: www.mckennapearce.com

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Jonathan A. O'Neill,** BSc(Eng), PDipProjMan, CEng, MIEI, MIStructE, FConsEI

TOTAL EMPLOYEES

4

ABOUT THE FIRM

Formed in 1996 by the amalgamation of Pearce Associates, Consulting Engineers (est.1981) and T.A.McKenna & Partners, Consulting Engineers (est. 1978). The aim of the practice is to provide effective engineering solutions consistent with our clients programme and budget.

ENGINEERING ACTIVITIES

Engineering Design: Structural,Civil, Building Refurbishment and Conservation; Safety: Fire Safety, Health & Safety (PSDP); Project Management: Feasibility Studies, Planning, Assigned Certifier, Insurance Claims & Investigations.

PROJECT TYPES

Commercial Developments including Retail and Office Complexes, Industrial and Manufacturing Developments, Residential Developments including Multi-Storey Apartments, Hotel, Leisure and Sports Complexes, Schools, hospitals and religious buildings, Aviation Projects, Domestic.

T.J. O'CONNOR & ASSOCIATES

Corrig House, Corrig Rd, Sandyford,
Dublin 18. D18 Y663

T: +353 (0)1 295 2321

E: tjoc@tjoc.ie

W: www.tjoc.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Edward Fitzgerald,** BE, CEng, MIEI, MICE, MCIWEM, FConsEI
- **Michael Moriarty,** BE, MEngSc, CEng, FIEI, FConsEI
- **Patrick J. Cassidy,** BE, DAL, Eur Ing, CEng, FIEI, MCIWEM, FCIArb, FConsEI
- **Siobhán Moneley,** B.E., MSc(Eng), PgCert BIM Tech, PgDip Collab. BIM, CEng, FIEI, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Diarmuid Cahalane,** BE, MEngSc, DipConstLaw, CEng, FIEI, CWEM, MCIWEM, RConsEI
- **Liam Clear**, BE, MICE, MCIWEM, CEng, RConsEI
- **John Meade,** BSc(Eng), Dip Eng, Dip Proj Mgmt, CEng, MIEI, MIStructE, RConsEI
- **Niall McCaffrey,** BSc(Eng), Dip Eng, PGDip H&S, PMP, CEng, MIEI, CertIOSH, RConsEI
- **Ronan McElwain,** BEng(Hons), MSc Mgmt, PGDip ABRC, PGDip H&S, CEng MIEI, MIStructE, MICE, CertIOSH, RConsEI
- **Ronan Doyle,** BEng(Hons), CEng, MIEI, CWEM, MCIWEM, RConsEI

TOTAL EMPLOYEES

52

ABOUT THE FIRM

Established in 1937 by Mr T. J. O'Connor and subsequently formed into T. J. O'Connor & Associates.

ENGINEERING ACTIVITIES

Civil and Structural Engineering.

PROJECT TYPES

Civil

Water Supply Schemes, Water Treatment Plants, Drainage Schemes, Waste Water Treatment Plants, Flood Relief Schemes.

Structural

Town Centres / Shopping Centres, Hospitals, Office Developments, Schools, Apartments, Industrial Buildings, Hotels.

BIM
Level 2 BIM / ISO 19650 compliant on all Civil and Structural Engineering Projects.

TOBIN

Block 10-4 Blanchardstown Corporate Park,
Dublin 15. D15 X98N

T: +353 (0)1 803 0401

E: info@tobin.ie

W: www.tobin.ie

OFFICES

Fairgreen House, Fairgreen road, Galway. H91 AXK8
T: +353 (0)91 565211

Market Square, Castlebar, Co Mayo. F23 Y427
T: +353 (0)94 902 1401

Unit 4, Cresent Court, St. Nessan's Road, Dooradoyle, Limerick. V94 V298
T: +353 (0)61 976262

1st Floor, Carroll House, Stephen Street, Sligo. F91 P7N2
T: +353 (0)71 9318844

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Michael McDonnell,** BE, MEngSc, MBA, CEng, FIEI, FConsEI
- **Ciaran McGovern,** BEng MBA CEng MIEI MInstD, FConsEI
- **Brian Gallagher,** BE, MEngSc, CEng, MIEI, FConsEI

TOTAL EMPLOYEES

172

ABOUT THE FIRM

Founded in 1952, TOBIN is a multidisciplinary design and project management practice, which adds value to new projects for a broad range of clients across the public and private sectors.

ENGINEERING ACTIVITIES

Building & Infrastructure, Water Services / Heavy Civils, Environmental & Planning.

PROJECT TYPES

Building & Infrastructure: Structural Engineering, Civil Engineering, Roads & Transportation Engineering, Specialist Sports Infrastructure Design, Project Management, Quantity Surveying & Cost Management, Contract Administration, Assigned Certifier, PSDP / Health & Safety, Planning Assistance Consultancy Services, Fire Safety & Disability Access Certificate Design.

Water Services / Heavy Civils: Public Works, Contractor Design (D&B), Major Flood Works, Flood Risk Assessments, Specialism – Modelling,

Environmental & Planning: Environmental Impact Assessments, Local Authority Planning Applications, Strategic Infrastructure Development (S.I.D.) Planning Applications, Waste Management Planning (Construction & Operational), Environmental Due Diligence Assessments, Appropriate Assessments / NIS, Construction & Environmental Management Plans, Contaminated Land Assessment & Remediation Due Diligence, Ecological Assessments, Ecological Clerk of Works (ECoW), Environmental Monitoring, Expert Witness for Oral Hearings, Groundwater Vulnerability Mapping, Hydrogeological Assessments.

TORQUE CONSULTING ENGINEERS LTD

Unit K26, Drinan Enterprise Centre, Swords Enterprise Park, Swords, K67 E722

T: +353 (0)1 485 3933

E: contactus@tcel.ie

W: www.tcel.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Ken Moriarty** (Managing) BSc(Eng), DipStructEng, CEng, FIEI, FIStructE, Eur Ing, FConsEI

TOTAL EMPLOYEES

2

ABOUT THE FIRM

Torque Consulting Engineers was founded in 2013 by Ken Moriarty. Based in Dublin, our vision is to provide excellent design coupled with strong personal relationships and customer satisfaction. Ken has a wealth of experience acting as project director on many significant public, commercial, retail, residential and protected structures. Ken is a Fellow of Engineers Ireland since 2013 and a Fellow of The Institution of Structural Engineers since 2015. Torque Consulting Engineers is committed to providing clients with friendly, personal and professional service from inception of the project to practical completion and beyond.

ENGINEERING ACTIVITIES

Structural Engineering, Civil Engineering, Project Management.

PROJECT TYPES

Structural Engineering projects of any size across all sectors, Civil Engineering, Engineering Inspection & Assessment Reports, Due Diligence Reports, Feasibility Studies, Value Engineering, Planning & Development, Protected Structure refurbishment.

VARMING CONSULTING ENGINEERS LTD

Classon House, Dundrum Business Park, Dundrum Road, Dublin 14. D14 V9F5

T: +353 (0)1 487 2300

E: varming@varming.ie

W: www.varming.ie

OFFICES

3 Eastgate Road, Eastgate Business Park, Little Island, Cork. T45 KH74
T: +353 (0)21 237 5080

Castle Street, Roscommon. F42 V276
T: +353 (0)90 660 2380

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **James Kavanagh,** CEng, EurIng, BSc (Hons) Eng, DipEng, MCIBSE, MIEI, M Inst D, FConsEI
- **Joseph Greene,** BSc Elect Eng, CEng, MIEI, FConsEI
- **Declan Doyle,** BSc Elect Eng, CEng, MIEI, FConsEI
- **Sean Neary,** BE (Hons), CEng, MIEI, MCIBSE, FConsEI

TOTAL EMPLOYEES

53

ABOUT THE FIRM

Founded in 1946. Linked to Varming offices in London, Edinburgh, Sydney, Copenhagen, Hong Kong and New York. Integrated Quality Assurance Environment & Health and Safety Certification Systems to IS EN ISO 9001:2015, IS EN ISO 14001:2015, IS ISO 45001:2018. EI Accredited CPD Company.

ENGINEERING ACTIVITIES

Mechanical and Electrical Building Services, MV Installation Design, IT & Utility Infrastructure Planning, Energy Efficient Design Expertise, Dynamic Simulation Modelling, BREEAM Assessments, Passive House Design, Infrastructure Planning, Fire Protection & Security Systems Engineering, Regulatory Compliance, Sustainable Design, Energy Modelling, Project Management, Project Supervisor Design Process.

PROJECT TYPES

Healthcare Buildings, Public and Commercial Office Buildings, Residential Buildings, Educational Buildings, Hotels & Conference Centres, Retail Shopping Centres, Classified Laboratories, Cleanrooms, Industrial Production Buildings, Period/Historical Buildings.

WATERMAN MOYLAN

Block S, Eastpoint Business Park, Alfie Byrne Road, Dublin 3. D03H3F4

T: +353 (0)1 664 8900

E: info@waterman-moylan.ie

W: www.waterman-moylan.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEERS

- **Brian McCann,** BE, MSc(Eng), DIC, CEng, MIStructE, FIEI, FConsEI
- **John Moylan,** BE, CEng, MIEI, FConsEI
- **Paul O'Connell,** BE, MS, CEng, MIEI, MICE, FConsEI
- **Richard Osborne,** BEng (Hons), CEng, MIEI, FConsEI

RConsEI - ACEI REGISTERED PROFESSIONAL CONSULTING ENGINEERS

- **Eoghan Loughrey,** BSc(Eng), DipEng, DipBldgConsr, CEng, Eur Ing, MIEI, MICE, RConsEI
- **Mark Duignan,** MA, BAI, CEng, MIEI, RConsEI
- **Michael Conneally,** BE, CEng, MIEI, CPEng, IntPE, RConsEI
- **Niall Coughlan,** BAI, CEng, RConsEI
- **Margaret Dolan,** Tech Cert, BSc(Hons), CEng, MIEI, RConsEI
- **Ian Worrell,** BScEng, DipEng, CEng, MIEI, DipPhysPlg, RConsEI
- **Kevin Farrell,** CEng, MEng, BSc Deg, MIEI, RConsEI

TOTAL EMPLOYEES

101

ABOUT THE FIRM

Waterman Moylan was established in 1980 and joined the Waterman group in 2000. It offers civil, structural, mechanical, electrical and construction related health and safety consultancy and design services for the built environment to its clients.

The firm provides professional services throughout the complete life cycle of an asset, starting from initial surveys and concept planning through to design, delivery, project management, construction monitoring and ongoing maintenance. Its core values are excellence in engineering standards allied to a focus on delivering practical and economic solutions for its clients.

Working with government agencies, local authorities and private sector clients to provide innovative, sustainable and economic solutions across a wide spectrum of business activities, Waterman Moylan has delivered a diverse range of projects across all main market sectors ranging from city centre regeneration to new highway schemes; mixed use development to signature education buildings; large commercial offices to public realm enhancement.

The firm operates an integrated management system which is accredited to ISO 9001 and ISO 14001 to ensure a consistent high quality of service to its clients.

ENGINEERING ACTIVITIES

Civil, Structural, Marine, Traffic, Transportation, Building Services, BREEAM/LEED Assessment, Project Management, Health and Safety.

PROJECT TYPES

Offices, Residential, Retail, Leisure Facilities, Public Buildings, Schools, Hospitals, Industrial Buildings, Conservation, Refurbishment, Roads, Bridges, Drainage, Water Supply, Railways, Site Development, Marinas, Ports and Harbours, Traffic, Waste Management, Surveys.

WEW ENGINEERING LTD

39B Hebron Industrial Park, Kilkenny. R95 C43W

T: +353 (0)56 7763932

E: info@weweng.ie

W. www.wewengineering.ie

FConsEI - ACEI FELLOW PROFESSIONAL CONSULTING ENGINEER

- **Seamus Crickley**, BE, Eur Ing, CEng, FIEI, WEF, RGFI, FConsEI

TOTAL EMPLOYEES

15

ABOUT THE FIRM

WEW Engineering Ltd. is a multi-disciplinary specialist consulting engineering company and is dedicated solely to the water, biorenewables, energy/bio-energy and wastewater sectors. The lead engineers have each worked at the cutting edge of water industry developments for more than 40 years and are recognised by their engineering colleagues as experts in their fields of specialist consultancy, both in the municipal and industrial areas. WEW is registered by Enterprise-Ireland Climate Fund green service provider.

The company undertakes process design integrated with MEICA selections to provide the most sustainable answers to any water/ wastewater/solids application and uses innovation engineering to transfer proven R&D and emerging technologies to field level utilising BAT.

Service areas include masterplanning, brownfield plant surveys (process/MEICA), comparative evaluation/reporting of feasible alternatives, detailed process and works design with BIM 3D AutoCad drawings, specifications, PSDP, project management, certification, planning/design/commercial evaluation of bio-energy system concepts, energy modulation to minimise carbon footprint, decarbonisation facility with sustainability analysis with CEAP compliance, treatment/ re-use of nutrients and CO2, organic solids to co-product condensates,water reuse by advanced treatment, odour removal, licencing/planning and expert witness representation.

WEW are represented on EBA and BIP EU working groups on green technologies. WEW's client base includes end clients, consulting engineers, project management companies, contractors/developers, international project design agencies on national and international projects.

ENGINEERING ACTIVITIES

Water, Energy, Bio-Energy, Renewables, Wastewater, PSDP, Project Management.

PROJECT TYPES

Municipal, Industrial, Water, Wastewater, Energy, Bio-Energy, Process design, R&D and emerging technologies, Masterplanning, Brownfield plant surveys (process/MEICA), Comparative evaluation/reporting of feasible alternatives, Detailed process and works design, BIM 3D AutoCad drawings, Certification, planning/design, design and commercial evaluation of bio-renewables systems, Energy modulation to minimise carbon footprint, Carbonation evaluations, treatment, Licencing/planning and expert witness.

Lighthouse Construction Industry Charity

IF YOU'RE STRUGGLING, HELP IS HERE!

The Lighthouse Construction Industry Charity is the only charity dedicated to providing support for construction workers and their families.

Helpline

24/7 FREE AND CONFIDENTIAL ADVICE TO ANYONE WORKING IN CONSTRUCTION

ROI 1800 939 122 UK 0345 605 1956

TEXT HARDHAT TO ROI 50808 OR UK 85258

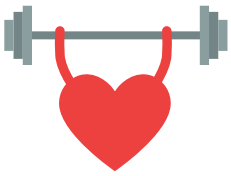
Supported by:

We give information, advice and guidance and if required telephone counselling on:

EMOTIONAL WELLBEING COVERING

- STRESS
- ANXIETY
- DEPRESSION
- ANGER
- SLEEP
- SUICIDAL THOUGHTS

+



PHYSICAL WELLBEING COVERING

- OCCUPATIONAL HEALTH
- ACHES AND PAINS
- NUTRITION
- WEIGHT MANAGEMENT
- CANCER SUPPORT
- ALCOHOL & DRUG ADDICTION

+

FINANCIAL WELLBEING COVERING

- EMERGENCY FINANCIAL AID
- STATE BENEFIT ENTITLEMENT
- BUDGETING
- DEBT MANAGEMENT
- TAX, CIC AND LEGAL ADVICE
- RETIREMENT PLANNING

#MakeItVisible

SUPPORTING WELFARE AND WELLBEING IN CONSTRUCTION

Access FREE Support

MakeItVisible.info

UK Charity Registration No 1149488 | ROI Charity Registration No 20200334 | Company Registration No 08244118

ACEI REGISTER OF PROFESSIONAL CONSULTING ENGINEERS

NAME	FIRM
FConsEI - ACEI Fellow Professional Consulting Engineers	
Rafid Ajina	Muir Associates Ltd
Vincent Barrett	Barrett Mahony Consulting Engineers
Shane Belton	BCE, Belton Consulting Engineers Ltd
Kevin Brackfield	Brackfield Consulting Ltd
Colin Brennan	David Kelly Partnership
David Brennan	BDP
Nael G. Bunni	Bunni & Associates Ltd
Rory Burke	J.V. Tierney & Company Ltd
Joe Burns	Arup
John J. Campbell	J.J. Campbell & Associates
John Carr	Heavey Kenny Associates
Gerry Carty	RPS Consulting Engineers
John Casey	Cora Consulting Engineers
Patrick J. Cassidy	T.J. O'Connor & Associates
Niall Clarke	Kavanagh Mansfield & Partners
Andrew Clifford	J.V. Tierney & Company Ltd
Patrick Coleman	P. Coleman & Associates
Paul Condron	PCCE Paul Condron Consulting Engineer Ltd
Anne-Marie Conibear	J.B. Barry & Partners Ltd
John Considine	Barrett Mahony Consulting Engineers
Seamus Crickley	WEW Engineering Ltd
Jerry Cronin	Nicholas O'Dwyer Ltd
Alan Curran	RPS Consulting Engineers
Ray Curran	McElroy Associates
Eamon Daly	J.B. Barry & Partners Ltd
Gregory Daly	GDCL Consulting Engineers Ltd
Marcus Dancey	C S Pringle
Bernard Denver	Metec Consulting Engineers
Dermot Donovan	Roadplan Consulting Ltd
Dermot Doran	MMA Consulting Engineers Ltd
Pearse Douglas	Douglas Carroll Consulting Engineers
Cian Dowling	Axiseng M&E Ltd
Declan Doyle	Varming Consulting Engineers
Gerard Doyle	Cundall Ltd
Geoff Emerson	Clifton Scannell Emerson Associates
Joseph Ennis	JAE Engineering Ltd
Glen Faherty	MTW Consultants Ltd
John Fahey	Fahey O'Riordan Consulting Engineers
Siobhan Fahey	Siobhan Fahey
Damien Fallon	D. Fallon Consulting Engineers
Mark Fallon	Fallon Design
Peter Fay	Malachy Walsh and Partners (MWP)
Patrick Field	O'Connor Sutton Cronin
Stephen Finch	Semple & McKillop
Emmet Finegan	Doherty Finegan Kelly
Edward Fitzgerald	T.J. O'Connor & Associates
Niall Fitzgerald	Horganlynch Consulting Engineers
James Fogarty	Environmental Design Partnership
Paul M. Forde	DBFL Consulting Engineers
Frank Fox	Frank Fox & Associates
Emmet Furey	Furey Consulting Engineers Ltd
Brian Gallagher	TOBIN
Ger Gibney	Ryan Hanley
Mark Gill	Fearon O'Neill Rooney
Raymond D. Goggin	Molony & Millar
Joseph Greene	Varming Consulting Engineers
Danny Groarke	SDS design engineers
John Hayes	DBFL Consulting Engineers
Joseph Healy	Jennings O'Donovan & Partners Ltd
Paul Healy	O'Connor Sutton Cronin

NAME	FIRM
Paul Henry	CHH Consulting Engineers
Joseph W. Hogan	JWHA
Brian Homan	Homan O'Brien Associates
Anthony Horan	O'Connor Sutton Cronin
Michael Hughes	Barrett Mahony Consulting Engineers
Norman Irvine	McCrae Consulting Engineers Ltd (MCE)
Michael Jackson	Hanley Pepper
Caimin Jones	Garland
Richard M Jones	Roughan & O'Donovan
Liam Kavanagh	Don O'Malley & Partners Ltd
Brian Kavanagh	Garland
James Kavanagh	Varming Consulting Engineers
John Keane	DBFL Consulting Engineers
Raymond F. Keane	RKA Consulting Engineers
Derry Kearney	Cundall Ltd
Gerard Keating	Homan O'Brien Associates
Pádraic Keena	Malachi Cullen Consulting Engineers Ltd
John Kelly	David Kelly Partnership
Cathal Kelly	Doherty Finegan Kelly
Eugene Kelly	Malone O'Regan
Ciarán Kennedy	Barrett Mahony Consulting Engineers
David Kiely	Jennings O'Donovan & Partners Ltd
Mark Kilcullen	Roughan & O'Donovan
Morgan Kilgallen	Kilgallen & Partners Consulting Engineers Ltd
John Killian	Killian Consulting Engineers
Brian Lahiff	Garland
James Langan	Langan Consulting Engineers
James G. Lawler	DBFL Consulting Engineers
Joe Lee	J.V. Tierney & Company Ltd
Tim Lenihan	TG Lenihan & Co
Liam Luddy	Arup
David Lynch	LED (Lynch Engineering Design)
Seamus MacGearailt	Roughan & O'Donovan
Ciarán MacIntyre	Carraig Consultants
Brian Madden	O'Connor Sutton Cronin
Willie Madden	RPS Consulting Engineers
Brian Mahony	Barrett Mahony Consulting Engineers
Ken Manley	MHL & Associates Ltd
James Mansfield	Kavanagh Mansfield & Partners
Tom Markham	MTW Consultants Ltd
Brian McCann	Waterman Moylan
Patrick McCaul	Patrick McCaul Environmental Consulting Engineers Ltd
Michael McDonnell	TOBIN
John McElvaney	Jennings O'Donovan & Partners Ltd
Tadhg McGillicuddy	MRG Consulting Engineers Ltd
Conor McGinn	Engineering Design Consultants Ltd
Ciarán McGovern	TOBIN
Gareth McGowan	OBMG Ltd
Grellan McGrath	RPS Consulting Engineers
Martin McGrath	O'Connor Sutton Cronin
David McHugh	RPS Consulting Engineers
Gavin McHugh	Downes Associates
Stephen McQuade	2HQ Consulting Engineers Ltd
Harry Meighan	Roughan & O'Donovan
Michael Mescal	Mescal & Associates
Gerard Monaghan	Nicholas O'Dwyer Ltd
Peter Monahan	PMCE Ltd
Siobhán Moneley	T.J. O'Connor & Associates
Paul Moran	Pat O'Gorman & Associates
Peter Morehan	J.B.Barry & Partners Ltd
Ken Moriarty	Torque Consulting Engineers Ltd
Michael Moriarty	T.J. O'Connor & Associates
John Moylan	Waterman Moylan

NAME	FIRM
Roger Mullarkey	Roger Mullarkey & Associates
Tim Murnane	PUNCH Consulting Engineers
Cian Murphy	PUNCH Consulting Engineers
Karel Murphy	Horganlynch Consulting Engineers
Paul Murphy	JODA Engineering Consultants
Sean Neary	Varming Consulting Engineers
Jim Oliver	Nicholas O'Dwyer Ltd
Simon O'Brien	Homan O'Brien Associates
Ciarán O'Brien	OBA Consulting Engineers
Andy O'Brien	O'Connor Sutton Cronin
Donnachadh O'Brien	Donnachadh O'Brien & Associates Consulting Engineers
Niall O'Callaghan	Kilgallen & Partners Consulting Engineers Ltd
Paul O'Connell	Waterman Moylan
Stephen O'Connor	Barrett Mahony Consulting Engineers
Michael O'Doherty	Delap & Waller
Conor O'Donnell	AGL Consulting
Maurice O'Donoghue	J. B. Barry & Partners Ltd
Clodagh O'Donovan	Arup
Edward O'Donovan	PHM Consulting Ltd
Jerome O'Donovan	JODA Engineering Consultants
John O'Donovan	NJ O'Gorman & Associates
Richard O'Farrell	Engineering Design Consultants Ltd
Niall O'Kane	Patrick McCaul Environmental Consulting Engineers Ltd
Aonghus O'Keeffe	Roughan & O'Donovan
Tara O'Leary	SWECO
Jonathan A. O'Neill	The McKenna Pearce Practice
Michael O'Reilly	O'Connor Sutton Cronin
Brian O'Rourke	O'Connor Sutton Cronin
Richard Osborne	Waterman Moylan
Dermot O'Shea	David Kelly Partnership
Christy O'Sullivan	RPS Consulting Engineers
Joseph O'Sullivan	Paul Twomey & Associates Ltd
Kevin Pepper	Hanley Pepper
Audrey Phelan	Jennings O'Donovan & Partners Ltd
John Pigott	Cora Consulting Engineers
Jose Poveda	Fearon O'Neill Rooney
Liam Prendiville	J. B. Barry & Partners Ltd
Maurice Ramsay	Metec Consulting Engineers
Dan Reilly	DBFL Consulting Engineers
David Rehill	David Rehill Consulting
Daniel Ring	Noel Lawler Consulting Engineers
Kevin Rudden	Garland
Joseph Ryan	Hanley Pepper
Peter Ryan	Hendrick Ryan + Associates
Valentine Ryan	Ryan Associates Consulting Engineers
Colm Saul	J.V. Tierney & Company Ltd
Brendan Sheehan	BJS Consultants Ltd
Terry Sheehan	EirEng Consulting Engineers
Elaine Shields	Ryan Hanley
Michael Slattery	Michael Slattery Associates
Aidan Smith	Clifton Scannell Emerson Associates
Ronan Stokes	PUNCH Consulting Engineers
Pearse Sutton	CS Consulting Group
Aislinn Tate	JAE Engineering Ltd
Jim Thorpe	Roughan & O'Donovan
Eamon Timoney	Fehily Timoney & Company
Sinéad Timoney	Fehily Timoney & Company
Kevin P. Tracey	A1 ENG
Fergus Whelan	Malone Group
Ciaran Wallace	Hugh Munro & Co Ltd
Stephen Walsh	J.V.Tierney & Company Ltd
Gordon White	Gordon White Consulting Engineers
Robert White	Engenuiti Consulting Engineers

NAME	FIRM

RConsEI - ACEI Registered Professional Consulting Engineers

Niall Barrett	CS Consulting Group
Declan Barry	O'Connor Sutton Cronin
Brendan Brice	RPS Consulting Engineers
Damien Byrne	CS Consulting Group
Diarmuid Cahalane	T.J. O'Connor & Associates
Liam Clear	T.J. O'Connor & Associates
Michael Conneally	Waterman Moylan
Eamon Cox	RPS Consulting Engineers
Niall Coughlan	Waterman Moylan
Ian Crehan	O'Connor Sutton Cronin
Margaret Dolan	Waterman Moylan
Shaun Doody	O'Connor Sutton Cronin
Paul Doyle	Donnachadh O'Brien & Assoc Consulting Engineers
Ronan Doyle	T.J. O'Connor & Associates
Mark Duignan	Waterman Moylan
Simon Dunne	Garland
Kevin Farrell	Waterman Moylan
Robert Fitzmaurice	CS Consulting Group
Liam Heffernan	Barrett Mahony Consulting Engineers
Patrick Kavanagh	BDP
Richard Kiernan	Donnachadh O'Brien & Assoc Consulting Engineers
Peter King	Roughan & O'Donovan
Eoghan Loughrey	Waterman Moylan
Eddie Lyons	O'Connor Sutton Cronin
Niall McCaffrey	T.J. O'Connor & Associates
Gemma McCarthy	Mott MacDonald Ireland
Gareth McElhinney	RPS Consulting Engineers
Ronan McElwain	T.J. O'Connor & Associates
Mark McEntee	CS Consulting Group
Rachel McKenna	Axiseng M&E Ltd
Luke McNamee	CS Consulting Group
Paul McSteen	O'Connor Sutton Cronin
John Meade	T.J. O'Connor & Associates
Tommy Morey	Garland
Eoin O'Catháin	Roughan & O'Donovan
Rowan O'Callaghan	RPS Consulting Engineers
Daire O'Riagáin	Roughan & O'Donovan
Kevin O'Riordan	PUNCH Consulting Engineers
Paul O'Riordan	RPS Consulting Engineers
Andrew Thomson	Roughan & O'Donovan
Cian Twomey	CS Consulting Group
Edward Warren	Roughan & O'Donovan
Cormac Woods	RPS Consulting Engineers
Ian Worrell	Waterman Moylan

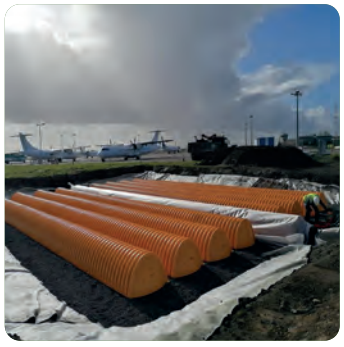
ACEI Honorary Members

Finbar Callanan
Derrick Edge
Frank McGrath
Kevin S. McLoughlin
Eamon O'Brien
Kerry O'Sullivan
Terence O'Neill
John Lombard
Michael J. Gannon
Michael McSweeney
Eamonn Waldron
John Egan
John K. Purcell
Michael Garrick
Noel Kane
Tony Horan
Richard Crowe
Finn Ahern
Conor McCarthy

CUBICM3 IS IRELAND'S LEADING PROVIDER OF SUSTAINABLE ENGINEERING SOLUTIONS

STORMWATER ATTENUATION
SOLAR PANELS
COLD WATER STORAGE
SEPTIC SOLUTIONS
OIL SEPARATORS
EV CHARGING STATIONS
FLOW CONTROLS
ASHFORD FORMULA

INSTALLING FOR:
COMMERCIAL
INDUSTRIAL
RESIDENTIAL
INFRASTRUCTURE & PUBLIC WORK DEVELOPMENTS



PROUDLY FOUNDED IN IRELAND IN 2003

01 808 4330
www.cubicm3.com
sales@cubicm3.com

ENGINEERS IRELAND
cpd ACCREDITED EMPLOYER

CUBICM3
Celebrating 20 Years