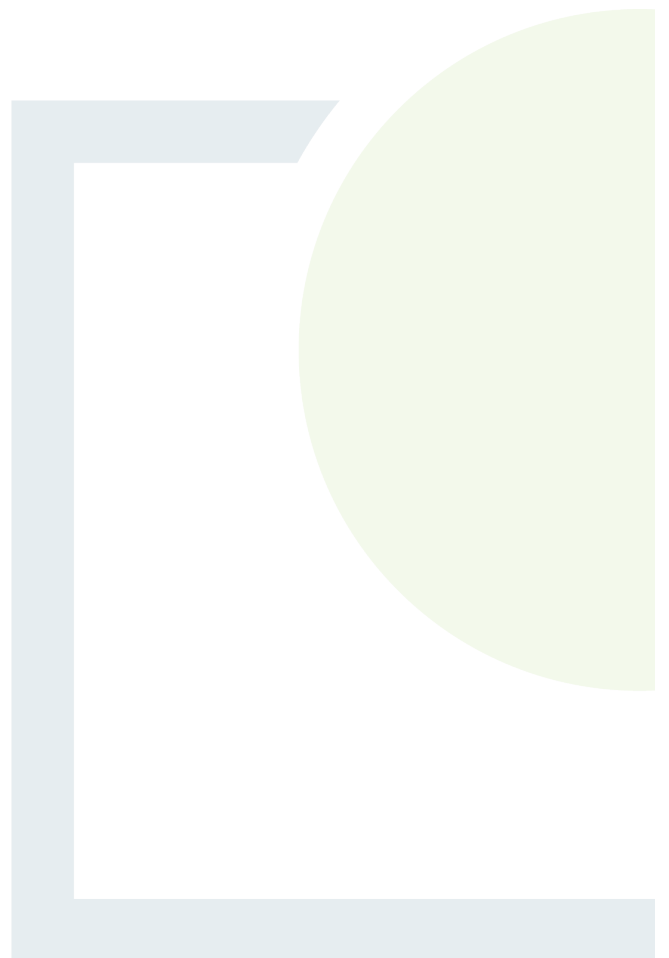




CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Appendix 1.2

Cirricula Vitae





Jim Hughes

Director of Energy & Planning



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Jim Hughes is the Director responsible for the Energy and Planning Department. Jim has a BA in Public Administration (Development) from the University of Limerick, a Masters in Town Planning from Queens University Belfast and a Diploma in EIA/SEA Management from University College Dublin. Jim is also a member of the Irish Planning Institute.

Jim is a Qualified Town and Environmental Planner with over 19 years post qualification planning experience in both the private and public sector. He has extensive experience in providing strategic level advice to clients and negotiating with and presenting to local authorities. Jim has experience in the management and coordination and the preparation of planning applications, masterplans and Environmental Impact Statements for large scale infrastructure projects throughout Ireland. He has specific experience in the renewable energy sector. Jim has represented clients on planning enforcement matters and as expert witness at oral hearings. He is also experienced in peer review and preparation of independent planning assessments and appraisals on behalf of clients.

Key Skills

Jim's experience includes:

- Project Director for multiple renewable energy projects throughout Ireland
- Lead planning consultant for major road infrastructure projects and waste projects.
- Highly qualified and experience in Irish and European planning and environmental law.
- Over 19 years as an IPI accredited Town Planner
- Acted as expert witness at ABP Oral Hearings and in Judicial Review Hearings and High Court Cases.
- Extensive experience in Offshore Renewable Energy delivery.

Previous Experience Essentials for This Project

2023

- Project Director on the Shelmalare Offshore Wind Farm delivering the Environmental and Planning Consultancy aspects of the project.
- Project Director on EIA Scoping and Foreshore license applications for multiple offshore renewable energy projects
- Project Director on the SEA and AA of the Eirgrid Grid Implementation Plan 2023.
- Project Director on multiple onshore Solar Farms
- Project Director on multiple onshore Wind Farms
- Project Director on onshore Battery Storage Energy Systems

2022

- Project Director Annagh Wind Farm, Co. Cork
- Project Director Ballinagree Wind Farm, Co. Cork
- Project Director Barnadivane Wind Farm, Co. Cork
- Project Director Fahy Beg Wind Farm, Co. Clare
- Project Director Multiple Solar farm planning projects
- Project Director for a portfolio of 4 no. Synchronous Compensator units.

2020

- Project Director for Croaghaun Wind Farm, Co. Carlow
- Project Director for Coom Green Energy Park, Co. Cork

Key Information

Qualifications

BA in Public Administration (Development), University of Limerick (2002)

MSc. Town Planning, Queens University Belfast (2004)

Diploma in EIA/SEA Management, University College Dublin (2008)

Professional Memberships

Member of the Irish Planning Institute

Employment History

2020 – Present

Fehily Timoney & Company
Director

2017 – 2020

Fehily Timoney & Company
Associate Director

2015- 2017

Fehily Timoney & Company
Senior Planner

2007 – 2015

Cunnane Stratton Reynolds (SCR)
Senior Planner

2004 – 2007

Cork County Council
Area Planner



Jim Hughes

Director of Energy & Planning



CONSULTANTS IN ENGINEERING,
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& PLANNING

- Project Director for multiple solar farm planning applications
- Project Director for Dernacart Wind Farm, Co. Laois

2019

- Project Director on the Kipaddogue Peaking Plant ancillary grid infrastructure development, Co. Kerry. Planning Strategy and Environmental Report
- Project Director on a 12 wind turbine development in Co. Kildare, Drehid Wind Farm.
- Project Director on the carrying out of masterplan and feasibility assessment on brownfield industrial sites in Nenagh and Roscrea on behalf of Zinc Properties
- Project Director on up to 10 Solar Farms
- Portfolio management of Shannon Commercial Properties portfolio of properties in mid-west region, including planning appraisals, zoning submissions and masterplan.

2018

- Planning Lead on the South Kerry Greenway EIAR
- Project Director for Derrysallagh Wind Farm Grid Route rEIAR
- Project Director for Raragh Wind Farm Grid Route EIAR.
- Project Director on Kilbarry Residential Development, consisting of 800-unit residential scheme.
- Project Director on 19 no. unit residential development, Cork South Docklands
- Project Director 100-unit Roxborough Residential Scheme, Co. Wexford
- Project Director 100-unit Bettystown Residential Scheme, Co. Meath.
- Project Director 300-unit Enniscorthy Residential Scheme, Co. Wexford
- Project Director for Derrysallagh Wind Farm EIA.

2017

- Review of Strategic Environmental Assessment and Appropriate Assessment for the nationwide Catchment Flood Risk Assessment and Management Plans
- SEA Screening for the Bandon Transportation and Public Realm Enhancement Plan
- Provision of planning advice on substitute consent applications for wind farm, Derrysallagh Wind Farm
- Provision of planning advice on the successful Maighne Wind Farm Judicial Review
- Provision of planning advice on the preparation of an EIA for the Raragh Wind Farm cable route planning application
- Project manager for Moanvane Wind Farm proposal, Co. Offaly.

2016

- Preparation of and SEA and AA in conjunction with CAAS Ltd. of the Wind Energy Strategy for Co. Tipperary 2016
- Project Management of Castletownmoore Wind Farm SID application Co. Meath
- Project Director on the preparation of approximately 20 no. solar farm planning applications nationwide
- Preparation and coordination of planning application for 50 no. dwelling units in Croom Co. Cork
- Planning Advice and negotiation for a 49,000 tonne Metal Recycling Facility, Limerick
- Planning advice on the Derragh Wind Farm Judicial Review
- Preparation of an integrated tourism masterplan for tourism site on the banks of the River Shannon Co. Clare
- Preparation and submission of planning application for a recreation facility at the old Burlington Plan, Co. Clare
- Development Plan submissions and retained Planning Consultant for Shannon commercial Properties, provide planning advice and strategy for the management of portfolio of property in the mid-west region.

2015

- Management and coordination of a design team for An Bord Pleanála Oral Hearing in Cork for a mixed-use Retail Development, Ballyvolane, Co. Cork
- EIS, RIA and planning application for a mixed-use District Centre Development, Cork
- Project Manager Ardglass Wind Farm, Co. Cork.

2008 – 2014

- SID Pre-Planning consultation with An Bord Pleanála for a Local Authority Marina development in Cork
- Strategic Review of Dursey Island and Cable Car. In conjunction with AECOM and TDI, an overall economic and tourism development strategy was developed for Dursey Island
- Development Plan Monitoring and submissions on behalf of a large international Financial Institution
- EIS, RIA and planning application for a mixed-use retail development, Clonmel
- Feasibility Assessment for Waste to Energy facility, Co. Clare



Jim Hughes

Director of Energy & Planning



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

-
- Co-ordinating a multi-disciplined team; contributed to EIS and planning submission for the regeneration of the south-western docklands area of Waterford City. The scheme consisted of 11 no. development blocks ranging in height from one floor to thirty floors over basement level.
 - Coordinated a multi-disciplined team of 5 Architects and preparation of EIS and planning submission for the regeneration of the south docklands area of Cork City. The proposed development was the largest planning application ever to be lodged with Cork City Council. 2007.
 - Coordinated the lodging of a planning application, contributed to EIA and response to Third Party appeal for a mixed-use development consisting of retail, commercial, residential, tourism, leisure development, Waterford City.
 - Contribute to EIA for Road and Bridge Infrastructure for Cork City Council including preparation of a scoping document and public consultations.



Aaron Clarke

Principal Geologist



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Aaron is a Principal Geologist with Fehily Timoney’s Infrastructure Team, providing specialist advice for multi-disciplinary projects across Ireland and the UK, including the scoping, procurement and management of large-scale ground investigations.

He has over 18 years’ experience working as a geologist; of which, nine years’ have been spent within ground engineering. Aaron holds contractor experience working within the ground investigation sector as well as a background in the supervision of earthwork operations on highways projects such as the M11 extension and M7 upgrade schemes as Designers Site Representative.

He is result-driven and analytically minded with broad experience leading and assisting with large multidisciplinary projects within the ground engineering and mineral exploration sectors. He is a highly motivated and experienced geologist, enabling him to identify and critically assess potential geohazards likely to affect the design and implementation of engineering projects and mining operations.

Key Skills

- Strong written and verbal communication
- Stakeholder management
- Ground model development
- Assessment of geohazards
- Geological mapping
- Rock mass assessments
- Desk studies & site surveys
- Earthwork & piling supervision
- Project Management
- Scoping & management of ground investigations & drilling programmes
- Karst assessment
- Input into EIARs (Land & Soils Chapter)
- Rock & Soil logging
- Developed report writing skills
- GIS
- CAD
- RocScience.

Publications

- Clarke A, Parkes M, Gatley S, (2007) The Geological Heritage of Fingal, Geological Survey of Ireland Publications
- Clarke A, Parkes M, Gatley S, (2007) The Geological Heritage of Meath, Geological Survey of Ireland Publications
- Clarke A, Parkes M, Gatley S, (2007) The Geological Heritage of Kilkenny, Geological Survey of Ireland Publications
- Parkes M, Clarke A, (2005) The Geological Heritage of Kildare, Geological Survey of Ireland Publications

Key Information

Qualifications

MSc. Applied Geotechnics
Camborne School of Mines, UK
2012

BSc. (Hons) Earth Sciences,
NUI Galway
2004

Professional Memberships

PGeo – Institute of Geologists of
Ireland

EurGeol – European Federation
of Geologists

Employment History

2022 – Present

Fehily Timoney & Company
Principal Geologist

Jan 2018 – Jan 2022

AECOM Ireland
Senior Engineering Geologist

2016 - 2018

ARUP Ireland
Assistant to the Designers’ Site
Representative

2015 – 2016

Geo Consulting Engineering Ltd.
Senior Engineering Geologist

2012 – 2015

EM Highway Services Ltd.
Engineering Geologist

2008 – 2011

Teck Resources
Lead Geologist

2007 – 2008

GHD Group Pty Ltd
Site Engineer

2004 – 2007

Geological Survey Ireland
Consultant Geologist



Aaron Clarke
Principal Geologist



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Previous Experience

- **Tynagh Power Station, EP UK Investments, Tynagh, Co Galway, June 2021 – Feb 2022**

Lead Engineering Geologist. AECOM were commissioned to prepare an Environmental Impact Assessment Report (EIAR) in relation to a planning application for a new Open Cycle Gas Turbine (OCGT) plant and associated infrastructure. As part of the works a ground investigation was completed to inform the EIAR and OCGT design. As lead engineering geologist Aaron was responsible for scoping, procurement and management the ground investigation. He was also responsible for input into the Land and Soils chapter as well as other chapters and appendices within the EIAR. The proposed development is located within the former Tynagh Mine site, which posed significant challenges with respect to geotechnical and environmental constraints. Aaron's background within the mineral extraction industry allowed him to appropriately assess available mining data and to convey this information to the different specialties within AECOM's working group.

- **SCPX Erosion Report, South Caucasus Pipeline Company, Azerbaijan, September – August 2021**

Lead Engineering Geologist/Technical Lead. Following construction of the South Caucasus Pipeline in Azerbaijan, an annual programme of erosion control monitoring surveys was completed. AECOM were commissioned to report the findings of these surveys, which were undertaken by a third party appointed by the Client. The objective of the reports was to summarise the findings of the erosion control monitoring survey and to analyse the findings in the context of the local ground conditions and recommend remedial actions to rectify significant erosion observed and/or to prevent deterioration of erosion control measures that are in place. Aaron was responsible for reporting on the second round of erosion control monitoring. This required a detailed understanding of soil erosion processes and appropriate control measures. Aaron recognised the limitations associated with reviewing and analysing third party data and made a number of key recommendations to improve the data transfer process thereby reducing overall risk to both the Client and AECOM.
Value: <€10K.

- **Derraghadoan Slate Quarry - Environmental Monitoring Plan, Lafarge Ireland Ltd, Dungannon, Co. Tyrone, May – June 2021**

Lead Engineering Geologist. AECOM on behalf of their Client (Lafarge Ireland Ltd) was commissioned to develop a suitable Environmental Management Plan (EMP) which was required as part of the Client's planning application to extend Derraghadoan Quarry by four hectares. Aaron was responsible for the production of the EMP, which outlined the monitoring programmes for relevant environmental media to include monitoring of dust, groundwater levels, abstracted water discharge volumes and water quality. Development of the environmental monitoring plan consisted of a review of requirements in relation to relevant legislation, guidance and good monitoring practice for the extractive industry in Northern Ireland.

- **Lower Thames Crossing Phase 3 Ground Investigation, Highways England, London, UK, April 2020 – March 2021**

Senior Engineering Geologist/Deputy Deliverables Manager. AECOM was acting as Principal Contractor to deliver one of the largest Ground Investigation schemes in the UK, with multiple delivery packages and sub-contractor partners. The scheme will: provide a new road linking Kent, Thurrock and Essex; connect the existing A2/M2, A13 and M25; and will include construction of the largest road tunnel in the UK. Aaron was responsible for managing the Deliverables Team to ensure all ground investigation deliverables were checked under AECOM's quality management systems before issue to the client. His experience with large scale site investigations and highways projects improved the productivity of his team and allowed for: greater understanding of the project as a whole; succinct communication between site teams and the deliverables team; and a faster flow of high-quality deliverables to the client.
Value: €65M.

- **Carrick-a-Rede Rock Face Inspection, National Trust, Co. Antrim, UK, January 2020**

Lead Engineering Geologist / Project Lead. In response to a rock fall and subsequent closure of Carrick-a-Rede rope bridge in January 2020, AECOM was asked to complete an assessment of the rock faces immediately below and adjacent to the rope bridge supports. Aaron was lead engineering geologist on this project, responsible for the site assessment and subsequent reporting. Aaron's involvement allowed for a quick, yet accurate, assessment of the affected bridge abutments, allowing reopening of the bridge, which is an important revenue source to the National Trust.
Value: <€10K.



Aaron Clarke

Principal Geologist



CONSULTANTS IN ENGINEERING,
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- **Bus Connects, National Transport Authority (NTA) | Dublin, Ireland, October 2019 – March 2020**
Senior Engineering Geologist. In June 2018, the NTA published the Core Bus Corridors Project Report. The report outlined proposals for the delivery of a core bus corridor network across Dublin, providing 230km of dedicated bus lanes and 200km of cycle lanes/tracks on sixteen key bus corridors. AECOM and Mott McDonald were awarded Package A, comprising four bus corridor routes: Clongriffin to City Centre; Lucan to City Centre; Clondalkin to Drimnagh; and Greenhills to City Centre. Aaron was responsible for producing a Preliminary Source Study Report (PSSR) for the Clongriffin route and assisting with the production of PSSRs for the remaining routes. He also assisted the geotechnical lead with scoping the ground investigation for Package A.
- **N4 Mullingar to Longford (Roosky), Westmeath County Council & TII, Longford/Westmeath, Ireland, February 2020**
Senior Engineering Geologist. ROD-AECOM on behalf of Westmeath County council was commissioned to provide Options Selection and Preliminary Design for the proposed N4 realignment route between Mullingar and Roosky. The scheme will deliver approximately 50km of new and upgraded carriageway along with several new bridge structures. As part of the works, AECOM's Ground Engineering Team produced a Preliminary Source Study Report (PSSR). Aaron's input as an engineering geologist has given considerable added value to this project. He contributed significantly to several sections of the PSSR as well as undertaking a site walkover survey. His understanding of the site's geology, geomorphology as well as his local knowledge of land use was invaluable to this study and ensured that associated geohazards/geotechnical liabilities (including karst) were adequately captured and assessed.
- **N63 Liss to Abbey Realignment Scheme, Galway County Council | County Galway, Ireland, October 2019 – March 2020**
Lead Engineering Geologist. Site investigation to inform the Preliminary Design for the N63 Route Alignment Scheme, comprising realignment of approximately 2.3km of the N63 from Liss to the eastern edge of Abbeyknockmoy village. Aaron was lead engineer responsible for: producing a Desk Study Report; undertaking a site walkover survey to identify potential geotechnical liabilities in advance of site works; and scoping and tendering the ground investigation works, to include both invasive and non-invasive methods.
Due to the sites' underlying geology, there was potential for karst, Aaron's choice of investigation methods and location of exploratory holes used to target and identify potential karst features likely to affect the design and construction of this scheme was a significant contribution. His extensive experience working as a geologist on Irish highway schemes, to include projects such as the M7 Upgrade and Sallins Bypass, M11 Extension and N4 Mullingar to Roosky provided great benefit to the project in understanding of ground conditions and associated constraints.
Value: €350K.
- **Blackhorse Inn Redevelopment, New Line Homes, Dublin, Ireland, September 2019**
Senior Engineering Geologist. Geotechnical assessment of an existing embankment adjacent to the former Blackhorse Inn located in Inchicore, Dublin. The site was being proposed for the development of a multi-storey apartment complex, including an underground parking facility. The purpose of the assessment was to evaluate the stability of the slope during the construction phase and following completion of the development. Aaron assisted the lead geotechnical engineer on this project and was responsible for: carrying out an inspection of the site and adjacent slope to identify any significant geotechnical liabilities likely to influence the proposed development; producing a site walkover report; and creating a conceptual ground model based on existing ground investigation data and findings from the site walkover survey. Aaron's strong site observational skills and ability to quickly produce a meaningful ground model allowed for an accurate analysis of the slope, thereby allowing the Client to proceed with their planning application.
- **Kinnegar to Donaghadee Greenway, Ards and North Down, Co. Down, N. Ireland, September 2019**
Senior Engineering Geologist. AECOM were commissioned to investigate the proposed site of a steel pedestrian/cycle bridge along an approximate 133m long coastal section at St. Helen's Bay, County Down. To better understand the challenges associated with the site's geology and in particular the outcrops, which will form the foundation to the proposed bridge, a site walkover and preliminary desk top study was completed by Aaron. Recommendations based on his assessment directly resulted in the initial bridge design to be revisited due to the inherent instability in the observed rock mass. The involvement of Aaron in this project removed the requirement for using external geotechnical specialists saving time and reducing overall costs to the client.



Aaron Clarke

Principal Geologist



CONSULTANTS IN ENGINEERING,
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- **M7 Upgrade/R407 Sallins Bypass Scheme, Kildare County Council & TII, Co. Kildare, Ireland, January 2018 – July 2019**
Designers Site Representative Online upgrade of 16km of the M7 between J8 and J11, and construction of the Sallins Bypass (R407) and Sallins Link Road. Works also included extensive earthworks, five new bridges and new/updated drainage networks. Aaron was responsible for inspection and approval of all elements of the earthworks to include material assessment and inspections of pavement subgrade and the formation to structures. Aaron's experience with large earthworks operations was invaluable in the day-to-day operations of this project. It enabled him to advise the Contractor (SIAC/Colas JV) as to material acceptability and placement requirements. His efforts during inspections ensured that the highest quality of work was completed and also reduced liabilities associated with poor construction practices. His in-depth knowledge of the site's geology allowed for quick and decisive assessment of ground conditions; this was particularly evident during piling operations where over drilling was kept to a minimum thereby reducing overall piling costs.
Value: €100M.
- **M11 Extension Scheme, Wexford Co. Co. & TII, Co. Wexford, Ireland, 2016 – 2018**
Designers Site Representative. The project involved construction of 27km of new motorway (M11), 11km of new single carriageway (N30) and 4km of new dual carriageway (N80). Works also included mass earthworks (cut/fill) operations, construction of multiple structures (including the River Slaney Underbridge) and an extensive new drainage network. Aaron was responsible for inspection and approval of all elements of the earthworks to include material assessment and subgrade inspections to structures. Aaron's experience with large earthworks operations was invaluable in the day-to-day operations of this project. It enabled him to advise the Contractor (BAM/Dragados JV) as to material acceptability and placement requirements. His efforts during inspections always ensured that the highest quality of work was completed and also reduced liabilities associated with poor construction practices. Aaron's background in rock mechanics and knowledge of the site's sometimes complex geology perfectly positioned him to undertake rock mass inspections at proposed structure locations and to supervise piling operations at the locations of two of the largest underbridges on site. This removed the requirement to bring in external technical personnel saving time and reducing overall budget costs.
Value: €350M.
- **Ground Investigation for Wolborough Barton Residential Development, PCL Transport Planning Ltd, Newton Abbot, UK, 2015 – 2016**
Geotechnical/Geo-environmental Lead. Phase 1 Desk Study and Phase 2 preliminary intrusive investigation of an 89Ha. parcel of land at Wolborough Barton, Newton Abbot, Devon. The land was being developed for 1,200 residential properties and associated amenities and infrastructure. The phased investigation resulted in the development of a detailed conceptual site model and a preliminary assessment of the geotechnical/geo-environmental liabilities likely to affect the site. Aaron's extensive experience as a geologist allowed him to critically assess and accurately interpret the site's varied and complex geology; and to develop an accurate conceptual site model showing the interaction between the proposed development, the site's superficial and solid geology and associated groundwater regime. The resulting report allowed the client to successfully advance their planning application.
Value: €300K.
- **Ballinalack Exploration Drilling Programme, Teck Resources Ltd., Co. Westmeath, 2008 – 2011**
Project Geologist. Large-scale multi-disciplined mineral exploration programme targeting economic base metal deposits over an area of 300km². Works comprised deep borehole operations, multiple soil sampling surveys and geochemical analyses, land based geophysical surveys and airborne geophysical surveys. As Project Geologist, Aaron was responsible for managing this project and overseeing all staff and activities. He was also tasked with facilitating several technical presentations to Teck staff and their JV partners Nonfemet. His accrued knowledge of the area's regional geology and his ability to lead a multidisciplinary team of geoscientists, resulted in the successful development of a comprehensive geological ground model used to further develop drill targets within and adjacent to the existing Ballinalack deposit.
Value: €4.6M.
- **Wonthaggi Desalination Plant Scheme, Victoria Dept. of Sustainability & Environment, Wonthaggi, Victoria, Australia, 2007 – 2008**
Graduate Geologist. Ground investigation and monitoring programme for the proposed desalination plant near Wonthaggi. Aaron was responsible for the supervision of all site personnel involved in ground investigation activities as well as logging soil and rock samples to relevant Australian engineering standards.
Value: \$3.1 Billion.

Aidan Duggan

The Farmhouse, Dooniskey, Lissarda, Co Cork. P14Y221

Email: aduggan272@gmail.com **Mobile:** 087 2351240

D.O.B. 29/12/1968

Field Work Projects from 2006 to present. -

Clients:

Malachy Walsh & Partners, Reen Point, Blennerville, Tralee, Co. Kerry.

Sites – Knocknanask, Broe Mountain, Coumnagappul Wind Farms

Fehily Timoney & Co Consultants, Core House, Pouladuff Rd, Cork.

Sites – Coomatallin, Barnadivane, Gortaloughra, Goulacullin, Vicarstown, Bilboa, Inchamore and Gortyrhilly Wind Farms. Waterford Airport.

Malachy Walsh & Partners, Reen Point, Blennerville, Tralee, Co. Kerry.

Sites – Knocknanask, Broe Mountain, Coumnagappul Wind Farms.

Ecology Ireland Ltd, Ballyhigh, Effin, Kilmallock, Co Limerick - Dr Gavin Fennessy

Sites – Whitehill, Ballincor, Booltiagh, Ballinagree, Ballyvouskill, and Kilgarvan Wind Farms. Dunkettle Greenway, MN20 & N25 road surveys.

Kelleher Ecology Services Ltd. Castlelyons, Fermoy, Co Cork – Dr Katherine Kelleher

Site – Rathcahill Wind Farm.

Inis Environmental Consultants, Shannon Commercial Properties, Ennis, Co Clare.

Sites - Knockacummer, Glentane, Knockawarriga, Athea, Knockatallig, Bottlehill and Kealkill Wind Farms. Meelin Solar Farm.

Biosphere Environmental Services , Dr. Brian Madden, Greystones, Co. Wicklow.

Sites – Cappawhite, Gortyrhilly and Grousemount Wind Farms.

Woodrow Sustainable Solutions, Ballisodare Centre, Station Road, Co.Sligo.

Site – The Gearagh bird surveys.

Greensource , Station Road, Adare, Co, Limerick.

Sites – Fort East and Tullacondra wind farms.

Survey Projects:

Vantage Point surveys. Hinterland surveys. Breeding Merlin surveys. Red Grouse surveys. Hen Harrier nest monitoring. White-tailed Eagle roost watches. Hen Harrier roost watches. Breeding bird surveys. Wintering bird surveys. Countryside bird surveys. Breeding waders survey. Breeding Woodcock survey. Chough Survey. Snipe Surveys. Barn Owl Surveys. Breeding Curlew Surveys. Bird surveys related to the development of roads, power grid and gas pipe line infrastructure.

Bat surveys. Dragonfly & Damselfly surveys. Marsh Fritillary larval web surveys.

Additional Information

From 1999 to 2004 - Aidan was a voting member of the Irish Rare Bird Committee (IRBC), the recognized national expert group on bird identification, which operates under the auspices of *Birdwatch Ireland*.

Aidan has professional Indemnity Insurance and Public Liability Insurance. Aidan holds a current Safe Pass card.

EDUCATION

Cork Institute of Technology

1997 The Institute of the Motor Industry - Certificate of Management.

1997 City & Guilds - Financial & Commercial Studies

1996 Motor Management Certificate

1995 City & Guilds - Certificate in Legal Studies

1994 City & Guilds – Certificate in Management & Administration

1976-1987 Christian Brothers College, Cork. - Leaving Certificate (Honours)

Ashling Fenton

BA, MSc, HDip Sc GIS Analyst

2018 HDip Sc in Data Analytics: NCI
2016 MSc Geographical Information Science (GIS): DIT
2005 BA Geography & Mathematical Studies: NUIM

Particular Expertise	Ashling has worked as an GIS professional since 2017 and has been employed as a GIS Analyst with MWP since May 2022. She has considerable experience in renewable energy developments and has had input in a variety of project including solar and wind farms. Ashling possesses a good knowledge and working understanding of database systems, data analysis software tools, and SQL
Employment History	2022 – Present GIS Analyst, MWP 2021-2022 GIS Contractor, EDF Renewables UK & Ireland 2019-2021 GIS Project Manager/Data & GIS Analyst, An Post GeoDirectory DAC 2018-2018 GIS Technician, The ICON Group (Now ICON Geo) 2017 – 2018 GIS Consultant, ESRI Ireland & Irish Water
Health and Safety CPD	MWP In-House Safety Procedures. <ul style="list-style-type: none">Assisted with training: Bird survey technique using handheld tablets, 2022 (<i>in-house training</i>)Certified Associate in Project Management (CAPM), <i>Project Management Institute, July 2021</i>

Relevant Experience

Project	Coumragappul Wind Farm, Co. Waterford 2022- present
Description	A proposed development of a 10 No. turbine wind farm associated infrastructure in Co. Waterford. MWP are conducting ornithology surveys since summer 2019 (which are still ongoing) and report writing /mapping to present results of these surveys.
Role	Ashling was involved with mapping which included several seasons of bird survey data, and the relevant maps to accompany the Environmental Impact Assessment.
Project	Proposed Wind Generation & Battery Storage Development, Co. Clare, 2022-2023
Description	Proposed 30MW 6 turbine wind farm, with 30MW battery storage and 110kv substation. MWP were the lead PM, designer, EIAR, NIS and planning consultants.
Role	Ashling gathered data and compiled maps for various chapters of the EIAR and for visual assessment photomontages.
Project	Proposed Wind Farm, Co. Limerick, 2022-Present
Description	Proposed 6 turbine 27MW wind farm. MWP were the lead PM, designer, EIAR and planning consultants for this project.
Role	Ashling was involved with mapping which included several seasons of bird survey data, and the relevant maps to accompany the Environmental Impact Assessment.
Project	Proposed Wind Farm, Co. Waterford, 2022-Present
Description	Wind Farm required bird surveys for Summer and Winter seasons. This required identification of vantage point locations, completion of viewshed analysis, and digitizing of bird survey flight paths.
Role	Ashling completed viewshed analysis using GIS software, to identify optimum vantage point locations. This required DSM data of the area. The viewshed analysis identified 9 potential vantage point locations and viewshed extent from each location. Ashling was involved with mapping which included several seasons of bird survey data, and the relevant maps to accompany the Environmental Impact Assessment.

Project	Set up of ESRI Field Maps and templates for Surveys, 2022-Present
Description	Changing how MWP collects survey data across all ecology surveys. Switching from hard copy to digital collection. The project will also reduce MWP's carbon footprint.
Role	Ashling set up shapefile templates for use in feature layer services and web maps on ArcGIS Online and ESRI Field Maps. Ashling also assisted with any technical queries or issues.
Project	Seskin Wind Farm, Co. Carlow, 2021-2022
Description	Proposed 7 turbine site, with a tip height of up to 180m, and potential generation of 50MW.
Role	Ashling was involved in amending turbine layouts and buildable area based on landowner agreement. She was also involved in the provision of data, pdf maps and web maps in line with the requirements of internal and external stakeholders. These include constraint, layout, option, and lease maps.
Project	Greenfield Site Searches, Nationwide, 2021-2022
Description	Using county wind energy strategy and environmental constraint data to find potential wind farm site to the point of engaging with landowners.
Role	Ashling used a combination of county wind energy strategy and environmental constraint data etc to find potential wind farm sites and provide relevant maps to stakeholders. Ashling also gathered folio numbers within the buildable area and ownership information so developer could engage with relevant landowners.

Austin Cooney

Address: 50 St. Josephs Terrace,
Clarecastle, Co. Clare

Mobile: 086 1730739
Email: austinmcooney@eircom.net

Profile

An accomplished, customer focused professional with considerable experience in varying sized companies, from small Irish owned to large multinational companies. Experienced in the areas of customer service, purchasing, production and material management. An enthusiastic team player with strong communication and interpersonal skills with a proven ability to build strong, trusting business relationships.

Career History:

Monster Cable International Limited

Aug 2004 to Jan 2015

Position: Account Management Representative

- Order Fulfilment
 - Processing of customer orders both manually and via EDI
 - Ensuring orders are scheduled for shipment and acknowledged promptly
 - Liaising with planning on out of stock items
 - Manage customer backlogs and provide regular open order updates
 - Co-Ordinate product returns
 - Respond promptly to customer queries
 - Resolve invoice queries
- Interface with regional managers & field sales to drive and facilitate sales to key customers
- Technical support for consumers & Internal employees
 - Handled consumer calls and emails
 - Determine if their product was defective & within warranty
 - Processed replacement orders for defective products
 - Provided tier 2 technical consumer support
 - Internal go to person for technical product information
 - Handled connected equipment claims

Position: Buyer – Temporary contract

Aug 2004 to Sept 2004

- Purchasing of raw materials supply to the company's manufacturing facility.
 - Reporting of any issues in relation to shortages to the materials manager
 - Monitoring inbound shipments to ensure timely delivery.

TNT Global Logistics

Apr 2003 to Aug 2004

Position: Van Driver

- Delivery of goods to TNT's customers on a daily basis
- Maintain daily and weekly records of goods delivered and distance travelled

Flextronics, Castletroy, Limerick
Position: Buyer for subcontract manufacturers

Sept 2000 to Oct 2002

Pacific Scientific, Gort Road, Ennis, Co. Clare
Position: Senior Customer Service Officer
Position: Senior Buyer

June 1977 to Aug 2000
Feb 1994 to Aug 2000
June 1977 to Feb 1994

Education and training

Course

City and Guilds Diploma in Electronics
Cert in Marine Radio
Supervisor Training Course
Negotiation Skills
Oracle Training
Occupational First Aid
Occupational First Aid Refresher
ECDL
Excel Training

College / Institution

Limerick Institute of Technology
Limerick Institute of Technology
Shannon Development
IIPMM
Pacific Scientific
The Red Cross
Shannon PT
Pery Square Business College
Inspire IT.

Birdwatching Skills and Achievements

- 25 years bird watching experience both in Ireland and abroad.
- An active member of the Clare branch of Bird Watch Ireland.
- Organiser and leader for several of branch outings.
- 10 years iWebs experience.
- Participated in numerous common bird surveys.
- Is co-author of the book the "Shannon Airport Lagoon – A Unique Irish Habitat"
- Worked on and contributed to the production of wildlife documentaries for WaxWing productions.

Interests and Hobbies

Photography, Sport, Cycling, Ornithology



Rita Mansfield

Principal Ecologist / Project Manager



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Rita is a Principal Ecologist and Project Manager at Fehily Timoney with nineteen years previous experience as a technical lead within the environmental and planning services sector. She specialises in statutory consent and environmental assessment for large scale public infrastructure projects in the energy, water (including flood relief schemes) and transport sectors.

She is a qualified ecologist in environmental impact assessment, planning applications (conventional and strategic infrastructure development), climate adaptation, Appropriate Assessment, foreshore licensing, Water Framework Directive, integrated catchment management, and stakeholder engagement.

In the energy sector particular specialist experience in securing statutory consent for combined and open-cycle gas turbines, solar and wind projects, peat fired power stations, utility scale batteries and transmission (110 kV, 220 kV and 400 kV overhead line and underground cable) infrastructure.

In the transport sector, specialist experience in securing statutory consent (including CPO, EIA and AA), environmental detailed design and environmental contract administration in Light Rail and Highways.

In the water sector, specialist experience in securing statutory consent (including planning, CPO, EIA and AA) for sewerage schemes, municipal wastewater treatment, potable water treatment and distribution and flood relief schemes.

Key Skills

- Environmental Impact Assessment (EIAR)
- Appropriate Assessment (AA): Habitats Directive
- Ecological Impact Assessment (EclA)
- IED licence
- Foreshore Licence
- Construction Environmental Management Plan (CEMP)
- Ecological Clerk of Works (ECoW)
- Water Framework Directive
- Environmental design and mitigation
- ArcGIS Desktop /Collector/Online

Previous Experience Essentials for this Project

Energy Services

- **Dennistown 110kV Grid and Substation / Harmony Solar**
Strategic Infrastructure Development application to An Bord Pleanála for 110 kV infrastructure to support a solar development in Wexford.
- **Peat Extraction All-Ireland /Bord na Mona**
Project Lead for Appropriate Assessment (NIS) of peat extraction activities across ca. 75,000 hectares.
- **Celtic Interconnector PCI Project / EirGrid**

Key Information

Qualifications

H. Dip Environmental Protection and Pollution Control
Sligo Institute of Technology, 2008

BSc. (Hons) Applied Ecology,
University College Cork, 2003

Employment History

2020 – Present

Fehily Timoney & Company
Senior Environmental Specialist

2004 – 2020

Mott MacDonald Ireland Limited
Senior Environmental Specialist



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Principal Ecologist for the statutory consents which include foreshore application and Strategic Infrastructure Development application comprising ca. 575 km of submarine cable, underground HVDC / HVAC cable and converter station.

- **Rye Water Valley - Kellystown Project /Confidential Client**

Environmental assessment of options for the upgrade to the power supply to a manufacturing plant in Leixlip comprising new substation and underground cables connecting to an existing line. The site is within the Rye Water Valley SAC. Planning application to the Board under S.182A of the Planning and Development Act 2000 supported by Natura Impact Statement, EIA Screening report and Environmental Report.

- **Converter Station EcOW Services / Siemens**

Project Manager for the delivery of EcOW services for the Celtic Interconnector Converter Station project at Ballyadam, Cork.

- **Moneypoint – Oldstreet 400 kV Line Refurbishment /EirGrid**

Planning application for refurbishment works to the power line. The Moneypoint - Oldstreet overhead power line is approximately 102.5km in length and runs in a north-east direction from the Moneypoint substation in Kilrush, County Clare to the Oldstreet substation in Portumna, Co. Galway. An extensive Natura Impact Statement was required for this project.

- **Greenlink PCI – Peer Review EIAr & NIS**

Technical Peer Review services for the Greenlink Project of Common Interest. Greenlink is a subsea and underground electricity interconnector cable (with associated converter stations) linking the existing electricity grids in Ireland and Great Britain.

- **ESB Poolbeg Development – Bess and FlexGen**

EIAr and NIS to support four separate planning applications for the development of two flexible thermal generating systems and two battery energy storage systems within the Poolbeg Peninsula.

- **Huntstown Battery Energy Storage System /Viridian**

Senior Ecologist for the preliminary design, statutory planning approval and environmental assessments of BESS development within the Huntstown Power Station site.

- **Open-Cycle Gas Turbines and Utility Scale Battery Developments, 100MW at Kilkenny, Athlone and Cahir /Bord Gáis Energy/Centrica**

Senior Ecologist for the preliminary design, statutory planning approval and environmental assessments of various 100 MWe energy generation technologies (OCGT, gas engines and battery) at three sites across Ireland.

- **West Offaly and Lough Ree Power Plants /Bord na Móna**

Ecological Assessment of the harvesting and supply of peat fuel to West Offaly and Lough Ree Power Plants.

- **Wind Energy Development County Offaly / Bord na Móna**

Strategic Infrastructure Development application to An Bord Pleanála (including EIAr and NIS) for a 10-turbine array. Particular challenges include sensitive ornithology.

- **Open Cycle Gas Turbine Power Plant County Kilkenny / Greener Ideas Limited (GIL)**

Lead ecologist for the Environmental Impact Assessment (EIA), Appropriate Assessment, and planning application for the development of a 100MW OCGT power plant in County Kilkenny. This application was submitted to Kilkenny County Council on behalf of Greener Ideas Limited (GIL), a joint venture company comprising Bord Gáis Energy and Mountside Properties.

- **Cross Shannon Cable /EirGrid**

Senior Scientist for the planning and foreshore applications for this 400 kV submarine cable connecting Moneypoint and Tarbert substations.

- **Upgrade of Woodland 400kV Substation / EirGrid**

Principal Ecologist (planning and environment) for Section 5 declaration application (planning) for proposed new bay at 400 kV substation.

- **Edenderry Power Plant, County Offaly / Bord na Móna**

Planning permission was sought for the continued use and operation of Edenderry Power Plant up to 2030. Assessment of the in-combination impacts of peat harvesting comprised a significant element of this project.



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- **Renewable Exports Source (RES) Scheme – Strategic Environmental Overview:**

The Renewable Exports Source (RES) refers to the strategy for the delivery of large amounts of renewable (wind) generation from Ireland to the United Kingdom via sub-sea interconnector cables under the Irish Sea. SEO Objectives:

- Evaluate the potential impacts of developing wind energy transmission systems interconnecting to the UK on environmental resources and communities;
- Identify sensitive receptors;
- Identify areas of good potential for future development;
- Inform the future network designs and configuration.

Water Services

- **Gort Lowlands Flood Relief Scheme / Galway County Council**

Assessment and development of a flood relief scheme to manage the existing flood risk in Gort Lowlands, and also the potential for significant increases in this risk due to climate change, ongoing development and other pressures that may arise in the future. Project Manager for the environmental services for the feasibility stage of the scheme, which investigates the diversion of overland flood flows in to Kinvarra Bay in Galway. Project deliverables include Appropriate Assessment, Public Consultation, EIAR, Marine modelling, Public Exhibition.

- **Local Network Reinforcement Project / Irish Water**

Environmental lead responsible for environmental and planning reports for wastewater network infrastructure projects throughout Leinster, including site and route selection reports, technical notes, Natura Impact Statements, planning strategy reports and planning applications.

- **Enniscorthy Flood Defence Scheme /OPW**

The development of flood defence scheme to alleviate flooding in Enniscorthy Town. The scheme includes the removal of the Seamus Rafter Bridge, underpinning of the main Wexford to Dublin railway bridge over the River Slaney and the construction of a new road bridge which transverse the River Slaney SAC and approach road ties in to the key strategic routes in the south east on the N30 and N11.

- **Clonakilty Flood Relief Scheme, Ongoing.**

The scheme will protect to the town of Clonakilty from both river and tidal flooding, and includes the construction of a dam, modification to several bridges, 2km of riverbank improvement works, and four pumping stations. Environmental Manager involved in the preliminary design, planning process, detailed design, tender process, and contract administration. Currently overseeing Ecological Clerk of Works role on the construction stage.

- **South Western River Basin District Catchment Flood Risk Assessment and Management (CFRAM) Study / OPW.**

The objective of this study was to accurately map flood risk and to develop management strategies and measures to mitigate flood risk in the South Western RBD. Environmental Manager responsible for the assessment of flood risk in the South West of Ireland as it pertains to environmental impact, the assessment of flood risk management options through multi-criteria analysis (MCA), stakeholder consultation, Appropriate Assessment and Strategic Environmental Assessment.

- **Caraholly Flood study / Mayo County Council**

Preliminary design of a €1million flood relief scheme in Co. Mayo. Senior ecologist responsible for the Natura Impact Statement and environmental considerations report for the planning package to Mayo County Council. S

- **Inniscarra WTP Sludge Treatment / Irish Water**

Senior ecologist for the planning application for sludge treatment facilities.

- **River Basin Management Plan - South Western River Basin District.**

A four-year catchment management study leading to the publication of the River Basin Management Plan and the development of measures to achieve good water quality status in order to comply with the implementation of the Water Framework Directive (2000/60/EC). The purpose of this Directive is to establish a framework for the protection of all waters in order to prevent and reduce pollution, protect the aquatic environment, improve the status of aquatic ecosystems, and promote sustainable water use. Environmental Scientist responsible for the delivery of several national studies and the development of the River basin Management Plans. The project involved detailed data management which was supported through the use of geographic information systems (GIS).

- **Millstreet WWTP Upgrade/ Irish Water**

Senior ecologist for the Appropriate Assessment (NIS) and Planning Application for the proposed upgrade works to the Millstreet WWTP. The WWTP discharges in to the Munster Blackwater SAC



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- **South Westmeath and Lanesborough/Central Longford Water Supply Scheme / Irish Water**

Environmental Lead for the design and procurement of a new waste water treatment plant (WTP) and intake works, upgrade/expansion works to two WTPs, decommissioning of five WTPs and the provision of an extensive network of pipelines and linkages across a large area from Athlone to Mullingar and northwest to Lough Forbes. The upgrade works were being provided to a secure and adequate supply of drinking water in compliance with EU (Drinking Water) Regulations, 2014.

- **Waste Water Discharge Licencing Project, Irish Water**

Project Lead for work programme involving the preparation of reports assessing the impacts of the waste water discharge points from residential agglomerations on protected shellfish waters along the Irish coast.

- **Rossaveel Fishery Harbour / Department of the Marine**

Senior Ecologist for the Environmental Impact Assessment and planning application for the development of a 200m deep water quay in Rossaveel. The EIA assessed both marine and terrestrial environmental impacts across a range of sensitive parameters, i.e. biodiversity, archaeology, traffic, noise and vibration etc. This project is critical to ensuring that continued viable operation of one of Ireland's Fishery Harbour Centres. Planning was granted in 2018.

- **Greystones Harbour Development / Wicklow County Council**

Scientist for the environmental impact assessment. This development included coastal protection works and the development of a 400 berth marina in addition to a significant commercial and residential provision. Key concerns included populations of sand martin, sea kale and public amenity.

- **Waterford City Infiltration Remediation / Waterford City Council**

The infiltration study involved the assessment of the existing combined sewer collection system in Waterford City centre, and recommendations on its upgrade to reduce infiltration to acceptable levels. Employers Representative responsible for scoping, procurement and management of CCTV survey to identify defective sewer in the Waterpark Catchment. Prepared recommendation report for remediation measures, including a cost-benefit analysis to ensure value for money. Prepared contract documents using the Works Designed by the Contractor (CWMF) form of contract for the rehabilitation of the sewers which includes the procurement of specialists. Responsible for preliminary H&S Plan which encompassed significant traffic management issues as well as confined space entry requirements.

- **Effluent Characterisation Study /Environmental Protection Agency**

Project co-ordinator and lead scientist for this year-long study into the characteristics of wastewater discharges from municipal waste water treatment plants across Ireland. The output of the study was an estimation tool to assist WWTP operators in estimating the mass emissions released from their treatment plant. This information is required to be reported to the EPA under law (Pollution Release and Transfer Regulations).

Transport Services

- **Dunkettle Interchange Upgrade Scheme / John Sisk & Son Holdings Ltd**

Environmental Lead for the Detailed Design on the Design & Build contract for the reconfiguration of the Dunkettle Interchange to a free flowing interchange including: A series of direct road links between the N8, the N25 and the N40 and links to the R623 Regional Road in Little Island and Burys Bridge in Dunkettle; 1 grade separated junction arrangement at the existing N25 to the east of the existing Dunkettle Interchange; 4 roundabouts – 2 at the grade separated junction and 2 at tie ins with the existing road network; 51 major structures of various forms; several culverts where the scheme crosses watercourse or intertidal area; pedestrian and cyclist facilities; and modification of existing Silversprings junction on the N8 Lower Glanmire Road.

- **Cork Southern Distributor Link Road / Cork City Council**

Gene is the Project Manager for the Southern Distributor Link Road, a proposed new road link between the N27 and Sarsfield Road with the potential to also link to the N71 and Cork Airport. Gene is responsible for delivery of the route selection process as per Phases 1-2 of the NTA's Guidelines for the Management of Public Transport Investment and Cost Management Guidelines and Phases 0-1 of DPER's Public Spending Code 2019.

- **Wexford Town to Rosslare Strand Greenway / Wexford County**

Environmental Coordinator for the development of a proposed greenway extending between Wexford Town and Rosslare Strand Train Station. The appointment covers PSDP, Route Selection, Preliminary Design, Environmental Assessment, including preparation of an EIAR and Statutory Consent Processes.

- **N11/N25 Oilgate to Rosslare Harbour / Wexford County Council**

This project involves the development of the N11/N25 national primary road between Oilgate and Rosslare Harbour Co. Wexford. The scheme is approximately 30km of motorway/dual carriageway with a major crossing of the River Slaney. Technical Lead responsible for the delivery of environmental services necessary to deliver Phases 1 to 4 of Transport Infrastructure Ireland's Project Management Guidelines (PE-PMG-02041) and Phases 1 to 4 of the National Roads Authority's Project Management Guidelines 2010 (NRA PMG 2010). The project is currently at Phase 1.



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- **Western Rail Corridor Redevelopment, Ireland / Iarnród Éireann**
Feasibility study and business case assessment for reopening of the disused railway line between Athenry and Claremorris in the west of Ireland. Senior Ecologist, responsible for the qualitative assessment of the effects on biodiversity and the environment from the proposed reopening of the railway between Athenry and Claremorris. Assessment was carried out using GIS data and through consultation with national environmental protection agencies.
- **N25 New Ross Bypass PPP Scheme / TII**
Construction of approximately 14.8km of National Route, 13.6km of Dual Carriageway and 1.2km of Single Carriageway and associated works. It includes an Extradors bridge structure which consists of two 230m spans with an overall length in region of 900m. It also includes over 40 other structures comprising of 1 Railway Bridge, Underbridges, Overbridges, Underpasses, Culverts, Retaining Walls, Environmental Barriers, Sign Gantries, and VMS. Environmental Specialist, responsible for the certification of design and construction insofar as it pertains to environmental matters.
- **N71 Footpath / Cycleway: Glengarriff village to NPWS Nature Reserve /Cork County Council**
Feasibility assessment and assessment of design alternatives for the development of pedestrian and bicycle access between Glengarriff village and the nature reserve. The alignment passes through the Glengarriff Woods SAC and as such the assessment of alternatives in Appropriate Assessment is required.
- **Cork Bridge Rehabilitation, Cork, Ireland / Cork County Council.**
Repair of approximately 50 road bridges located around the Cork region. The list of structures included predominately masonry structures dating from the 13th to 19th centuries, including a number of protected structures. Environmental Team Leader, responsible for the preliminary ecological appraisal (PEA), screening for Appropriate Assessment, Natura Impact Statements, and Ecological Impact Assessment (EclA) including invasive species survey for proposed repair works to the bridges in County Cork. Devised and implemented mitigation (under licence from NPWS) for the exclusion, protection, and enhancement of several bat roosts at various bridges.
- **N18 Gort to Crusheen Dual Carriageway, Galway County Council**
Scientist for the environmental impact assessment for 22km road scheme in County Clare and Galway.
- **N22 Baile Bhuirne to Macroom Road Development (Ph 5-7) / Cork County Council**
The scheme is an approximately 22 km Type 2 Dual Carriageway, to be constructed offline. It will require construction through challenging terrain which varies through the scheme from hilly, remote land with rock outcrops at the western end, to low lying pasture lands to the east of Macroom. Significant ecological constraints on the scheme include Kerry Slug, Freshwater Pearl Mussel, and Lesser Horseshoe Bat. Responsibilities at this stage (Tender Assessment) in the scheme development include co-ordination of the ecology team, preparation of contract documents, provision of technical environmental advice, consultation with key stakeholders (e.g., NPWS), assessment of Tenders.
- **Limerick Depot Metropolitan Area / Limerick City & County Council.**
Design and development of a consolidated operations depot for the Metropolitan Area operations including Cleansing & Parks, Housing Maintenance, Road Maintenance, Burial Grounds, Water, Drainage, Surface Water Maintenance, Storage of Emergency Equipment and Salt Barns. The Depot will occupy a space between 4 – 6 acres. Senior Ecologist responsible for the management of environmental impact assessment of the proposed development.
- **Bergen Bybanen Light Rail System Phase 3 & Depot, Norway / Hordaland Fylkeskommune, 2016.**
Detailed design and construction of the Bergen light rail transport system in Norway. The project comprised 7.1km of double track from Rådal to Flesland airport, including 2.8km of tunnels and over 1km of structures and the development of a tramwash and workshop at a site in Flesland (approximately 20540m²). Environmental Specialist responsible for the construction management environmental specification, applications for discharges to waters for construction and operation of the scheme, constraints study for the workshop site and light rail line and environmental sustainability recommendations for the workshop.
- **N11 Arklow- Rathnew PPP Contract / BAM, 2013.**
Provision of 16.5km of high-quality dual carriageway between Arklow and Rathnew in Co. Wicklow, a motorway service station, and a grade-separation of the N7 Newlands Cross Junction in Dublin. Senior Ecologist, responsible for pre-construction environmental surveys and environmental and ecological design for:
 1. Section A – dual carriageway approximately of 16.3km in length between the north end of the existing Arklow Bypass and the southern end of the existing Newtownmountkennedy to Ballynabarny road scheme.
 2. Section C – new motorway services area on the existing M11 near Gorey, Co. Wexford.
 3. Section D – upgrade to the Newlands Cross junction (N7 Nass Road junction with the Belgard / Fonthill Road [R113]) to a grade separated junction.



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- **East Coast Railway Line between MP19% and MP22½, County Wicklow / Iarnród Éireann, 2014.**

Appropriate assessment for emergency railway safety fencing works on the main railway line between Dublin City and Rosslare Harbour. This project required an assessment to identify and control ecological impacts on an area of land protected under the habitats directive candidate special area of conservation (cSAC) and the bird's directive special protection area (SPA). Of particular relevance to the project is the habitat 'perennial vegetation of stony banks. The railway line sits on top of a shingle beach which is known to support this vegetation type.

In addition, the shingle beach is an important nesting area for Little Tern (*Sternula Albifrons*). Significance of impact was assessed, and mitigation measures were prescribed.

- **National Roads Authority Development of and Consolidation of (D&B) and (PPP) Works Requirements, 2010.**

Technical advice and support in preparing consolidated works requirements for use on contracts tendered using both the PPP and the D&B mechanisms. Responsible for the development of clauses to ensure protection of the environment at design and construction stages of road scheme development. This included run-off and sediment control, mitigation for specific protected species e.g., otter and bat, mitigation for water crossings, management of extracted material, measures to control noise and lighting impacts, landscaping measures, control of invasive species, control of noxious weeds, pre-construction, and post-construction survey requirements.

Other Services

- **Grid Implementation Plan 2023-2028 / EirGrid**

Project Manager for the Strategic Environmental Assessment and Appropriate Assessment of the Grid Implementation Plan 2023-2028 for the Electricity Transmission System in Ireland.

- **Local Authority Environmental Management System, Environmental Protection Agency**

Project Scientist for the development of a web-based environmental management system for local authorities in the tracking and managing of the implementation of their statutory environmental protection functions. This project involved extensive training of personnel from all local authorities in Ireland in environmental legislation and environmental enforcement prioritisation for compliance with the European Commission Recommendation on Minimum Criteria for Environmental Inspections.

- **Mid-Western Area Strategic Plan**

MWASP was a strategic land use and transportation plan for the Mid-West region with the objectives of ensuring sustainable and balanced growth in the region for the period 2010 – 2030. The requirement to undertake an Appropriate Assessment (also referred to as Habitats Directive Assessment) derives from Article 6 (3) and 6 (4) of the Habitats Directive (92/43/EEC). All Natura 2000 sites located within 15km of the MWASP boundary, including those within the boundary itself, were identified. The potential impacts of the plan policies and strategies were assessed, and mitigation prescribed, as necessary.

- **Irish Offshore Oil and Gas Strategic Environmental Assessment (IOSEA6)**

Technical Peer Reviewer for the SEA Scoping for the Department of the Environment, Climate and Communications (DECC) Plan for Issue of Petroleum Exploration and Production Authorisations in Irish Offshore Waters for the period to 2030 (currently in Draft). The SEA assess any potential impacts associated with activities conducted under petroleum exploration and production authorisations within Irish offshore waters.

- **AER / WWDL Technical Assistance (ongoing) Client / Irish Water**

Project manager responsible for the co-ordination and management of annual environmental returns (AER) returns from Local Authorities in the Southern Region of Ireland between 2014 to present. Prepared reports to satisfy licence conditions including shellfish water assessments, storm water overflow risk assessments and priority substances reports.

- **Guidance the Licensing of Discharges to Surface Waters and to Sewer / Water Services Training Group**

Manager for the development of guidance for local authorities on their functions and responsibilities under water pollution legislation. Developed supporting technical training and delivered training to in excess of 500 local authority staff through the Water Services Training Group's five regional training centres.

Éinne Ó Cathasaigh

Cahermackerla, Lisdoonvarna, Co. Clare | Eircode: V95P3X4
ocathasaighe@gmail.com | +353 85 1911 563

I am an aspiring herpetologist with an undergraduate background in zoology and postgraduate masters in Marine Biology, with more than 3 years' experience working in ecology in Ireland. I am looking for new employment while I prepare to pursue my PhD investigating alpine newts in Ireland, which is expected to begin this year. I have ADHD, and I'm fortunate enough to be enthralled with animals. I am also a native Irish speaker, and strive to raise awareness for our native tongue, and native species.

EDUCATION

University College Cork

Masters of Science in Marine Biology

Cork, Ireland

Class of 2020

Relevant Coursework: Marine Megafauna, Biotelemetry, Marine Ecology, Geographical Information Systems, Genetics, Innovation and Ocean Sustainability.

Societies: UCC Scuba Society (OCM, 2019)

Trinity College Dublin

Bachelors of Arts in Zoology

Dublin, Ireland

Class of 2019

Relevant Coursework: Statistical Analysis and Data Handling, Tropical Ecology, Behavioural Ecology, Animal Diversity, Evolution, Conservation and Wildlife Management, Rewilding and Restoration Biology, Genetics

Awards: 1st Place in Parasitology Lightning Talks (2018)

Societies: TCD Cumann Gaelach (Dramatics Officer, 2016-2017) (Publications Officer, 2015-2016)

Saint Augustine's College

Secondary School

Dungarvan, Ireland

Class of 2014

Leaving Certificate: 545/600 points, all honours; A1 in Irish, A2 in Chemistry, B1 in Biology and Geography, B2 in Maths and French, B3 in English

Awards: Gaisce Bronze Award (The President's Award) (2014)

FIELDWORK EXPERIENCE

Herpetological Society of Ireland (HSI)

Research & Field Assistant

Ireland

2016 - Present

- Collection of field data in association with HSI. Current research topic involves investigating recently discovered alpine newt invasions in midland counties of Ireland.

Ocean Research and Conservation Ireland

Education Officer and Marine Mammal Observer

Cork, Ireland

November 2019 - February 2021

- Working in Photo-Identification of cetaceans alongside PhD students in drone blow sampling, satellite tagging of elasmobranchs. Organising educational events and zoom calls for children.

Celtic Voyager

Postgraduate Researcher

Cork, Ireland

November 2019

- Conducted 2 trawls, 6 grab samples, and 6 CTD (conductivity, temperature, depth) tests as part of a team of 7 other researchers. Data was then analysed using RStudio, and compiled into an end-of-semester report.

WORK EXPERIENCE

RSK Ireland **Belfast, Ireland**
Ecologist September 2021 - December 2022

- Conducting active and passive bat surveys, viewpoint bird surveys and walkover mammalian surveys.
- Compiling and published EclAs for housing developments in Dublin.

Éinne Ó Cathasaigh Ecology Services **Waterford, Ireland**
Freelance Consultant Ecologist March 2020 - September 2021

- Conducting active and passive bat surveys, viewpoint bird surveys, walkover mammalian surveys and land based marine mammal viewpoint surveys.

360 Cookhouse **Dungarvan, Ireland**
Waiter March 2016 - July 2020

- Serving tables, taking orders, greeting the general public, cashing up, training new employees etc.

Marine Institute (Foras na Mara) **Galway, Ireland**
Summer Bursar July - August 2019

- Catalogued more than 10,000 preserved samples into the Irish Benthic Invertebrate Database, which serves as a vital reference tool for future marine research conducted around Ireland.
- Reviewed 15 years of benthic health assessments conducted at Irish fish farms to determine the efficacy of Department of Fisheries environmental policy between 2003-2018.

RSPB Rathlin West Light Seabird Centre **Reaclainn, Northern Ireland**
Conservation and Education Outreach Officer July 2019

- Directed educational tours for primary and post-primary school students, focusing on bird conservation, biodiversity, and the functions and importance of the Rathlin West lighthouse.
- Trained volunteers in basic seabird identification, including puffins, skuas, ravens, and guillemots.

Trinity College Zoology Museum **Dublin, Ireland**
Visitor Experience Officer June – August 2015

- Led educational tours for members of the public around Trinity College Dublin's Zoology museum, additionally advising prospective students on the Zoology programme.
- Handled live animals for public interaction and demonstration, including Californian Black Tarantulas, geckos, boas, giant African land snails, and Madagascan hissing cockroaches.

CERTIFICATIONS AND SKILLS

SCUBA Diving: BSAC Open Water, CMAS One Star

Professional Certifications: Boat Handling, GMDSS Radio Handling, ENG - 11 Sea Survival

Languages: English (Fluent), Irish (Native), French (B2 spoken standard), Spanish (Conversational)

Statistics: RStudio, SPSS

Computer Software: ArcGIS, Microsoft Office Suite, ECDL Computer Driving License

Full/Clean Driving License

References Available Upon Request.

Eric Dempsey
Sycamore Hill
Tiglin
Newcastle
Co. Wicklow
A63 P623

Eric Dempsey, is an Environmental Consultant and Ornithologist who has worked on a wide range of conservation, research and ecological monitoring projects across Ireland. Eric has over 40 years field experience and is the author of many best-selling books including '*The Complete Field Guide to Ireland's Birds*' and '*Finding Birds in Ireland*'. He is experienced in coordinating and undertaking surveys along with being highly proficient in report writing and data management. Eric is very experienced with all survey methodology and has inputted in various Environmental Impact Assessment Reports, Environmental Assessments and Appropriate Assessments for numerous projects.



Fiona McKenna

Ecologist

2019 - **Wildlife Biology BSc (Hons)**, *Institute of Technology, Tralee*

2015 - **Animal Care Fetac Level 5**, *Listowel Community College*

Particular Expertise

Fiona is an ecologist who has worked with MWP full time since 2019. Prior to graduation she worked for MWP on a part-time basis during summer months and work experience whilst in college. Over the last 4.5 years she has gained experience in field work and general ecological report writing. She has completed and contributed to numerous reports such as Appropriate Assessment Stages 1 and 2 and Ecological Impact Assessment (EclA). She has also authored and contributed to a number of reports for bird survey work and is experienced in the collation of data and in field ecology survey techniques.

Key Skills

- Report writing including Ornithology, AA Screening, NIS and EclA
- Bird surveys (Vantage point and Transect surveys)
- Bat surveys (Anabat, passive monitoring, driven transects)

Relevant Employment History

June 2019 - Present: Full-time Malachy Walsh and Partners
July 2018 - May 2019: Part-time Malachy Walsh and Partners
April – July 2018: Internship at Malachy Walsh and Partners

Health and Safety

Safe Pass, MWP In-House Safety Procedures, risk assessments, Construction Industry Federation (CIF) COVID 19 on-line inductions.

CPD

- **Otter survey methods 2023** (*BatAbility*)
- **Kaleidoscope Pro for Bat Auto-ID** (*Wildlife Acoustics*)
- **Bird survey technique using handheld tablets 2022** (*in-house training*)
- **Pine Marten survey methods 2022** (*BatAbility*)
- **Bat Sound Analysis 2022** (*BatAbility*)
- **Bat Conservation Ireland 4 module course 2021** (*Dr Tina Aughney*)
- **Conservation Approaches to Benefit Biodiversity: Big Ideas for Big Challenges 2020** (*CIEEM*)
- **Irish Raptor Study Group Conference 2019** (*Irish Raptor Study Group*)
- **Mountain Skills 1 & 2 2015/2016** (*Mountaineering Ireland*)
- **Canoeing Skills (Level I) 2015** (*Canoeing Ireland*)
- **Small Boat Handling Training 2015**
- **Leave No Trace 2015** Training Programme (*Leave No Trace Ireland*)

Relevant Experience

Project

Description

Drumnahough Wind Farm, Co. Donegal, 2019 - 2022

A development of a 12 No. turbine wind farm with associated infrastructure and a grid connection at on a 611-hectare site, with capacity of circa 60 to 70MW was granted planning permission in 2022. MWP were the PM, leading the design, environmental, ecology and planning.

Role

Authored all appended bird reports and contributed to the Ornithology chapter. For the purpose of the RFI - contributed to the updated AA Screening and NIS reports and had input in the RFI responses.

Project Description	Shronowen Wind Farm, Co. Kerry 2020 - 2021 A development of a 12 No. turbine wind farm with associated infrastructure and a grid connection on a 364-hectare site with potential output of 50 to 55 MW located in Co. Kerry was granted planning permission in 2022. MWP were the PM, leading the design, environmental, ecology and planning.
Role	Contributed to bird reports and the Ornithology chapter.
Project Description	Kilathmoy Wind Farm, Co. Kerry 2020 – present A development of a 7 No. turbine wind farm in Co. Kerry was constructed in 2019. MWP were the PM, leading the design, environmental, ecology and planning.
Role	Post construction bird monitoring which includes conducting surveys and report writing.
Project Description	Counnagppul Wind Farm, Co. Waterford 2021- present A proposed development of a 10 No. turbine wind farm associated infrastructure in Co. Waterford. MWP are conducting ornithology surveys since summer 2019 (which are still ongoing) and report writing /mapping to present results of these surveys.
Role	Report writing for all surveyed seasons to date.
Project Description	Scart Mountain Wind Farm, Co. Waterford 2021– present A proposed wind development of in Co. Waterford. MWP are conducting ornithology surveys since 2017 (which are still ongoing) and report writing /mapping to present results of these surveys.
Role	Report writing since 2021.
Project Description	Cushaling Wind Farm – Access route and Cable route, Co. Offaly 2021-2022 Construction and operation of an internal access road into the permitted Cushaling Wind Farm development and a 1.6km 33kV double circuit underground collector cable from the permitted Cushaling Wind Farm to the Cushaling Wind Farm Independent Power Producer (IPP) substation. MWP were the PM, leading the design, environmental, ecology and planning.
Role	Carried out ecological surveys on site with main focus on mammals and IAS. Co-authored EclA report.
Project Description	Kilcumber Birdge Substation, Co. Offaly 2020-2021 A development for 110kV substation to facilitate the connection of permitted renewable energy projects in the local area to the transmission network was granted planning permission in 2022. MWP were the PM, leading the design, environmental, ecology and planning.
Role	Contributed to AA screening and NIS reports. Carried out surveys, general walkovers and for the presence of mammal. Set up camera traps to document non volant species activity and authored the biodiversity chapter for the EIAR.
Project Description	Reen’s Garage Inert Waste Facility, Co. Kerry 2020 The client applied for an inert waste permit for the site to be used for excavated inert material from the Shrone/Barraduff reservoir rationalization scheme along with additional imported inert soil or. MWP were the PM, leading environmental, ecology.
Role	Carried out a site visit with main focus on Invasive Alien Species (IAS). Authored the AA Screening and NIS reports.
Project Description	Skelligs Phase 4 works Conservation Project NIS (Area F and G), Co. Kerry 2020 MWP were the engineering lead on these on-going sensitive conservation works on Skellig Michael Island. Encompassed within the Skelligs SPA.

Role	Contributed to AA Screening and NIS for the conservation works along with contributing to ornithology reports based on previous sea bird surveys carried out at the site.
Project Description	Cushaling Wind Farm, Co. Offaly and Co. Kildare 2020 A development of 9 No. turbine wind farm with associated infrastructure in Co. Offaly and Kildare was granted planning permission in 2021. MWP were the PM, leading the design, environmental, ecology and planning.
Role	Contributed to AA screening and NIS reports.
Project Description	Cappamore Bat Roost, Co. Kerry 2019 – 2021 The construction of a new dwelling in south Kerry proposed. The works included demolishing the old house and all other structures on site. Upon inspection of one those structures a Lesser horseshoe bat maternity roost was discovered. As bats are protected under law this structure was to remain and it was proposed monitoring of this roost continue during the construction phase.
Role	Contributed to AA screening and NIS report. Authored Toolbox talk for construction personnel. Carried out monthly emergence surveys and passive monitoring. Analysed data and wrote up reports.

Gerard McGrath
Miramar House
Glendalligan
Lemybrien
Co. Waterford
Mobile: +353 87 6274332
Email: gerardmcgrath25@gmail.com

Career History

Terra Nua Building Contractors (Part time) 09/19-Present

- General operative for family building contractor. Various duties from labouring to office administration

Ecological Surveyor (Freelance) 04/19-Present

- Carrying out bird surveys (VP and transect), in several sites around Munster/Leinster area. Also completed bat surveys for private dwelling planning applications, and assisted in bat surveys along proposed cable routes.

Duty Manager, 360 Cookhouse 03/18- 08/19

- Duty manager of busy restaurant.

Manager, The Lady Belle 09/12- 03/18

- Management of a vibrant town centre bar.

Education

PME in Post-Primary Education, Hibernia College. 04/20-Present

- Blended learning programme in which I am specialising in two post primary level subjects (Biology and Agricultural Science). A mixture of face to face, live, and on demand online content. Continuous support and assessment provided by a team of highly qualified staff and lecturers. Modules include; Foundations of education, teaching methodologies, Teaching subject mastery.

MSc Ecological Assessment (2nd Class Honours), University College Cork 09/12 - 09/13

- Developed skills in practical taxonomy, sampling (Distance sampling; Distance analysis; Counts and mapping surveys; Design and interpretation of bird and bat surveys) and interpretation of ecological data in the context of environmental legislation, Habitat mapping, Appropriate Assessment, Environmental Impact Assessment and Strategic Environmental Assessment. Attained skill in the ecological assessment of both terrestrial and freshwater habitats; Also Completed a 6 month ecological assessment of a semi-natural woodland area as a research project, using the

skills attained over the course of the Year.

BSc Zoology (2nd Class Honours), University College Cork

09/07 - 05/12

- Included the study of animal structure (anatomy and physiology), development (embryology), diversity (taxonomy), physiology, behaviour, ecology, genetics, evolution, and distributions (biogeography). Other Modules taken during the course of the degree included , biochemistry, microbiology and geology. Completed a 3rd year research project on biodiversity of forests, Irish forests and their history.

Skills & Training

- High proficiency in Computer use (MSOffice, Excel, Minitab, SPSS).
- Excellent working knowledge of ArcGIS, Mapinfo.
- Good Knowledge of Irish and European environmental legislation.
- Full Clean Drivers Licence
- Safe pass

References

Michael Pettit
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E:Michael@jitterbeans.ie

John Murphy
Senior Ornithologist & Ecologist
Malachy Walsh and Partners
Reen Point, Blennerville,
Tralee, Co. Kerry.
T : 083 4584132
E: john.murphy@mwp.ie



Jeremy King
Civil, Environmental and GIS Technician

- June 2004 Certificate in Interior Architecture CIT
- June 2006 City & Guilds Level 3 Certificate in Computer Aided Design (CAD)
- June 2012 2H1 for a Higher Diploma in Geographical Information Systems (GIS) UCC.

Particular Expertise	Jeremy is the lead GIS technician in MWP and assists the environmental team in completing EIA's, EIS's, wind farm feasibility studies and planning applications. He also works alongside the Marine Department and wind farm civils design team, particularly in constraint mapping and collating and generating GIS baseline data that ultimately influences design and layout. Jeremy works with the EIA team specialists in areas such as geotechnical peat stability, hydrology, noise, ecology and accompanies the environmental teams on in the field. He has expertise in WINDFARM design software that includes modules on wind farm layout, Photomontages, ZVI and Shadow Flicker. His base experience historically has been in CAD and he is responsible for the generation of wind farm design planning drawings and GIS based mapping/imagery associated with wind farm EIS's. He has worked a wide range of reports including peat stability, hydrological assessments, sediment and erosion plans and numerous wind farm EIS's where he has been responsible for the GIS and CAD input. Jeremy's civil engineering CAD design experience coupled with on site knowledge of wind farm sites means that he is a key member of the environmental and wind farm engineering teams in MWP.
Employment History	<ul style="list-style-type: none"> Jan 2009 – Present Windfarm Software Technician, Malachy Walsh and Partners Oct 2008 - Present ArcGIS Technician, Malachy Walsh and Partners July 2006 – Present Civil and Structural, Technician, Malachy Walsh and Partners Apr 2006 – July 2006 Draughtsman, Denis Moran, Architect, Cork
Health and Safety	<ul style="list-style-type: none"> MWP In-House Safety Procedures. MWP In-House Application of the Health, Safety and Welfare at Work (Construction). Safe Pass.
CPD	<ul style="list-style-type: none"> October 2008 ArcGIS January 2009 Wind Farm software (Photomontage & Shadow Flicker)

Relevant Experience

Jeremy has been the lead GIS input in the following projects:

- Glenbeigh to Caherciveen Greenway
- **Skellig Michael**, off Portmagee, Co. Kerry
- Cluddaun Wind Farm – Strategic Infrastructure Development
- Clydaghroe 50MW
- Boggeragh Mountains Wind Park Phase 2 87MW
- Toberatoreen Wind Farm 17MW
- Lettercraffroe Wind Farm 24MW
- Leanamore Wind Farm 24MW
- Loughaun North Planning Application (2008)
- Athea South Wind Farm – 10MW, Co. Limerick
- Killavoy Wind Farm, Co. Cork
- Gortavehy Pumped Hydro Energy Storage Project (Planned), 120MW, Co. Cork
- Glentanemacelligot Wind Farm 20MW
- Lisheen Mine Wind Farm, 2008- 2009 (Phase 1)
- Lisheen Mine Wind Farm, 2008- 2009 (Phase 1)
- Knockacummer Wind Farm (2008) 72.5MW
- Ballinvoher Wind Farm 9MW, Co. Limerick
- Boolabrien Wind Farm, co. Tipperary
- Coolegrean Wind Farm, Co. Limerick
- Glencarberry Wind Farm, Co. Tipperary

Project	Maine Solar Farm, Co Kerry. 2017-2019
Value	Confidential
Duration	2017 – 2019
Description	Environmental Assessment, Report, and Planning Application for a proposed 5MW Solar Farm in Kerry.
Role	Lead GIS Technician

Project	Madams Hill Solar Farm, Co Kerry. 2016
Description	Environmental Assessment, Report, and Planning Application for a proposed 5MW Solar Farm in Kerry.
Role	Lead GIS Technician

Jeremy King

Civil, Environmental and GIS Technician

Project Glenbeigh to Caherciveen Greenway
Value €16M
Duration 2014-2017
Description A 32km Cycleway/Walkway along the route of the South Kerry Railway line from Glenbeigh to Reenard Point. MWP carried out an assessment of structures including viaducts and bridges along the proposed route. This assessment included the bridging structure at Caherciveen and Viaduct at Gleensk. It also included an assessment of the tunnels and the developmet of an appropriate structure to deal with geotechnical instability at mountain stage.
Role Preparation of all GIS mapping and data.

Project Skellig Michael, off Portmagee, Co. Kerry
Value €16M
Duration Ongoing commission
Description Skellig Michael is a World Heritage Site maintained by the Office of Public Works. Since 1978, an on-going conservation programme has been undertaken, resulting in necessary structural interventions on some of the key features of the Island. These have included the historic structures, the access road and paths. The MWP input has included inspection, assessment and reporting on landslide and geotechnical risks arising from the high cliffs above the access areas. A detailed structural assessment, site surveys and an integrated approach with other key professionals is fundamental to all of the work being carried out on the Island.
Role Preparation of GIS mapping and data.

Project Cluddaun Wind Farm – Strategic Infrastructure Development
Value €172M
Duration 2011 - 2014
Description Malachy Walsh and Partners project managed the environmental impact assessment and planning application for this wind farm. The Firm's involvement included the management of the consultation process with representatives of An Bord Pleanala. MWP were also responsible for the civil engineering and road design, preparation of a sediment and erosion plan, preparation of an ecological restoration and management plan, ecological impact assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balance assessment, human beings assessment and landscape and visual impact assessment.
Role Preparation of all GIS mapping and data. Preparation of full planning pack and all EIS, GIS mapping and CAD. Preparation of model for shadow flicker analysis and preparation of preliminary Zonal Visual Impacts (ZVI).

Project Cordal Gridline Cable Route 14.8KM Cordal, Co. Kerry
Value €15M
Duration March 2015 - July 2016
Description Malachy Walsh and Partners were commissioned by Cordal Windfarms Ltd to provide a civil engineering design for two sets of electricity cable ducts along a local primary road and upgrading works to be carried out of 2Km of the route. The Project comprised of set of 110kV cable ducts from the public road boundary at Ballynahulla Substation to the Cordal 110kV substation and a set of 38kV cable ducts from a road junction south of Knocknaboul Cross to the Cordal 110kV substation. Using our prior experience of ESB Networks requirements and a 3.5 m centre to centre separation of the two sets of ducts, our design placed the entire 110 kV works, including the ducts, the joint bays and traffic passing bays, between the public road margins while dealing with obstacles such as river crossings.
Role Preparation of all GIS mapping and data

Project Scartaglen Gridline Cable Route 5.2KM Scartaglen, Co. Kerry
Value €7M
Duration May 2015 – August 2016
Description Malachy Walsh and Partners acted were commissioned by Harry Haribson to Design and construct the 38kV grid connection from Scartaglen Wind Farm to Knockeala Cross and tie in with the Cordal Gridline Cable Route. The works require the design and construction of the cable including trenching and the supply and installation of 38kV ducting and joint bays (including communications duct and cable) to ESBN's Specifications.
Role Preparation of all GIS mapping and data

Project Clydaghroe 50MW
Value €75M
Duration 2008 – 2011
Description MWP managed the planning and EIA for this project. The firm's input included Ecological Impact Assessment, Human Beings Impact Assessment, Shadow Cast Analysis, Air & Climate Assessment. A detailed sediment and erosion plan was prepared based on the peat stability assessment. MWP also completed the civil design, detailed RFI report and an appeal to ABP. The project included detailed consultations with the local authorities and statutory undertakers.
Role Preparation of all GIS mapping and data. Fieldwork, including collection of data for peat stability assessment and hydrology. Preparation of full planning pack and all EIS, GIS mapping and CAD.

Project	Boggeragh Mountains Wind Park Phase 2 87MW
Value	€180M
Duration	2009 – 2010
Description	The Malachy Walsh and Partners role included project management of Environmental Impact Assessment and planning application, liaison with all statutory undertakers and stakeholders, consultation with Cork County Council and progression of planning process. The Malachy Walsh and Partners input to the EIS included Ecological Impact Assessment, Human Being Impact Assessment, Peat Geotechnical Stability Assessment, Landscape and visual impact assessment, Shadow Cast Analysis, Air & Climate Assessment, including dust monitoring, Road Design, Traffic Impact Assessment and Cable Route Design.
Role	Preparation of all GIS mapping and data. Preparation of full planning pack and all EIS, GIS mapping and CAD. Preparation of model for shadow flicker analysis and preparation of Zonal Visual Impacts (ZVI). Preparation of photomontages, through WindFarm software.
Project	Toberatoreen Wind Farm 17MW
Value	€26M
Duration	2011 - 2013
Description	Malachy Walsh and Partners managed the Environmental Impact Assessment and planning application for this wind farm. The Firm's involvement included civil engineering and road design, peat stability assessment, preparation of a sediment and erosion plan, preparation of a ecological restoration and management plan, ecological impact assessment, ornithological assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balanced assessment.
Role	Preparation of all GIS mapping and data. Preparation of full planning pack and all EIS, GIS mapping and CAD. Preparation of model for shadow flicker analysis and preparation of Zonal Visual Impacts (ZVI). Preparation of photomontages, through WindFarm software.
Project	Lettercraffroe Wind Farm 24MW
Value	€36M
Duration	2010 – 2011
Description	Malachy Walsh and Partners project managed the environmental impact assessment and planning application for this wind farm. The Firm's involvement included civil engineering and road design, preparation of a sediment and erosion plan, preparation of a ecological restoration and management plan, ecological impact assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balance assessment
Role	Preparation of all GIS mapping and data. Fieldwork, including collection of data for peat stability assessment and hydrology. Preparation of full planning pack and all EIS, GIS mapping and CAD. Preparation of model for shadow flicker analysis and preparation of Zonal Visual Impacts (ZVI).
Project	Leanamore Wind Farm 24MW
Value	€36M
Duration	2010-2011
Description	Malachy Walsh and Partners project managed the environmental impact assessment and planning application for this wind farm. The Firm's involvement included civil engineering and road design, peat stability assessment, preparation of a sediment and erosion plan, preparation of an ecological restoration and management plan, ecological impact assessment, ornithological assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balanced assessment, human beings assessment and landscape and visual impact assessment.
Role	Preparation of all GIS mapping and data. Fieldwork, including collection of data for peat stability assessment and hydrology. Preparation of full planning pack and all EIS, GIS mapping and CAD. Preparation of model for shadow flicker analysis and preparation of Zonal Visual Impacts (ZVI).
Project	Fenit Harbour – Foreshore, Dumping at Sea and Dredging Contract Management
Value	€275,000 of works
Duration	2015-2016
Description	Malachy Walsh and Partners managed and prepared both the foreshore and DAS applications for the recent dredging campaign in Fenit Harbour. Both consents were secured. MWP designed the dredge project parameters, tendered the works and managed the dredging contract on site along with all mitigation measures. The works involved liaison with the EPA in terms of water quality and in reporting. OSPAR returns and dredging reports were completed. All specialist surveys required for the DAS application were procured and managed by MWP. All environmental and ecological/ornithological studies were completed in house by MWP
Role	CAD and GIS Mapping
Project	Aughinish Jetty – Foreshore, Dumping at Sea Consents
Value	€275,000 of works
Duration	2015-2016
Description	Malachy Walsh and Partners managed and prepared both the foreshore and DAS applications for the recent

	dredging campaign at Aughinish Jetty in the Shannon Estuary. Both consents were secured. The works involved liaison with the EPA in terms of water quality and in reporting. OSPAR returns and dredging reports were completed. All specialist surveys required for the DAS application were procured and managed by MWP. All environmental and ecological/ornithological studies were completed in house by MWP.
Role	CAD and GIS Mapping
Project	Buncrana Pier – Foreshore, Dumping at Sea and Dredging Contract Management - Donegal County Council
Value	Range of €150,000 to €200,000 per dredge campaign depending on dredge volume over 8 yrs
Duration	2017-2018
Description	Malachy Walsh and Partners are currently in the process of completing both Foreshore and Dumping at Sea application for a new phase of maintenance dredging works over the next 8 years. Applications are scheduled to be lodged in mid February 2018. The works involved liaison with the EPA in terms of the specialist studies required on bathymetry, benthic, archaeology, contamination testing, ecological and ornithological and water quality. All engineering, environmental and ecological/ornithological studies were completed in house by MWP
Role	CAD and GIS Mapping
Project	Fenit Harbour – Foreshore, Dumping at Sea and Dredging Contract Management – Kerry County Council
Value	Range of €300,000 to 500,000 depending on dredge volume over 8 yrs
Description	Malachy Walsh and Partners are currently in the process of completing both Foreshore and Dumping at Sea application for a new phase of maintenance dredging works over the next 8 years. Applications are scheduled to be lodged in early march 2018. The works involved liaison with the EPA in terms of the specialist studies required on bathymetry, benthic, archaeology, contamination testing, ecological and ornithological and water quality. All engineering, environmental and ecological/ornithological studies were completed in house by MWP.
Role	CAD and GIS Mapping
Project	Ballycotton Coastal Modelling
Value	€10k
Duration	April-June 2018
Client	Pearse Flynn
Description	MWP were engaged to undertaking a coastal processes impact study of a planned rock armour revetment schemes in Ballycotton, Co. Cork. A Delft 3d Hydrodynamic and SWAN wave model were developed to simulate tidal and wave driven sediment transport regimes in Ballycotton bay. The models were run for both existing and proposed development scenarios. The coastal processes impact report forms part of a suite of documents submitted for planning to Cork Co. Co.
Role	CAD and GIS Mapping



JIM SINGLETON

Team Manager (Environment & Engineering) & Principal Technical Consultant

Discipline: Acoustics

Key Qualifications: BSc (Hons) Music Technology, Diploma in Acoustics & Noise Control (IOA)

Professional Memberships: MIOA, AES

Experience: 16 years (consultancy), 7 years (lecturing)

INTRODUCTION

Jim is a Principal Technical Consultant whose experience within acoustics consultancy covers a range of sectors including environmental noise, occupational noise and architectural acoustics but with particular expertise in energy generation, storage and infrastructure projects.

Jim joined TNEI in September 2014 and is the Team Manager for the Environment & Engineering Team, who are based in Glasgow, Newcastle and Dublin. Jim's specific focus is on Quality Assurance and the resourcing of all of our noise and acoustic services, as well as other team disciplines including planning and consenting services, civils and geotechnical studies, shadow flicker assessments and GIS work.

KEY EXPERIENCE

- Noise propagation modelling
- Shadow Flicker assessments for planning, complaints investigations and SF control.
- Noise assessments, compliance monitoring and noise management for energy generation and energy infrastructure
- PPC Permitting
- Transportation noise & vibration (road, rail, marine & aircraft)
- Construction noise assessments
- Planning applications for energy, industrial, commercial and residential developments
- Quarrying and blast monitoring (noise & vibration)
- Mixed-use master planning
- ETSU-R-97 Noise assessments
- Room acoustics modelling
- Independent Technical Expert (ITE) for the Capacity Market
- Due diligence
- Expert Witness and Appeal Hearings

EDUCATION AND PROFESSIONAL STATUS

- Diploma in Acoustics & Noise Control, Institute of Acoustics (2008)
- BSc. (Hons) Music Technology, First Class (2001)
- Member of the Institute of Acoustics (MIOA)
- Member of the Audio Engineering Society (AES)

Jim is a full Member of the Institute of Acoustics, has 16 years consultancy experience and previously lectured in acoustics for 7 years.

EXPERIENCE RECORD

TNEI Services Ltd
August 2014 – present

Principal Technical Consultant & Team Manager

ENERGY PROJECTS

Jim primarily works on energy projects covering a range of renewable energy generation, storage and electrical infrastructure. Some projects of note include:

Generation & storage

- BESS: Jim has worked on a large number of battery storage schemes up to 750+ MW
- Capacity Market Schemes, numerous (1 MW – 40+ MW)
- Solar Farms (centralised, decentralised and hybrid layouts)
- Co-location projects e.g., Solar Farm & BESS
- Energy from Waste plants (EIA and PPC applications)
- Due Diligence, including a 7GW+ solar portfolio and wind farms (UK and abroad)

Infrastructure

- Triton Knoll Offshore Windfarm (OWF) landfall (prediction and monitoring of HDD activities)
- NorthConnect (Norway / Scotland Interconnector)
- Galloper 336 MW OWF onshore substation
- Alwen Forest Overhead Line optioneering studies
- Aberdeen OWF landfall (predictions & measurements for cable winching) and operation (noise control for substation operations)
- New Gorbals District Heating Scheme
- Seagreen II (Berwick Bank) OWF substation noise studies (HVAC & HVDC modelling)
- Hydrogen refuelling stations and electrolyser projects
- Numerous synchronous condensers (planning applications & operational noise monitoring)

MARINE, NEAR-SHORE AND PORTS

Jim has worked both locally and internationally on marine, near shore and port projects and provided a wide range of consultancy services to this sector. Examples include;

- Umm Qasr, Iraq (ESIA studies and chapter for extension of container port and RORO services)
- Johan Castberg FPSO Module (operational noise predictions for floating production storage and offloading vessel)
- Port of Cromarty Firth, Invergordon (PPC application for oil & gas decommissioning and offshore asset recovery)
- Lochmaddy/Tarbert (Harbour expansions to facilitate larger ferry on Isle of Harris and North Uist.
- Ullapool land reclamation and harbour development – Noise and vibration studies



John N Murphy **Senior Ornithologist & Environmental Manager**

A Qualified (A permit) Bird Ringer with the British Trust for Ornithology.
Certified JNCC Seabird Surveyor.
Schools Lecturer and a Specialist member of the Heritage in the Schools Scheme.
Founder of the Loop Head Bird Observatory.
Freelance Tour Guide and Course Leader.
Founder of the Clare Branch Birdwatch Ireland.
Wildlife Film Maker, Photographer, Radio Presenter and Author.

Particular Expertise

John Murphy is an ornithologist, wildlife expert and wildlife documentary maker. He has been working in the field of ornithology and ecology since 1982. He has extensive knowledge of the landscape and in particular bird populations of Ireland. He collaborates regularly with NPWS on different projects throughout the country. John has been working as part of the MWP Environmental and ecology team on a wide variety of upland wind farm projects throughout the country since 2010. John is one of the country's foremost ornithologists and is a licensed bird ringer. He has always had an interest in wildlife photography and his work has been published in many magazines and books Nationally & Internationally. As a 'Heritage in the Schools Specialist', he has travelled the country lecturing in schools and colleges, and to various clubs and organizations. He was the Database Manager & Biodiversity Officer with Clare County Council. He spends as much time in the field as possible, observing the wide range of biodiversity that Ireland has to offer.

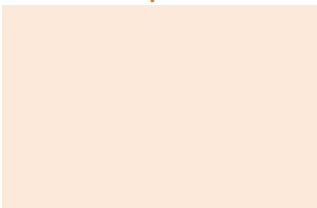
Employment History

Freelance Ornithologist.
2010 – 2021 Ornithologist/Environmental Manager Malachy Walsh and Partners.

Health and Safety

MWP In-House Safety Procedures.
MWP In-House Application of the Health, Safety and Welfare at Work (Construction).
Holds an up to date current Safe Pass Card.

Relevant Experience



Project

South Kerry Greenway

Value

€4M

Duration

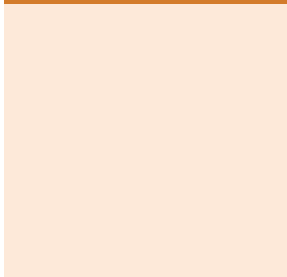
2015 - 2017

Description

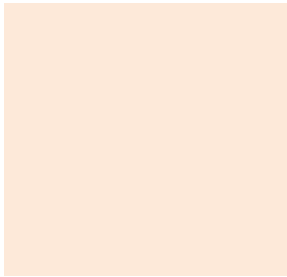
A 32km Cycleway/Walkway along the route of the South Kerry Railway line from Glenbeigh to Reenard Point. MWP carried out an assessment of structures including viaducts and bridges along the proposed route. This assessment included the bridging structure at Caherciveen and Viaduct at Gleensk. It also included an assessment of the tunnels and the development of an appropriate structure to deal with geotechnical instability at mountain stage.

Role

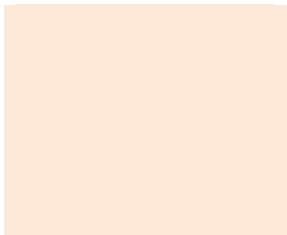
Senior Ecologist and lead on Ornithology work



Project	Skellig Michael Star Wars VIII Filming Project
Value	n/a
Duration	2015
Description	This project was within a Natura 2000 site designated for internationally important seabird populations. MWP undertook a comprehensive breeding bird survey of the island to fully understand the breeding phenology of all of qualifying interests of the SPA over a 5 month period. This study was used to inform the project design and timing of any filming to avoid and minimise any interaction with the breeding seabird population, and the subsequent Screening for Appropriate Assessment undertaken. MWP Ecologists worked closely with NPWS during the project.
Role	Principal Seabird Surveyor; Co- Author of NIS; consultation with NPWS.

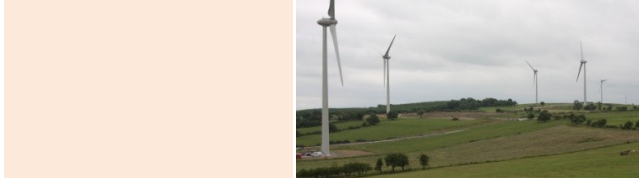


Project	Skellig Michael OPW Conservation Works
Value	n/a
Duration	2015 to 2019
Description	This project was within a Natura 2000 site designated for internationally important seabird populations. OPW undertake regular maintenance and conservation works on the island during the bird breeding season. MWP provide a site supervision role to ensure the protection of nesting seabirds as well as conducting any NIS reports for relevant consents.
Role	Principal Site/Works Supervisor; consultation with NPWS.



Project	Bord na Mona Midland Bogs Bird Surveys
Value	n/a
Duration	2014-present
Description	Malachy Walsh and Partners have project managed, designed and undertaken winter and breeding bird surveys for a number of Bord na Mona sites across the midlands over the last number of years.

Role Lead Ornithologist and principal surveyor and field manager for all these projects.



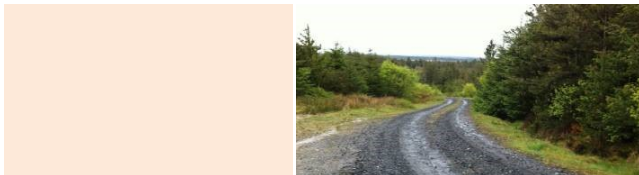
Project Kill Hill Wind Farm

Value €55m.

Duration 2013-2015

Description Bord Gáis Éireann /Brookfield developed a 16 turbine Wind Farm on Kill Hill in County Tipperary. MWP secured the contract to deliver certain aspect of engineering, design and full Environmental Management to the wind farm and substation that was located underneath the existing 110 kV overhead line running from Thurles to Cahir and passing to the west of Dualla. The works began in early 2014 and were completed in March 2015.

Role Environmental Manager for the complete project time frame.



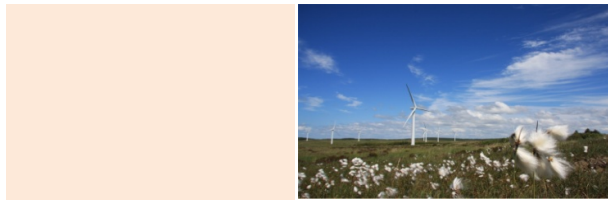
Project Cluddaun Wind Farm

Value €200m.

Duration 2009-2011

Description Cluddaun Wind Farm was confirmed by An Bord Pleanála (ABP) as Strategic Infrastructure Development (SID) following a comprehensive pre-application consultation process. Cluddaun Wind Farm is a Strategic Infrastructure Development (SID) requiring the applicant to engage in a pre-application consultation process, which was navigated under the guidance of Malachy Walsh and Partners. The firm also managed and undertook the planning, Environmental Impact Assessment and civil engineering design for this project. Consultants at MWP conducted most of the specialist studies and assessments. This project required a considered and detailed Stakeholder Management Programme with statutory bodies, non-government organisations and local community which was coordinated and managed by the firm. A Community Benefit and Recreation Plan to enhance existing and create new amenity was developed by MWP together with contributions from local community groups and MCC. With the aim of minimising construction impacts MWP developed, as part of this project, an innovative approach to assessing constructability in the peatland environment was adopted. This new approach synthesised previously disparate empirical and numerical analysis techniques to identify zones of low susceptibility suitable for infrastructure. This original and novel approach to constructability and appreciation of impacts was well received by key stakeholder groups.

Role Project Ecologist & Ornithologist.



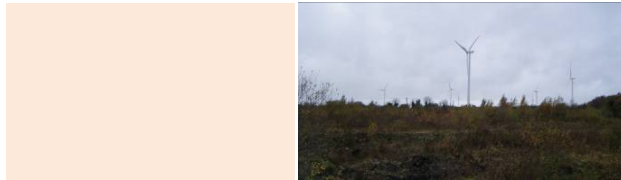
Project **Booltiagh Phase II Wind Farm 12MW, Co. Clare**

Value €18M

Duration 2012 - 2013

Description Malachy Walsh and Partners acted as the contractors civil designers for a six turbine (Enercon) addition to the built Bootliagh Wind Farm increasing the overall capacity by 12MW to 31.5MW. The firm was responsible for civil engineering aspects including internal road design, geotechnical assessment, peat stability assessment, drainage layout, turbine hardstand and foundation design.

Role Environmental Manager for complete period of Phase II Works.



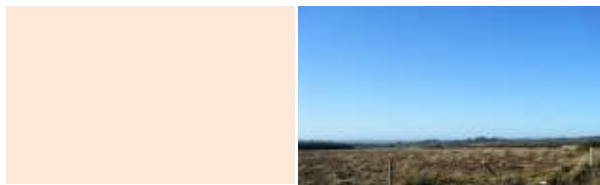
Project **Lisheen Wind Farm Post-construction Monitoring**

Value Confidential

Duration 2010 – 2012

Description The 18 turbine. Lisheen Wind Farm became fully operational in 2009. Planning permission was granted for the development with the condition that three years of post-construction monitoring be conducted within the wind farm site. Malachy Walsh and Partners are responsible for coordinating and conducting the post construction monitoring. Post-construction monitoring examines the success of mitigation measures incorporated into the design of the wind farm and overviews the overall ecological impact of the development.

Role Project Ornithologist



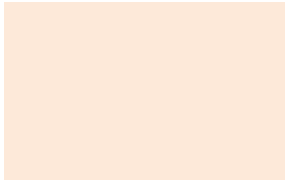
Project **Toberatoreen Wind Farm 17MW**

Value €26M

Duration 2010 - 2011

Description Malachy Walsh and Partners project managed the environmental impact assessment and planning application for this wind farm. The Firm's involvement included civil engineering and road design, peat stability assessment, preparation of a sediment and erosion plan, preparation of a ecological restoration and management plan, ecological impact assessment, ornithological assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balanced assessment.

Role Project Ornithologist.



Project	Athea Wind Farm 38 MW
Value	€76m
Duration	2008-2009
Description	Malachy Walsh and Partners acted as Technical Advisors on site with responsibility for ecological Monitoring civil design, stakeholder consultation, mapping and liaison with planning authority. A review of the contractor design build submissions, assessment of turbine foundation design and environmental overview was also included. Significant liaison and discussion was necessary with Limerick County Council on planning compliance and the successful granting of various extensions of permission and planning amendments.
Role	Project Ornithologist & Environmental Advisor

Career Experience Prior to MWP

Current Projects

Client	Ornithological, Ecology and Environmental Management
Rengen	Carrane Hill, Drumlough, Arigna, Largan Hill & Meenadreen Wind Farms
EMP	Garpsdular Wind Farm, Iceland
Michael Casey	Barranstock Wind Farm, Co. Waterford
EMP	Coumnacappul Wind Farm, Co. Waterford
Coillte	Barracree Wind Farm, Co. Waterford
Coillte	Coolnasmear Wind Farm, Co. Waterford
Coillte	Broe Mountain Wind Farm, Co. Kerry
Coillte	Castlebanny Wind Farm, Co. Kilkenny
Coillte	Deerpark Wind Farm, Co. Carlow
Coillte	Carrownagowan Wind Farm, Co. Clare
Private Client	Knockroe Wind Farm, Co. Roscommon
SSE	Galway Wind Park, Co. Galway
SSE	Glenora Wind Farm, Co. Mayo
OPW	Skellig Micheal Island Seabird Monitoring, Co. Kerry
Wexford County Council	Waterford to New Ross Greenway, Co. Waterford
Athlone Sports Complex	Bird Surveys & Environment, Co. West Meath

Past Projects

Star Wars	Skellig Michael Island, Co. Kerry, Sybil Head, Co. Kerry, Dunmore Head, Co. Kerry, Loop Head. Co.
MacGivilely Films Ltd	Skellig Michael Island, Environmental Manager, Co. Kerry
Private Client	Blasket Islands Seabird Surveys, Co. Kerry

John Murphy

Senior Ornithologist/Environmental Manager

Kerry County Council	Viewing Platform at Dunquin, Bird Surveys, Co. Kerry
Kerry County Council	Wader Counts on Tralee Bay, Co. Kerry
Kerry County Council	Killarney National Park Loop Walk, Bird Surveys, County Kerry
Wexford County Council	Tacumschin Flood Relief, Bird Surveys and advisory, Co. Wexford
Element Power	Boolabrien Wind Farm EclA, Co. Tipperary
Bord na Mona	Mount Dillion Wind Farm, Co. Roscommon
Bord na Mona	Ballydermot Wind Farm, Co. Offaly/Kildare
Airtricity	Dromada Wind Farm, Co. Limerick
Element Power	Tawansool Bangor Erris Wind Farm, Co. Mayo
Western Power	Knockranny Wind Farm, Co. Galway
Mayo County Council	Delphi Bridge Restoration Works, Co. Mayo
Enercon Energy Ltd	Boggeragh Wind Farm, Co. Cork
SSE	Curragh Mountain Wind Farm, Co. Cork
Dublin County Council	Howth Pier Restoration Works, Co. Dublin
Private client	Coolagreen Wind Farm, Co. Kerry
Kerry County Council	Tralee Bay Estuary Counts, Co. Kerry
Dublin County Council	Dun Loghaire Pier Restoration Works, Co. Dublin
L&M Keating	Kilrush Marina, Clare, Shorebird monitoring
Harry Harbison	Scartaglen Wind Farm, Kerry, Bird survey monitoring, Pre-construction

The following is a list of survey works John has contributed to in his career to date outside of MWP:

Winter Atlas 1981 – 1983:

During this survey period of 3 winters, John covered a selection of areas within a designated 10km square, counting all birds present. His designated areas were in Shannon and Ennis.

New Breeding Atlas 1989.

This was the follow up to the winter Atlas of 1981/83 with a similar recording format. John covered a 10km area, counting birds breeding within 11 of the 2km x 2km square tetrads.

Bewick's, Mute and Whooper Swan Survey: Winter 1990 – 1995.

This was an Office of Public Works, Irish Wildbird Conservancy and Wildfowl and Wetlands Trust Survey in which he visited numerous lakes in Clare and counted the presences of all swan species.

Clare Winter Wetlands Survey 1993 – 1995.

This was a survey that he personally proposed and organised at a local level prior to the Nationwide IWeBs survey work. He organised this work through the local Branch of Birdwatch Ireland (IWC Clare Branch). This survey work was very successful and the aims were to monitor any local wader and wildfowl population fluctuations trends or changes

Burren Atlas 1993 – 1995.

This recently published book was the brainchild of the local Birdwatch Ireland group and was carried out in conjunction the local Clare branch of Birdwatch Ireland and the OPW. He assisted Liam Lysaght in the setting up of this project and personally counted 20 squares in the Burren, to determine the status of birdlife in this unique region.

Irish Wetland Bird Survey (IWeBs) 1994 – 1999.

This is a Birdwatch Ireland based survey of Irish Wetlands. John was the co-ordinator for County Clare, organising people to count many lakes and wetlands in Clare and to submit count sheets to him, as County Clare recorder. This information was then forwarded to the national database in Dublin. He also co-ordinated Duchas and Birdwatch Ireland personnel and staff on a combined Shannon and Fergus Estuary count twice over every winter throughout the survey period.

Barn Owl Survey 1995 – 1996.

This was a Birdwatch Ireland survey in which John reported sightings, nesting or roost sites within Clare and his own locality. The Barn Owl Project work is ongoing, to which he contributes to on a regular basis.

John Murphy

Senior Ornithologist/Environmental Manager

Non Estuarine Coastal Waterfowl Survey (News) 1997 – 1998.

John co-ordinated this survey, in Clare, on behalf of Birdwatch Ireland. He personally counted four sections of the Clare coast. During these counts, he was also contracted to carry out fieldwork in counties Mayo, Sligo and Donegal.

Countryside Bird Survey 1998 - 2003.

John helped in setting up and for a short period co-ordinated this joint NPWS and Birdwatch Ireland survey. He was, at the outset, responsible for organising counters within Clare as part of the nationwide coverage.

Hen Harrier Survey 1998 – 1999.

John was approached by the joint Raptor Study Group, NPWS and BI to co-ordinate certain areas of Clare. He supplied confidential information to the study group prior to this survey and is presently monitoring two known breeding sites.

Black Guillemot Survey 1999 - 2001.

John took part in this survey, recording breeding birds along the south west corner of the county between Kilkee, Loop Head and Scatterry Island, Kilrush

Seabird 2000.

John was one of a team of three people assigned to carry out seabird counts at the Cliffs of Moher and personally counted the seabird colonies at Loop Head.

Winter Atlas of Birds 2007 – 2011

John was contracted to do Pilot work in the Clare/Limerick Region to carry out three months of surveying in two 10km Square areas during 2005. This work was funded by the British Trust for Ornithology in the UK and Birdwatch Ireland.

John has also produced and published many scientific papers and reports on ornithological issues. These publications prove his ability to deliver on time and his competence to work independently or with others as a team, in gathering detailed information and produce papers of historic and scientific importance. He is the official county Recorder for Clare, gathering and listing all sightings of birds to be submitted to the Irish Rare Birds Committee and Annual Irish Birds publication. He produces the Loop Head log on an annual basis. Sightings logged of birds, cetaceans and other insect life is compiled during observations at the peninsula and later forwarded by him to interested bodies on request. In his spare time John runs the following blogs and websites www.clareBO.com & www.clarebirdwatching.com and his own personal blog site www.murfswildlife.blogspot.com

Publications, Papers and documentaries include:

The Shannon Airport Lagoon, a Unique Irish Habitat.

Winter distribution and migration patterns of the Ringed Plover *Charadrius hiaticula* in County Clare.

The breeding distribution of Ringed Plovers *Charadrius hiaticula* on estuarine and coastal shorelines of Clare.

Distribution and habitat use of the Dipper *Cinclus cinclus* in county Clare.

Preliminary Report on the Wildlife of Mutton Island, County Clare 1990 to 1993.

A trip Report from Mutton Island County Clare in May 1995 (a week of observations)

Birdlife of Fin Lough County Clare.

Birds of Clare and Limerick 1982 – 1991.

Clare Bird Report 1992 – 1996.

Clare Bird Report 1997.

Clare Bird Report 1998.

Clare Bird Report 1999.

John Murphy

Senior Ornithologist/Environmental Manager

Autumn Seabird Migration at the Bridges of Ross from 1978 to 1997.

County Reports for UK "Birdwatching" Magazine.

Ornithology of West Clare the Changing Patterns.

Bird Communities of Quin.

The Clare Cuckoo Survey 2006.

Clare Hedgehog Survey 2007.

Biodiversity Walks in Ennis and Environs.

Proposed Wild Flower and Tree Planting beside the new cycle lanes along the N18 Limerick/Shannon Road

The Birds of the Cliffs of Moher, a book with accompanying DVD.

Birds of Fanore

Publication on the "Birds of Quilty, Lough Donnell and Mutton Island" for the Leon Committee in Quilty.

An Educational DVD on the River Mulkear for the Shannon Harbour Regional Fisheries Board and Tipperary Heritage Office.

A six part wildlife documentary series for TG4 on Invasive Species to Ireland called "Ciomtíoch Gan Chuiread" which aired in the Autumn of 2008.

A six part wildlife documentary series for TG4 on lost species to Ireland called "Ag Dul in Eag" which was aired in Autumn 2011.

As Biodiversity Officer he assisted in the publication being produced by Leader and the Environment Section of the Clare County Council called "The Living Farmland.

Current Projects in progress:

The Birds of Clare 1800's to Present Day.

Clare Birds "A site Guide to the best locations in Clare for birds"

The Natural History of Clare – A Guide to the best Wildlife and Areas.

County Habitat Survey

John has an in-depth knowledge of all the habitats in Clare. This is due to the many years of fieldwork, which he has organised or taken part in throughout the county. Fieldwork as outlined above and other activities such as, leading

John Murphy

Senior Ornithologist/Environmental Manager

walking and birdwatching tours, and ringing birds in many of the habitats listed below, has greatly added to his knowledge of the county.

Habitats:

- Burren*
- Forestation*
- Agriculture pastures and other neutral grasslands*
- Moorland*
- Marshland*
- Saltmarsh*
- Rivers & Lakes*
- Upland*
- Estuaries*
- Lowlands*
- Coastal Zones*
- Off shore Islands*
- Beaches*
- Open Sea*

As a member of the Heritage Specialist “Heritage in Schools Scheme” he travels to many National schools in the country, lecturing to pupils on biodiversity, birds, habitats and other natural subjects.

John regularly delivers lectures to Birdwatch Ireland branches around the country. He has lead tours to Portugal, Spain, Greece and Turkey and regularly runs courses at Cape Clear Bird Observatory on subjects like “Birdwatching for Beginners” & “Introduction to Bird Ringing”. He also lectures on birds and wildlife destinations from other countries such as, South Africa, North Africa, the US, Canada, Costa Rica, Sri Lanka, Iceland, Scandinavia, and on wide selection of European and Mediterranean Countries.

Through his work in schools and in the public place, he is very aware of the need to educate the young and promote the environment. Working with other local community groups in the past under Leader or local environmental committees, as well as Data Base Manager and Biodiversity Officer, has given him the knowledge and understanding, of how to approach and encourage individuals to partake in projects.



Ken Fitzgerald

BSc Surveying, Dip Construction Econ, PGDip Planning,

Business Development & Project Manager; Marine, Environment, Energy and Planning

2017 Diploma in EIA, Portobello College

2003 Post Grad Dip Coastal Zone Management UL

2001 Post Grad Dip Planning Trinity College Dublin

1985 Dip Construction Economics DIT

1985 BSc Surveying Trinity College Dublin

Particular Expertise

Ken Fitzgerald set up and previously managed the Environmental and Planning Department in MWP. Today he has a dual role in managing the Ecology Department and secondly focussing on Business Development for Renewable Energy, Marine, Ecology, Environment and Infrastructure across the company. In addition, he also acts as a Project Manager on Large scale Renewable Energy and Marine infrastructure projects across the country. He has worked on all aspects of environmental undertakings, including EIA project management, planning practice/legislation, project feasibility studies, Energy Assessment, EMS, IPPC, Marine & Coastal, Public Consultation, Stakeholder Management and Waste Management. His role sees him having an input on feasibility, environmental, planning and cost viability across a range of business sectors, including renewable energy, commercial, marine and sports/leisure. In managing the environmental and planning department he has worked with a number of key clients, and was responsible for managing multidisciplinary teams, tight deadlines, and full engagement with key stakeholders. The following are his core areas of expertise:

Planning; EIA; Engineering design and construction; Community Engagement and Stakeholder management; Foreshore Licensing; Dumping at Sea Licensing; Marine Engineering and dredging; Renewable Energy – Wind, Solar and battery storage; Concrete repairs to marine and bridge structures; Planning appeals, oral hearings and Judicial Review proceedings; Low Energy housing and systems building.

His capability in the identification and mitigation of potential environmental impacts of large infrastructure projects leads to successful planning outcomes for challenging projects. This is complemented by his practical knowledge of heavy civil engineering, marine engineering and construction and his familiarity with planning, marine consents, environmental and contract management. Delivery of projects from inception through the consents process and development on site is a primary role.

Project road mapping and risk reduction strategies for projects of varying scale is a key area of expertise.

Health and Safety

MWP In-House Safety Procedures.

MWP In-House Application of the Health, Safety and Welfare at Work (Construction). Safe Pass.

CPD

In-house and external courses and seminars on Wind farm Design, Contract Documents, Environmental Awareness, Geotechnical and Peat Stability, HR, Grid Infrastructure, EIA, SEA.

Specialist course's in planning legislation, Environmental Legislation, Appropriate Assessment

Relevant Experience

Project	Carrownagowan WF, Co Clare, Coillte - ongoing . 90MW scale wind farm progressing through the Strategic Infrastructure planning process. MWP are the lead PM , designer, EIAR, NIS and planning.
Value	€180M
Duration	2018 to 2022
Role	Tender submission, Planning and EIAR approach, SID planning strategy, Community Engagement, EIA advice, engineering design feasibility, Client Relationship Manager. Planning granted September 2022
Project	Drumnahough Wind Farm, Co Donegal - 60MW scale wind farm progressing through the Strategic Infrastructure planning process. MWP are the lead PM , designer, EIAR, NIS and planning
Value	€120 million
Duration	2019 to 2022
Role	Tender submission, Planning and EIAR approach, SID planning strategy, Community Engagement, EIA advice, engineering design feasibility, Client Relationship Manager Planning Granted September 2022
Project	Cluddaun Wind Farm, Co Mayo – Coillte - – Strategic Infrastructure Development
Value	€172M
Duration	2 years, 2012 - 2014
Role	Public Consultation, Stakeholder Management, Public Consultation, Strategic Infrastructure planning strategy. Dealing with all aspects of planning application with An Bord Pleanala. Engagement with Local Authorities and Statutory Bodies

Project Value	Knockranny Wind Farm, Co Galway – Western Power Developments, 30MW, €58M
Duration	2010 – 2020. Two planning applications, two grants of planning, two ABP appeals and judicial reviews proceedings and successful JR outcome in February 2020.
Role	Planning strategy, public consultation, management of EIS approach, overseeing of archaeology and peat approach. Planning appeals, Judicial Review inputs.
Project Value	Boggeragh Mountains Wind Park Phase 2 87MW €180M
Duration	2008 – 2011
Role	Involved in the project management and planning strategy of the final phase of the EIS, and preparation of the application for planning to Cork Co Co. Review of the design and layout to minimise impacts, dealing with planning strategy, Public Consultation, constructability and Response for Further Information from Cork County Council. Planning strategy and approach for appeal to An Bord Pleanala.
Project Value	Clydaghroe 50MW €75M
Duration	2008 – 2009
Role	Planning strategy and approach. Involved in the preparation of the detailed RFI and the appeal to ABP. Particular input in terms of the structure and content of the planning appeal, water quality issues, drainage and sediment control measures and in dealing with nutrient loading to watercourse's. Review role for the EIS and overview on constructability issues pertaining to the site, Public Consultation.
Project Duration	Dairygold Dryer Facility Expansion and Redevelopment, Mallow, Co. Cork 2011
Role	Planning Advisor, Contributor to EIA and engineering design aspects
Project Value	Brewery Quarter Development, Cork City – BAM Heineken €110m
Duration	2011-2013
Role	EIS Project Manager/ Planning Advisor
Project Value	Knockacummer Wind Farm 72.5MW €120M
Duration	2008 – 2011
Role	EIS contributor prepared the geotechnical stability report and drainage plan. Undertook fieldwork, in terms of hydrology, identification of ecological features such as hedgerows, badger setts and the removal strategy for invasive species such as Japanese Knotweed and Himalayan Balsam.
Project Value	Fenit Harbour – Foreshore, Dumping at Sea and Dredging Contract Management €275,000 of works
Duration	2015-2016
Role	Project Manager / Statutory Consents Advisor
Project Value	Aughinish Jetty – Foreshore, Dumping at Sea Consents €275,000 of works
Duration	2015-2016
Role	Project Manager / Statutory Consents Advisor
Project Value	Buncrana Pier – Foreshore, Dumping at Sea and Dredging Contract Management - Donegal County Council Range of €150,000 to €200,000 per dredge campaign depending on dredge volume over 8 yrs
Duration	2017-2018
Role	Project Manager / Statutory Consents Advisor
Project Value	Fenit Harbour – Foreshore, Dumping at Sea and Dredging Contract Management – Kerry County Council Range of 300,000 to 500,000tonnes depending on dredge volume over 8 yrs
Role	Project Manager / Statutory Consents Advisor
Project Value	South Kerry Greenway €16M
Duration	2014-ongoing
Role	Planning Advisor
Project Duration	Cloghane Loopwalk, Co. Kerry 2016-2017
Role	Environmental Feasibility
Project	Wetlands Tralee Lee Valley Activity and Nature Park Value €3.8 2010 -2013

CV

Michael O'Clery, Curriculum Vitae Summary (full CV available upon request)

February 2023

Michael O'Clery, Curracoolenagh, Camp, Tralee, Co. Kerry.
Director of Goldcrest Environmental Services Ltd.

Phone: 066 7130005 Mobile: 087 9711519 Email: michaeloclery@gmail.com

Occupation Bird Surveyor, environmental consultant, bird author and illustrator.

Experience I have been birding for over 40 years and, since 2005, have been involved in many professional bird surveys, projects and bird counts in Kerry and throughout Ireland, for BirdWatch Ireland, NPWS and several Environmental Consultancies and NGOs. I now work as a full-time Bird Surveyor for Goldcrest Environmental Services Ltd., with contracts with several Environmental Consultancies and NGOs. I have also illustrated and co-authored major books on birds in Ireland,

SUMMARY OF RECENT SURVEY EXPERIENCE

March 2021 to present Barn Owl survey work for John Lusby Ecology, involving national large scale fieldwork for the presence of Barn Owls within 5km of proposed major roads projects – Wexford N25 Rosslare to Enniscorthy, M20 Cork to Limerick, N2 Ardee to Castleblaney, Galway Bypass, and others. Includes drone surveys of sites, nest monitoring, and ringing of owls. Work ongoing into autumn 2023.

July 2022 to present Ecological surveys for Malachy Walsh Partners for proposed Zip line on Valentia Island, Co. Kerry. Surveys under way include Vantage Point surveys, Breeding Bird Surveys, Cliff-nesting Bird Surveys, Raptor Breeding Survey and Breeding Chough Survey. Work ongoing until July 2023.

December 2019 to present VP and transect bird survey work, Hen Harrier roost and Woodcock survey work. Environmental Surveyor for MKO Environmental Consultants, in counties Cork, Galway, Kerry, and Limerick.

December 2018 to present VP and transect bird survey work. Environmental Surveyor for Malachy Walsh Environmental Consultants, with bird and Barn Owl survey work in counties Kerry, Limerick, Waterford, Galway and Kilkenny.

October 2019 to March 2020 Winter low tide bird counts, Castlemaine Harbour. Contract Fieldworker for Inish Environmental Consultants, Co. Clare, to count shorebirds on tidal transects on a monthly basis.

January 2021 to August 2021 Ecological Surveys, for Malachy Walsh Partners, for the proposed Marina extension at Dingle Harbour, Co. Kerry. Surveys conducted included Winter Birds Survey, Breeding Birds Survey, Black Guillemot Survey, Herring Gull Survey (including use of drones for survey work), Foraging Cough Survey, Cliff-nesting Species Survey, Otter Survey and Coastal Habitats Survey.

April to July 2019 VP and transect Merlin Survey work. Environmental Surveyor for MKO Environmental Consultants, Galway, at Knocknamork, Cork. Survey for breeding Merlin and other raptors.

October 2019 to April 2020 Hen Harrier Winter Roost Survey. Environmental Surveyor for UCC , monitoring numerous winter roosts in Co. Kerry and collection of Hen Harrier pellets for winter diet analysis.

July 2019 BirdWatch Ireland Nightjar Survey Contract Fieldworker for BirdWatch Ireland/ NPWS for nocturnal survey for Nightjar in Counties Tipperary and Cork, also using drones for habitat assessment.

August/September 2018 VP bird survey work for wind farm development in Co. Offaly. Contract Fieldworker for Alan Lauder Consulting.

June to August 2018 UCC SHINE Project, Small Mammal Survey Project to determine prey abundance for Hen Harriers in two ages of pre-thicket second rotation forestry and in heather moorland, at eight study sites in the SW of Ireland.

January 2016 to December 2018 Assessing the Impacts of Major Roads on Barn Owls in Ireland to Identify Requirements for Mitigation. Contract Fieldworker to BirdWatch Ireland from January 2016 to December 2018. A major three-year project funded by Transport Infrastructure Ireland to determine the status of Barn Owls within a 10km corridor of an 80km stretch of the M8, analysis of current and past road casualties on the motorway and other roads, and a full survey and monitoring of all known Barn Owl nest and roost sites in the M8 area and a control area without motorway, 30km to the west. An important aspect to the project was the tagging of Barn Owls with GPS data loggers, both in the vicinity of the M8 and the Tralee Bypass.

2008/18 Barn Owl and Other Raptors Survey, Co. Kerry. Continued annual monitoring of known nest sites of Barn Owls, Long-eared Owls and Kestrels throughout Co. Kerry, including raptor nest box projects involving co-operation with local groups, initiated from summer 2015 onwards.

2014/17 Survey of Barn Owl Mortality on the Tralee Bypass, Co. Kerry from June 2014 to December 2017. Funded by Transport Infrastructure Ireland and Kerry County Council. Contract Fieldworker to BirdWatch Ireland in an investigation into Barn Owl mortality along the Tralee Bypass, with a full survey for Barn Owl nest and roosts within 5km of the Bypass, and a year-long road casualty survey, conducted weekly, of all avian and mammal road casualties along the 13.5km route. This survey was merged with the 2016/17 M8 Barn Owl survey noted above.

2017 National Peregrine Survey. Contract fieldworker over six weeks to survey Peregrine nest sites in Co. Kerry in summer 2017.

2014/16 Barn Owl and Raptor Survey, Galway Bypass. A survey for Barn Owls and other raptors within 5km of the proposed N6 Galway Bypass. Funded by Scott Crawley/ BirdWatch Ireland.

2016 The Status of Barn Owls Within the Study Area for the N69 Listowel Bypass, 2016. Funded by Scott Crawley and Jacobs Ltd. A full Barn Owl survey carried out in summer 2016 to determine the status of Barn Owls within 5km of the proposed N69 Listowel Bypass. Detailed survey work included a buildings survey, record collation and monitoring of known sites to determine breeding success.

2015 Curlew Breeding Survey (Co. Kerry and Co. Clare). Funded by NPWS. Summer 2015 contract Fieldworker for BirdWatch Ireland as part of a nationwide survey of all known Curlew nest sites, with follow-up visits to detect breeding success at occupied territories.

2014 Monitoring of Raptor Populations in Co. Kerry. Contract Fieldworker to BirdWatch Ireland for continued monitoring of known nest sites of Barn Owls, Long-eared Owls and Kestrels throughout Co. Kerry in the 2014 breeding season.

2014 ADAPT Forestry Survey, June – August 2014. Contract Fieldworker for BirdWatch Ireland and Cork University. Large-scale Transect Surveys for birds in a variety of habitats, including raised bog, blanket bog and Improved pasture.

SKILLS & QUALIFICATIONS

- Drone flying skills, on Mavic Pro Zoom drone, used for habitat and site assessment for Nightjar, Barn Owl and nesting seabird surveys, as well as for general site imaging. Additional training and licencing for larger drones with thermal imaging capabilities to be completed in late spring 2023, for use in mammal, raptor, and ground-nesting bird surveys.
- Holder of BTO Barn Owl 'C' Ringing Licence. To date, I have ringed 266 Barn Owls, adults and pulli.
- Full, clean driving licence.
- SOLAS Safe Pass – Health and Safety Awareness Training Program.
- Training in trapping and handling small mammals, from School of Biological, Earth and Environmental Sciences (BEES), UCC.
- A wide variety of computer skills including proficiency in Word, Excel, PowerPoint, Quark Express, PhotoShop, Affinity Photo, Affinity Publisher, and many other photo and design software packages. Experience in video editing in iMovie, and experience of blogging and website updates (www.irishraptors.blogspot.ie, www.duhallow.blogspot.ie and www.kerrybirding.ie).
- Author and illustrator of *The Complete Field Guide to Ireland's Birds* (Gill & Macmillan, 2010), *Finding Birds in Ireland – The Complete Guide* (Gill & Macmillan, 2007) and *The Pocket Guide to the Common Birds of Ireland* (Gill & Macmillan 2012).
- BA in Visual Communications and Design, National College of Art and Design, Dublin. Considerable design and illustration skills, including current design of many BirdWatch Ireland publications and journals, i.e., *Irish Birds* journal and *Bird Detectives* childrens' magazine, as well as numerous wildlife-related design and illustration projects, for example, The Irish Whale and Dolphin Group, Kerry County Council and local conservation groups throughout Ireland.



Monica Kane
MSc, BSc, PIEMA
Environmental Sector Manager
Senior Environmental & Ecological Consultant
Associate with MWP

2016 Practitioner Member of the Institute of Environmental Management and Assessment (PIEMA)
 2008 Associate Member of the Institute of Environmental Management and Assessment (AIEMA)
 2003 M.Sc. Ecosystem Conservation and Landscape Management, UCC, NUIG, Utrecht University, University of Helsinki
 2000 B.Sc. Zoology (Biological and Chemical Sciences) 1996 -2000, UCC

Particular Expertise Monica is **MWP Environmental Sector Manager** for the last **6 years** where her role involves managing and coordinating the day to day running the Environmental Team at Malachy Walsh & Partners. It also involves ensuring that the necessary resources are in place to support the team. As part of her role Monica liaises with clients ensuring their range of needs are met in a timely fashion.

She is an Environmental and Ecological Consultant with **over 15 years consultancy experience**. She has been responsible for project management and input for:

- **EIS's/EIA Reports**
- **EIA Screenings**
- **Environment Route Option Reports**
- **Planning Applications**
- **Screening for Appropriate Assessments**
- **Natura Impact Statements**
- **Ecological Impact Assessments**
- **Environmental Feasibility and Constraint Studies**
- **Environmental Risk Assessments**

As part of her involvement in the EU stoRE Project she is the principal author of **Guidelines for PHES and Natura 2000 sites**.

Member of expert group responsible for the review of the draft Hydropower and Natura 2000 Guidance prepared by the N2K Group (European Economic Interest Group) along with the Members of the Co-ordination Group for Biodiversity and Nature and stakeholders (2015).

She was an **expert witness** for the recent Strategic Infrastructure Development Oral Hearing for Cluddaun Wind Farm Project and on the Kenmare Water Supply Scheme for Kerry County Council.

Employment History

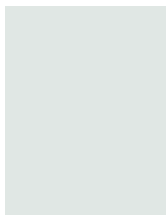
2013 – Present	Environmental Sector Manager, MWP, Tralee
2007 – 2012	Senior Ecologist, MWP, Tralee
2005 – 2007	Senior Ecologist, Aqua-Fact International Services Ltd, Galway
2004 – 2004	BMT Cordah Limited, Edinburgh
2000 – 2000	Assistant researcher on the EU BIODEPTH Project, U.C.C.

Health and Safety MWP In-House Safety Procedures; MWP In-House Application of the Health, Safety and Welfare at Work (Construction); Safe Pass.

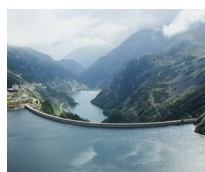
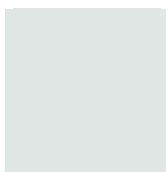
CPD *In-house and external courses:*
 Environmental Law, Safety & Health, Ecology (bryophytes, bats, Native Woodland Scheme), Peat Geotechnical Assessment, Software (MS Project, Resoft), Photography.
Conferences and seminars:
 Contaminated Land, EIS, Appropriate Assessment, Strategic Assessment, Ecology, Water & Renewable Energy.

Relevant Experience

Project	Athlone Regional Sports Centre
Value	€900k
Duration	April 2019 to July 2020
Description	Project involved the creation of 5km of recreational footways with a mixture of unbound trail and asphalt. Works also included the construction of a Basketball court, petanque court, Children's Play area and 5-a-side astro-turf pitch, hard and soft landscaping, land drainage remediation.



Project **Newport Town Park**
Value €1,123,477
Duration March 2017 to December 2020
Description Facilities included in the park are paths, grassland, wet woodland, hard & soft landscaping, band stand, fitness circuit, children's play area, multi-use games area, adventure play equipment, zip line, sensory garden, seating, picnic areas, water fountain and car park. MWP are responsible for Traffic Assessment and modelling, Civil, Structural, Environmental (Assessment, AA Screening and NIS to An Bord Pleanála), Mechanical and Electrical (public & task lighting and CCTV) design and Quantity Surveying Services and PSDP for the project.



Project **EU stoRE Project** (<http://www.store-project.eu/>)
Value €2M
Duration 3 years
Description The EU stoRE Project aims to facilitate the realization of the ambitious objectives for renewable energy by unlocking the potential for energy storage infrastructure. Energy storage, as part of an integrated approach including grid reinforcement and demand management helps accommodate higher percentages of intermittent renewable energy by balancing the supply and demand and improving the power quality.
Role As part of her involvement in the EU stoRE Project Monica has co-authored two reports examining the environmental impacts of existing PHES and CAES plants and developing recommendations for the sustainable development of future projects. She is the principal author of Guidelines for PHES and Natura 2000 sites: ([file:///C:/Documents%20and%20Settings/mreidy/My%20Documents/Downloads/development-of-bulk-energy-storage-natura-2000%20\(5\).pdf](file:///C:/Documents%20and%20Settings/mreidy/My%20Documents/Downloads/development-of-bulk-energy-storage-natura-2000%20(5).pdf))
She has also presented results at an stoRE event at the EU Sustainable Energy Week in Brussels.

Project **New Shannon Town Park**
Value €1.25M
Duration January 2019 – September 2019
Description New Shannon Town Park: Project involved the renovation of the existing park facility including new Childrens Play area, BMX facility, recreational walkways, artificial pond with footbridge, seating, hard and soft landscaping and extension of existing lighting and CCTV services.



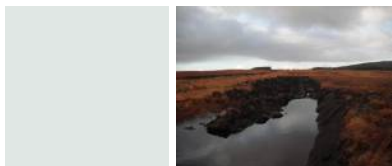
Project **Cluddaun Wind Farm – Strategic Infrastructure Development (SID)**
Value €240M
Duration 2011-2014
Description MWP were responsible for completing the SID Pre-Application Consultation Process with An Bord Pleanála, Engineering and Wind Farm Design, EIS, EIS/Project Consultation (Statutory Bodies, Government Agencies, Non-government Organisations, Public Representatives, Media and the Public), Planning Application and Oral Hearing for this proposed wind farm with an MEC of 150 MW. All documentation available on <http://www.cluddaunwindfarm.ie/>
The Firm's involvement included preparation and completion of civil engineering and road design, peat stability and constructability assessment, of a sediment and erosion plan, forestry assessment, population impact assessment, ecological impact assessment, ecological restoration and management plan, ornithological assessment, soils and geology impact assessment, shadow flicker assessment, traffic and transportation impact assessment, air and climate impact assessment, carbon balance assessment, noise impact assessment, material assets and interaction of environmental topics assessment. We also completed the Natura Impact Assessment, Site Safety and Road Safety Audit, Community Benefit and Recreation Plan, Ecological Restoration and

Management Plan.

MWP managed, coordinated and undertook a very extensive and inclusive project consultation process. Various types of consultation were conducted during the project including Preliminary EIS Consultation (scoping), Ongoing EIS Consultation (meetings and interactions with key stakeholders), SID Pre-Application Consultation, Public Consultation and Formal Consultation (submissions to ABP from third parties). MWP guided the client carefully through the various stages of the SID pre-application consultation process with ABP. At the end of the process the Bord recommended that the application be considered for SID.

MWP managed and coordinated the preparation for the Oral Hearing and managed and coordinated the Oral Hearing inputs from the Project Team.

Role **Monica** was the Project Manager Cluddaun from the early stages to the point of finalisation of the wind farm design overseeing the following aspects: SID Consultation Process with An Bord Pleanála, Wind Farm Project Design, EIS, and Planning Application. Monica also participated in aspects of the ecological surveys.



Project **Knockranny Wind Farm 23MW, Co. Galway**

Value €35M

Duration 2010 - 2011

Description MWP were responsible for completing the Engineering and Wind Farm Design, EIS and Planning Application for this wind farm. The Firm's involvement included civil engineering and road design, peat stability assessment, preparation of a sediment and erosion plan, preparation of an ecological restoration and management plan, ecological impact assessment, ornithological assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balanced assessment.

Role Monica was the Project Manager having overall responsibility for this project. She was responsible for managing and optimising the wind farm design process in the context of existing environmental constraints, the EIS and the Planning Application. She also undertook the ecological impact assessment (EclA). She was responsible for the appeal to An Bord Pleanála.



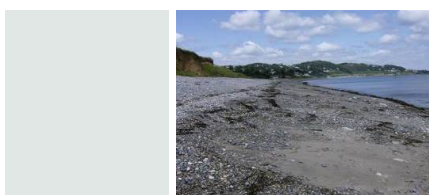
Project **Boggeragh Mountain Wind Park**

Value €180M

Duration 2 years

Description MWP project managed the EIS and planning application for this wind farm. MWP were responsible for the civil engineering and road design, preparation of a sediment and erosion plan, preparation of an ecological restoration and management plan, ecological impact assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balance assessment, human beings assessment and landscape and visual impact assessment. They were also responsible for the submission of the Further Information to Cork County Council and the response to appeal to An Bord Pleanala.

Role **Monica** coordinated and authored an initial environmental constraint study that indicated the optimum wind energy development areas. Subsequently, Monica Project Managed the Wind Farm Design and engineering inputs, EIS and was also responsible for completing the Ecological Impact Assessment and Appropriate Assessment. She managed and coordinated the submission of the Further Information to Cork County Council and the response to appeal to An Bord Pleanala. This included detailed consultation with CCC and NPWS.



Project **Dun Laoghaire Rathdown Coastal Defence Strategy Study**

Value n/a

Duration 2008 – 2010

Description MWP were commissioned by Dun Laoghaire Rathdown County Council (DLRCC) to undertake a coastal defence

strategy study of the Council's coastline. The study developed a strategy for the management of coastal defence related issues within Dun Laoghaire Rathdown. The strategy is designed to provide a framework for policy decision making and action related to both the provision and the management of sustainable coastal defence policies.

Role **Monica's** role included Project Ecologist and Environmental Consultant involving desk-top study of site and surrounds, consultation with relevant stakeholders, site walkover, input to development of plan options and environmental assessment of potential impacts of selected plan options. Tasks also included undertaking of an Appropriate Assessment, as per Article 6 of the Habitats Directive, of the study's plan of action.



Fenit Harbour, Tralee, Co. Kerry

Value €20m

Duration 2009-2011

Description MWP have project managed, designed and implemented all development projects at Fenit Harbour since 1979. In 2010, the Firm prepared a detailed masterplan for the development of the harbour, including a detailed EIS and Appropriate Assessment. The development included: relocation and extension of existing rock breakwater, provision of new 210 berth marina extension, reclamation, capital dredging, car parking and associated infrastructural work. The EIS was cognisant of the environmental designations in Tralee Bay

Role Monica was responsible for the Hydrological and ecological assessment as well as other environmental inputs such as hydrology.

Other Experience

Project Skellig Michael Star Wars VIII Filming Project

Value n/a

Duration 2015

Description This project was within a Natura 2000 site designated for internationally important seabird populations. MWP undertook a comprehensive breeding bird survey of the island to fully understand the breeding phenology of all of qualifying interests of the SPA over a 5 month period. This study was used to inform the project design and timing of any filming to avoid and minimise any interaction with the breeding seabird population, and the subsequent Screening for Appropriate Assessment undertaken. MWP Ecologists worked closely with NPWS during the project.

Role Principal Author of NIS; consultation with NPWS

Caherviveen to Glenbeigh Greenway Route Option Assessment Report

Description MWP completed the route option appraisal and report for the various route options along the proposed Greenway route.

Role Monica managed, coordinated and was the principal author of the Environmental Route Option Assessment Report.

N70 Sneem to Blackwater Road Bridge Route Option Assessment Report

Description MWP completed the route option appraisal and report for the various route options along the proposed Greenway route.

Role Monica managed, coordinated and co-authored the Environmental Route Option Assessment Report (Revision A).

Client

Kerry County Council

EKO Integrated Services

SSE Renewables

Dromoland Castle

Kerry County Council

EIA Screening

Rathmore Housing Scheme

Curraderrig Wind Farm

Leanamore Wind Farm Electrical Cable Connection

Dromoland Castle Water Supply

Brandon Pier Extension

Client

Kerry County Council

Kerry National Roads Design Office

Environment Route Option Assessments

Environment Route Selection Report for South Kerry Greenway

Environment Route Selection Report for N70 Sneem to Blackwater Bridge Road Project

Client

Cork County Council

Screening for Appropriate Assessment

Curraheen Bridge replacement

Mayo County Council	Cummer Bridge, Castlebar, Co. Mayo
Harry Harbison	Foiladaun Windfarm, Co. Cork
Kerry County Council	Ballyseedy Woods River Improvement Scheme, Co. Kerry
Killarney Town Council	Killarney Walking and Cycling Route Phase 1 – 2, Co. Kerry
Killarney Town Council	Killarney Walking and Cycling Route Phase 3, Co. Kerry
Kerry County Council	Ross Road Improvement Works, Co. Kerry
BAM	Ballinamore National School, Co. Leitrim
Private client	Dwelling House, The Spa, Co. Kerry
Private client	Dwelling House, Tuosist, Co. Kerry
Private client	Dwelling House, Lyrecrompane
Bord Gais Eireann	Garracummer Wind Farm Meteorological Mast, Co. Tipperary
Private client	Dwelling House Extension, Lyrecrompane, Co. Kerry

Client

Natura Impact Statements

Dairygold	Mallow Site Redevelopment
Coollegreen Wind Farm Ltd	Coollegreen Wind Farm
Galway County Council	Galway Bridges, Co. Galway
Private client	Listowel Housing Scheme, Co. Kerry
Airtricity	Clydaghroe Wind Farm, Co. Kerry
SSE Renewables	Leanamore Wind Farm, Co. Kerry
SSE Renewables	Athea South Wind Farm, Co. Limerick
SSE Renewables	Dromada Wind Farm, Co. Limerick
WED	Ballinvoher Wind Farm, Co. Limerick
Western Power	Knockranny Wind Farm, Co. Galway
SSE Renewables	Barroosky Meteorological Mast, Co. Mayo
LCCC	Thomond Bridge and Abbey Quay Walls, Limerick City
DAFM	Howth Harbour Fishing Pontoon
KCC	Fenit Harbour Dredging and Dumping at Sea

Client

Further Information on Natura Impact Statements

M+W Group	Project Emerald, Ringaskiddy, Co. Cork
SSE Renewables	Beannanspuck Wind Farm, Co. Kerry
Ecopower Developments Ltd	Tawnanasool Wind Farm
Western Power	Knockranny Wind Farm, Co. Galway

Client

Ecological Impact Assessments and Environmental Reports /Studies

SSE Renewables	Leanamore Wind Farm, Co. Kerry
SSE Renewables	Lough Mask Pumped Hydro Energy Storage Ecological Feasibility Study, Co. Mayo
SSE Renewables	Coumshingaun Lake Pumped Hydro Energy Storage Ecological Feasibility Study, Co. Waterford
Kerry County Council	Graveyard Biodiversity Pilot Scheme Study, Co. Kerry
Kerry County Council	Kenmare WTP Abstraction Assessment: Environmental and Freshwater Pearl Mussel Review (KCC)
Kerry County Council	River Lee Walkway EclA
Airtricity	Clydaghroe Wind Farm EclA, Co. Kerry
Airtricity	Lackagh Wind Farm, Co. Roscommon
Airtricity	Rathcahill Wind Farm, Co. Limerick
Airtricity	Dromada Wind Farm, Co. Limerick
Airtricity	Barroosky Meteorological Mast, Co. Mayo
Western Power	Knockranny Wind Farm EclA, Co. Galway
Airtricity	Curragh Mountain Wind Farm Ecological Management Plan, Co. Cork
Abbeyfeale WWTP	Environmental Assessment.
Western River Basin District	Quality control, assessments and training for Small Streams Risk Score assessments for the Water Framework Directive in 5 River Basin Districts (Western River Basin District)
Mayo County Council	Lough Mask Sewerage Scheme
Enerco Energy Ltd	Boggeragh Wind Farm EclA, Co. Cork
Offaly County Council	Clara Bypass, EclA, Co. Offaly
Private client	Mixed Use Development EclA, Tralee, Co. Kerry
Commissioner of Irish Lights	Fenit pipeline, Co. Kerry
Udarás na Gaeltachta	Clahane Office development, Co. Kerry
Fenit Harbour Board	Fenit Marina and Harbour Extension Preliminary Ecological Studies & EIS Screening, Co. Kerry
National Parks & Wildlife Service	GIS Mapping of Irish marine habitats as part of a 6 yearly EU conservation assessment monitoring report (Irish coast)
WYG Ireland	Ecological aquatic assessments WWTP outfalls at 7 villages, Co. Kerry

<p>Sligo and Donegal County Councils Fountain Cross Quarry J.A.Woods Ltd Various</p>	<p>Water quality analysis of Sligo and Donegal Main Drainage Schemes (County Councils) Water Quality Assessment, Ennis, Co. Clare Biological and impact assessment of a trade effluent discharge, Castleisland, Co. Kerry Intertidal impact assessments at the following locations: Kilonan, Inis Mór; Dungarvan, Sneem, Little Island, Riverstown (Co. Louth), Castlebellingham, (Co. Louth), and Carna, (Co. Galway).</p>
<p>English Nature WWF</p>	<p>Identification of marine habitats relevant to Special Areas of Conservation Vulnerability analysis of the North-East Atlantic Shelf Marine Ecoregion – Scoping</p>

Other Project Involvement	Client	Role
Cnoc Raithní Wind Farm EIS and Planning Application	Western Power Development Ltd	Environmental and planning reporting.
EIS for Retail, Mixed Use Development Irish Sea Interconnector	Joan Collins IMERA Power	EIS inputs EIS inputs
Lisheen Wind Farm Ecological Monitoring	Bord Gais Eireann	Project management and coordination, Client Liaison
Redevelopment of Beamish & Crawford Site South Main St, Cork city	BAM	Environmental inputs to EIS, in particular the EclA and Appropriate Assessment
Ballymartin Wind Farm Ornithological Monitoring	Bord Gais Eireann	Project management and coordination, Client Liaison
Glentanemacelligot Phase II Planning Compliance and CEMP	Bord Gais Eireann	Environmental reporting.
Doolin Pier EIS	Clare County Council	Environmental inputs to EIS, in particular the EclA and Appropriate Assessment
Cliften & Inishboffin Aerodromes	Dept. Community, Rural & Gaeltacht Affairs.	Environmental consultancy.
Dumping at Sea Application	Dundalk Port Company	Environmental consultancy.
Glencarbry Wind Farm development (various reports and applications)	Ecopower Developments Ltd	Project management and coordination, Client Liaison
Turraheen Wind Farm	Ecopower Developments Ltd	Project management and coordination, Client Liaison
Tawnanasool Wind Farm	Ecopower Developments Ltd	Project management and coordination, Client Liaison
Boggeragh Mountains Environmental Constraint Analysis for Wind Energy	Enerco Energy Ltd	Project management and coordination, Client Liaison. Report author.
Fingal Harbour Restoration	Fingal County Council	Environmental reporting.
Dingle Relief Road	Kerry County Council	Environmental reporting.
Brandon Pier Re-development	Kerry County Council	Environmental reporting.
Cappanalea Slipway Refurbishment	Kerry Educational Service	Environmental consultancy.
Delphi Bridge Refurbishment	Mayo County Council	Environmental consultancy.
Air Monitoring Facility	Met Eireann	Project management and coordination of environmental input
Boatyard Extension, Valentia Island	Murphy Marine Services	Environmental consultancy.
Listowel Bridge Rehabilitation	National Roads Authority	Ecological services.
Coomacheo Wind Farm	Airtricity	Environmental Auditing.
Kilavoy Wind Farm	Airtricity	Ecological services.
Athea South Wind Farm EIS & planning application	Airtricity	EIS consultancy services.
Castlegregory Golf Clubhouse, Co. Kerry	WRPD	Project management and coordination, Client Liaison
Coollegrean Wind Farm	Coollegrean Wind Farm Ltd	Ecological services.
Cloosh Wind Farm EIS	Coillte	EIS review and assessment.
Toberatooreen Wind Farm EIS & planning application	SSE Renewables	Environmental consultancy.
Fenit Harbour Works	Tralee and Fenit Harbour Board	Environmental consultancy.
Reenascreena Wind Farm Environmental Monitoring	Wind Prospect Ireland	Environmental Auditing.
Hartwell Upper Quarry Restoration, Kildare	ENCO Marine & Civil Engineering	EIA Scoping Report

Presentations

Topic

UCC Field Ecology Dip.

Delivered a presentation on EIA and Mitigation

Institutions of Engineers Ireland

Delivered a presentation on Wind Energy & Environmental Considerations

MWP Directors

Delivered a presentation on Environmental Topics

EU Sustainable Energy Week (Brussels)

Delivered a presentation on stoRE project results

Schools

Delivered a presentation on Environmental Topics

Bill Brazier B.Sc. (Hons) MIFM

Aquatic ecologist – Triturus Environmental Ltd.

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086-3758585

<https://www.linkedin.com/in/bill-brazier/>



Biography

Bill is an aquatic ecologist with 10 years' professional experience in Ireland. He specialises in freshwater fisheries ecology, biology and water quality. He has considerable experience in a wide range of ecological and environmental projects including EIAR, EclA and AA/NIS reporting, as well as biodiversity, invasive species and fisheries management. His diverse project list includes work on wind farm developments, flood relief schemes, road schemes, blueways/greenways and biodiversity projects.

He is currently completing his Ph.D. on the genetics, reproductive biology and invasive potential impact of common carp (*Cyprinus carpio*) in Irish waters. Additionally, Bill runs the highly respected Off the Scale magazine, Ireland's biggest and most read recreational angling publication and is the national coordinator for the novel Anglers National Line Recycling Scheme (ANLRS).

Qualifications

- B.Sc. (Hons) Applied Freshwater & Marine Biology, Galway-Mayo IT (2006-2010) (1.1)
- Ph.D. fish ecology & genetics (final year deferred), University College Cork (2010-present)

Professional affiliations

- Registered member Institute of Fisheries Management (MIFM)

Employment history

- 2010 - Marine Institute Archival Data Analyst bursar
- 2011 – 2018 – Freelance ecological consultant
- April 2019 – present – Aquatic ecologist, Triturus Environmental Ltd.

Key skills and assets

- EIAR, EclA, AA, NIS
- Fisheries assessments & management
- Ecological Clerk of Works
- Biological water quality (Q-sampling, SSRS)
- Habitat mapping
- Ecological design and habitat creation
- RHAT, RHS, RCS, LHS, PSYM, HSI
- Invasive species
- Otter surveys (including Human Disturbance Index)
- Protected species (white-clawed crayfish, amphibians, mammals, macrophytes)
- Biodiversity enhancement & community engagement
- ISA National Powerboat Handling Certificate (Level 2)
- Certificate in Personal Sea Survival Techniques
- GIS, bathymetric mapping
- Graphic/web design and digital/print publication (Adobe InDesign, Illustrator, Photoshop, Lightroom, Premiere Pro)

Selected project experience

Lake and river habitat

Páirc na Mara Marine Innovation Park, 2018-2020 (client: Ryan Hanley/ Údarás na Gaeltachta)

Preparation and management of Biodiversity & Water Quality Chapter for EIAR report. The project involved fresh water abstraction from the Lough Skannive catchment, Co. Galway and the development of a marine innovation park. Extensive baseline surveys were completed including catchment-wide electro-fishing, Arctic charr netting and spawning surveys, physiochemical water quality including Q-sampling, lake macro-invertebrates, detailed lake habitat surveys including macrophytes and classification of Annex I oligotrophic isoetid lake habitat (3110). The baseline surveys were conducted in 4 lake basins and in multiple feeder rivers. The baseline data compiled informed the preparation of a very detailed Environmental Impact Assessment report that involved a multidisciplinary approach. It included the application of water balance modelling according to UKTAG thresholds relative to the identified aquatic sensitivities. This ensured Water Framework Directive compliance in adherence to a detailed schedule of environmental commitments.

Loch an Mhuilinn water abstraction, 2017 (client: Ryan Hanley)

Detailed bathymetric study of Loch an Mhuilinn, Co. Galway to inform fresh water abstraction, in addition to aerial drone surveys. Surveys were undertaken using state of the art hardware and software, RTK-enabled Trimble GPS, Lowrance SONAR, Ebee Sensee Fixed Wing Drone and Reefmaster Software. The Annex I littoral habitat 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) was characterised with over 20 species of macrophyte plants records including *Nitella flexillis* and *Elatine hydropiper*. Lacustrine littoral salmonid spawning areas were identified and a comprehensive report was prepared.

Dublin City otter survey, 2018-2020 (client: Ryan Hanley)

Completed the largest survey of urban otter populations in Ireland to date and prepared a comprehensive report with a large focus on management and conservation. The lower reaches of over 20 watercourses within Dublin City were surveyed for otter signs, with a particular emphasis on quantifying and mapping otter habitat. RHAT methodology was used to classify and map otter habitat quality along 500m sections of each watercourse. Novel methodology (the Human Disturbance Index, HDI) was developed by Triturus and used to detect relative levels of human disturbance/encroachment on riparian areas and the relative effects on otter sign distribution. The study identified an important link between riparian seclusion and otter breeding areas, greatly informing future management in Dublin City and improving knowledge of urban otter populations.

Water quality

Kilbarry Bog landfill, 2018-2020 (client: Ecosystem Services)

Detailed physiochemical and biological water quality analysis (Q-sampling) in addition to macrophyte surveys were undertaken to inform the preparation of the aquatic elements of Annual Environmental reporting. This included physiochemical and biological water quality sampling of 10 no. riverine sites in addition to 3 no. habitat compensation pond habitats (including PSYM methodology to assess ecological quality).

Timahoe solar farm, Co. Offaly, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling) in addition to fisheries, otter and white-clawed crayfish surveys, was undertaken the catchment of the proposed Timahoe solar farm, Co. Offaly to inform EIAR preparation.

Castlewaller wind farm, Co. Limerick, 2019 (client: Fehily Timoney)

Baseline physiochemical and biological water quality sampling (Q-sampling, 12 sites) in addition to catchment-wide electro-fishing and white-clawed crayfish surveys, was undertaken along a proposed cable route in the catchment of the proposed Castlewaller wind farm, Co. Limerick to inform EIAR preparation.

Derrinlough wind farm, Co. Offaly, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling) in addition to a fisheries habitat assessment, was undertaken in the catchment of the proposed Derrinlough wind farm, Co. Offaly to inform EIAR preparation.

Croagh wind farm, Co. Leitrim, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling, 13 sites) in addition to catchment-wide electro-fishing was undertaken along a proposed cable route in the catchment of the proposed Castlewaller wind farm, Co. Leitrim to inform EIAR preparation.

Croaghaun wind farm, Co. Carlow, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling, 21 sites) in addition to catchment-wide electro-fishing was undertaken in the catchment of the proposed Croaghaun wind farm, Co. Carlow to inform EIAR preparation.

Knockharley landfill, 2019 (client: Fehily Timoney)

Baseline physiochemical and biological water quality sampling (Q-sampling & SSRS), RHAT scores and electro-fishing was undertaken in the catchment of Knockharley Landfill to inform EIAR preparation.

Small Streams Risk Score (SSRS) training, 20xx (client: Waterford County Council)

Undertook training of environmental staff from Waterford County Council on the use of the riverine invertebrates as a bio-indicator of pollution risk for small catchments using SSRS, the second most prominent biological indicator system used in Ireland after the Q-sampling system.

Fisheries

Croaghaun wind farm, Co. Carlow, 2019 (client: Fehily Timoney)

Catchment-wide electro-fishing (24 sites) and white-clawed crayfish surveys were undertaken in the catchment of Croaghaun wind farm, Co. Carlow to inform EIAR preparation.

Ballynacarrig River rehabilitation project, Co. Offaly, 2019 (client: LAWPRO)

Undertook a baseline aquatic assessment of the Ballynacarrig River (Silver River tributary) that included an assessment of fisheries (electro-fishing), biological and physiochemical water quality, and macrophytes. A detailed river management plan was prepared to help LAWPRO enhance the water quality and fisheries value as part of the Environmental River Enhancement Fund (EREP), as a designated 'Area For Action' within the wider catchment.

Owenacurra (Midleton) Flood Relief Scheme, 2018-2019 (client: Arup)

Conducted a catchment-wide electro-fishing survey in the Owenacurra and Dungourney River systems to establish a baseline of lamprey, salmonid and eel populations. Utilised a fixed-wing drone and RHAT surveys to establish the most pristine areas of channel pre-construction works and conducted detailed redd counting surveys and substrate assessments for sea trout and Atlantic salmon populations in the catchment.

River Barrow weirs fisheries survey, 2018 (client: McCarthy Keville O' Sullivan & Waterways Ireland)

Conducted an electro-fishing survey of three large weir sites on the River Barrow and prepared a detailed fisheries report on the conservation objective fish species found in the River Barrow and River Nore SAC. Used a 3m-RIB and bathymetric software to profile the sediment classes in order to establish the distribution of soft lamprey ammocoete habitat relative to proposed weir upgrade works and identified fisheries constraints based on the proposals.

Sea Lamprey *Petromyzon marinus* spawning survey, Lower Mulkear River, 2018 (client; IDA & Fehily Timoney)

Undertook a sea lamprey spawning survey of the Lower Mulkear River, Co. Limerick used a fixed-wing drone and infrared imagery to detect sea lamprey redds. Redd sites were validated on the ground using an RTK-enabled Trimble GPS and a correction factor was developed based on the accuracy of detection by the drone relative to data collected in the field. The project successfully established the most important zones of the river used by spawning lamprey with over 50 redds detected. This was the first time an aerial drone had been used to map sea lamprey redds in Ireland.

Macrophytes

Lough Skannive water abstraction, Carna (client: Ryan Hanley)

Conducted a detailed lake habitat survey of the macrophyte community of a 50-hectare lake using transects. This helped profile vegetation corresponding to the Annex I 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) and informed EIA preparation.

Killaloe Canal Greenway, Co. Clare, 2019 (client: MKO).

Conducted detailed macrophyte, invasive species and fisheries surveys to inform an Ecological Impact Assessment (EIA) for a proposed Blueway development in Killaloe.

Opposite-leaved pondweed (*Groenlandia densa*) management plan, 2018 (client: Fehily Timoney)

Undertook an opposite-leaved pondweed survey of the Loughmore Canal, Co. Limerick through a full macrophyte plant audit of the canal. A detailed management plan was prepared in light of proposed flood alleviation works

Floating river vegetation survey of the Lower River Lee, Co. Cork, 2015 (client: Ryan Hanley & OPW)

Conducted a detailed study of the distribution of floating river vegetation in the Lower River Lee between Inniscarra Dam and Cork City Centre. Transect and underwater dive surveys were undertaken using random replicated blocks. The distribution and cover of *Ranunculus*, *Potamogeton*, *Callitriche* and moss species was estimated and distribution maps compiled. It represented one of the most detailed studies in the south of Ireland on the Annex I habitat (3260) Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation.

John Cronin BA MRUP MUBC Dip. Geol MIAI

Archaeologist and Conservation Consultant

JOHN CRONIN is an archaeologist, town planner and historic building consultant and is the principal consultant and a managing director of John Cronin & Associates, a heritage consultancy established in 2003. His professional qualifications are as follows:

- Master of Urban & Building Conservation, School of Architecture, University College Dublin, 1999
- Diploma in Geology (Evening Course), University College Cork, 1996
- Master of Regional & Urban Planning, University College Dublin, 1993
- Bachelor of Arts (Honours) - Archaeology & Geography, University College Cork, 1991

Career Profile

<i>2000 to date</i>	Managing Director and Principal Consultant, John Cronin & Associates
<i>1999 – 2000</i>	Executive Planner (Conservation), Donegal County Council
<i>1998 – 1999</i>	Conservation Officer, Cork County Council
<i>1995 – 1998</i>	Archaeology and Historic Building Officer, Cork County Council
<i>1994 – 1995</i>	Principal Research Officer, Urban Archaeological Survey, UCC, Cork
<i>1993 – 1994</i>	Surveyor, Landesamt für Archäologie, Dresden, Germany

Relevant Experience

John is an archaeologist, town planner and building conservation consultant with over twenty years post-graduate experience, garnered in the public and private sectors. He has prepared numerous cultural heritage assessments for environmental impact assessments throughout Ireland and has supervised architectural surveys in Counties Cork, Donegal and Dublin. He advises private developers in relation to building conservation issues and has acted as consultant to The Heritage Council, the National Inventory of Architectural Heritage and various planning authorities including Fingal County Council, Dublin City Council and South Dublin County Council. His particular specialism is the planning, conservation and rehabilitation of historic precincts. He has supervised conservation works to numerous protected structures, including:

- The Oyster Tavern, Cork City
- Glengarriff Castle, County Cork
- Former Saint Paul's Church (Church of Ireland), Cork City
- Remedial works to Old Bridge at Carrick-on-Suir, County Tipperary
- Old Town Wall, Cashel, County Tipperary
- Anne's Gift, Fethard, County Tipperary

John has also provided conservation and heritage advice in relation to the following urban realm schemes:

- **Carrick-on-Suir Public Realm Improvement Scheme, County Tipperary** – provision of archaeological and built heritage appraisal and assessment of potential impacts, input into the design process
- **Public Realm Improvement Scheme, Bray Transport Interchange, County Wicklow** - - provision of archaeological and built heritage appraisals and assessment of emerging design proposals
- **Chapelizod Village Improvement Scheme, Dublin City** – Detailed examination of existing public realm and preparation of built heritage inventory of the village centre. Involvement led to appointment by Dublin City Council to prepare a guidance document on the architectural conservation area (ACA) for the village

- **Dublin Street Regeneration Scheme, Monaghan Town (ongoing)**– working with RPS, John and his colleagues are undertaking an archaeological and built heritage appraisal of emerging designs for this regeneration project in Monaghan Town



Anthony Ryan

Project Planner



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Anthony graduated with First Class Honours from both the Master’s in Planning and Sustainable Development (MPlan) at University College Cork and the B.A. in Heritage Studies from Galway-Mayo Institute of Technology, Galway.

Before joining FT, Anthony worked as a Graduate Town and Environmental Planning Consultant for The Planning Partnership Planning Consultants, Cork and the Department of Strategic Planning & Economic Development in Cork City Council. Since joining FT in 2021, Anthony has worked on a number of wind and solar renewable energy projects. Anthony prepares planning statements and environmental assessments, and project manages these projects into the planning system.

Key Skills

- Research and report writing
- Microsoft Word, PowerPoint and ArcGIS
- Strategic Planning
- Project Management
- Full/Clean Irish driving licence and Safe Pass holder

Previous Experience

- **The Planning Partnership, Cork, 2020-2021**
Anthony was a Graduate Planning Consultant. His role involved working within the Town, Environmental and Retail Planning team on projects which involved a varying workload while working within the office or remotely delivering projects within a deadline and to a professional standard. His responsibilities required working on projects of varying scale and nature, and included stakeholder interaction, desk-based research, and site visits to prepare assessments and reports for residential, commercial, retail and mixed-use development, as well as renewable energy projects and Development Plan submissions.
Anthony used Microsoft office suite such as Word, Excel and PowerPoint and research tools such as ArcGIS to draft and prepare multi-source reports such as Planning Reports, Replies to Requests for Further Information (RFI) and Planning Status Reports. These required attention to detail and high standards of presentation and allowed Anthony to develop his communication, research and report writing skills and expand his knowledge of the Irish Planning System and Irish and Policies, as well as European planning and environmental legislation such as Birds and Habitat Directives.
- **Woodies D.I.Y & Garden Centre, Galway and Cork, 2008-2020**
Anthony was a Store Horticulturalist. He was responsible for managing all aspects of Garden Centre operations and maintaining a customer-focused shopping experience through practical gardening and plant advice, training, communication, and teamwork. He grew sales through increased customer footfall and loyalty by providing outstanding customer service, professional gardening advice, excellent stock quality and providing positive shopping experience.
Anthony generated year-on-year sales increases and annual savings by implementing stock management procedures and more efficient processes in reducing wasted resources to increase sales margins.

Key Information

Qualifications

- Master’s in Planning and Sustainable Development (MPlan), University College Cork, 2020
- B.A in Heritage Studies, Galway-Mayo Institute of Technology, 2017
- Diploma in Commercial Horticulture, Warrenstown Horticultural College, 1999

Employment History

2021 – Present

Fehily Timoney & Company, Cork
Graduate Planner – Energy and Planning Team

2020 – 2021

The Planning Partnership, Cork
Graduate Planning Consultant

2008 – 2020

Woodies D.I.Y., Cork
Horticulturalist

2019 – 2019

Cork City Council
Planning Clerical Officer

2006 – 2007

Queensland Federal Government,
Agricultural and Crop Inspector

2003 – 2006

Emerald Group Christmas Tree
Growers, Co. Wicklow,
Field Supervisor

1998 – 2003

New Place Nurseries, UK
Horticulturalist



Anthony Ryan

Project Planner



CONSULTANTS IN ENGINEERING,
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- **Cork City Council, Cork, 2019**

Anthony was a Planning Clerical Officer working within the Department of Strategic Planning & Economic Development to finalise the city-wide Vacancy Survey for Cork City. He researched and updated all GIS data required information needed for accurate and detailed data regarding property vacancy and dereliction within Cork City. The survey's contributed to creating an understanding of levels of building vacancy and dereliction, allowing Cork City Council to develop and implement measures to reduce its prevalence and resolve the circumstances which lead to it emerging. Anthony also carried out surveys on visitor habits, patterns and demographics in Bishop Lucey Park and Kent Train Station. The survey's assisted in creating an understanding of the usage patterns and general requirements of both locations as part of proposed re-development and upgrade work to their functionality and the public realm.

- **Queensland Federal Government, Brisbane, Australia, 2006-2007**

Agriculture and Crop Inspector.

- **Emerald Group Christmas Tree Growers, Co. Wicklow, 2003-2006**

Field Supervisor.

- **New Place Nurseries, UK, 1998-2003**

Horticulturalist.

Previous FT Experience Essentials for this Project

Wind Energy Projects

Anthony contributed to various wind farm projects planning applications and assisted in the preparation and drafting of non-technical reports, finalising notices and forms, reviewing of planning drawings and collating of applications for submission. Anthony provided project management of a response to Further Information.

- **On-Shore Wind Farms 2021-2022**

Anthony provided Planning Support for several Wind Farm developments nationwide which included the drafting of non-technical reports, finalising notices and forms, reviewing of planning drawings and collating of applications for submission. Anthony provided project management of a response to Further Information.

- **Ballinagree Wind Farm 2020-2022**

Provision of Planning Support including the drafting of statutory SID notices and forms. Review of planning drawings and collating of application for submission of this 22-turbine wind farm in Co. Cork.

- **Coom Green Energy Park 2021**

Collation and project management of a response to Further Information on this 20-turbine wind farm in North Cork.

- **Extension of Use Application**

Anthony provided planning support for an 'Extension of Use' Application for a Temporary Met Mast on the following project:

- Coom Green (P21-141)

Anthony participated in drafting and submitting the following:

- **Environmental Impact Assessment Reports (EIAR)**

Anthony participated in drafting non-technical chapters for the EIAR into the effects a proposed project may have on the environment for the following projects:

- Coumnaappul Wind Farm, Co. Waterford (P2360): Chapter 1, 'Introduction', Chapter 2 'Development Description' and Chapter 4 'Policy', Chapter 17 'Interactions of the Foregoing'.
- Garryhinch Wind Farm, Co. Offaly (P21-180): Chapter 1, 'Introduction' and Chapter 4 'Policy'.
- Annagh Wind Farm, Co. Cork (P2359): Chapter 1, 'Introduction', Chapter 2 'Site Selection and Alternatives' and Chapter 4 'Policy'.
- Ballinagree Wind Farm, Co. Cork (P2114): Chapter 1, 'Introduction', Chapter 17 'Interactions of the Foregoing'.
- Fahy Beg, Co. Clare (P20-003): Chapter 1, 'Introduction', Chapter 2 'Site Selection and Alternatives' and Chapter 4 'Policy'.
- Milltownpass (20-030): Chapter 1, 'Introduction', Chapter 2 'Development Description' and Chapter 4 'Policy'.
- Shancloon, Co. Galway (P20-306): Chapter 1, 'Introduction', Chapter 2 'Development Description' and Chapter 4 'Policy'.



Anthony Ryan

Project Planner



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

• **Substitute Consent Report / Applications**

Anthony participated in the preparation of Substitute Consent Planning Reports and documents to support the application to An Bord Pleanála under Section 177C of the Planning and Development Act 2000 (as amended):

- Littleton Wind Farm (P20-211): Planning Report for leave to apply for Substitute Consent for historic peat extraction activities (and all associated bog development works) that have been carried out on lands within Littleton Bog Group, Co. Tipperary.
- Garryhinch Wind Farm, Co. Offaly (P21-180): Report to support application for leave to apply for Substitute Consent under Section 177C of the Planning and Development Act, 2000 (as amended) to regularise the planning status of historic peat extraction (and ancillary bog development works) in the Garrymore Bog, County Laois and neighbouring Garryhinch Bog, County Offaly.
- Littleton Peat Extraction (P23-035): Report to support application for leave to apply for Substitute Consent under Section 177C of the Planning and Development Act, 2000 (as amended) to regularise the planning status of historic peat extraction (and ancillary bog development works) that have been carried out on Longford Pass, Littleton, Lanespark and Derryvella Bogs in Co. Tipperary.

Solar Energy Projects

Anthony contributed to various solar farm planning applications nationwide, including the Project Management of a portfolio of 4 solar farms in Co. Tipperary, which required the preparation of the Planning and Environmental report and finalising of statutory forms, documents and drawings. This portfolio successfully received a grant of planning permission in 2021.

Anthony assisted with and project managed the preparation and submission of planning applications for solar PV renewable energy developments. Each solar application was accompanied by reports such as a detailed environmental and planning report which assesses the impact of the solar development on a multitude of factors including Archaeology & Cultural Heritage, Ecology & Biodiversity, Glint and Glare, Landscape and Visual Impact, Noise, Hydrology and Traffic/Road assessments. Each solar application was accompanied by drawings and further reports providing specific development details as part of the planning application where Anthony contributed to reviewing drawings and reports such as Ecological Impact Assessment (EclA), Appropriate Assessment Screening Reports (AA), Natura Impact Statements (NIS), Construction Environmental Management Plans (CEMP), Flood Risk Assessments (FRA). In addition, all application material has to be reviewed and checked to ensure a valid application can be submitted and ensure a successful outcome.

Anthony participated in drafting and submitting of the following:

• **Solar Stage I Feasibility Study**

Anthony carried out to a Stage I Feasibility Study to analysis the feasibility of developing a solar PV farm for the following projects:

- Rahanisky Solar Farm, Cork County & City (P22-036)
- South Galway Solar Farm, Co. Galway (P21-243)
- Drummin (Castlebank), Co. Clare (P21-103)
- Corkbeg, Co. Cork (P21-230)
- Ballynookery, Co. Cork (P21-249)
- Rathleash, Co. Laois (P21-302)
- Clondardis, Co. Westmeath (P22-124)

• **Solar Stage II Feasibility Study**

Anthony carried out to a Stage II Feasibility Study to analysis the feasibility of developing a solar PV farm for the following projects:

- Kilmorna, Co. Kerry (P21-282)
- South Galway Solar Farm, Co. Galway (P21-243)
- Drummin, Co. Clare (Castlebank) (P21-187)
- South Galway, Co. Galway (P21-243)
- Kilmorna, Co. Kerry (P21-182)
- Shantallow, Co. Galway (P23-011)
- Milltown Extension, Co. Meath (P22-261)



Anthony Ryan

Project Planner



CONSULTANTS IN ENGINEERING,
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& PLANNING

- **Solar Farm Planning Applications**

Anthony participated in and project managed the preparation and lodgement of planning applications for the following Solar Farm developments:

- Milltown, Co. Meath (P20-030)
- Clashwilliam, Co. Kilkenny (P21-191)
- Rathdrinagh, Co. Meath (P21-126)
- Cahir Solar Farm 1, Co. Tipperary (P21-061)
- Carrick SLR 2, Co. Tipperary (P21-061)
- Deerpark 3, Co. Tipperary (P21-061)
- Ballyvalode, Co. Limerick (P20-142)
- Kilcormac Solar Farm, Co. Offaly (20-316)
- Rahanisky, Cork County & City (P22-266)

- **A Section 177AE application**

Anthony completed a Planning and Environmental Report and associated documents on behalf of Cork City Council in support of a Section 177AE application to An Bord Pleanála for approval of repair and rehabilitation works at Glyntown Bridge.

- Cork City Council - Glyntown Bridge (P21-200)
- Cork County Council - Ardcahan Bridge (P1959)

- **Strategic Infrastructure Development (SID)**

Prepared documents for Strategic Infrastructure Development (SID) applications to An Bord Pleanála for electrical infrastructure projects associated with solar developments for the following projects:

- Kilcormac, Co. Kerry (P20-316)



David Daly

Project Ecologist



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

David Daly is a Project Ecologist working as part of the Energy and Planning Team at Fehily Timoney and Company. He holds a Bachelor of Science (BSc) in Ecology from University College Cork, obtained in 2017, and a Master of Science (MSc) in Species Identification and Survey Skills from University of Reading, obtained in 2019. His degrees focused on conservation of habitats, flora and fauna, with strong emphases on European and international legislation, and practical field skills.

A large portion of his work is focused on the survey and assessment of proposed wind and solar energy development sites, and he has carried out comprehensive ecological work on a number of sites, from flora and fauna surveys and habitat mapping to AA Screening Reports, NIS Reports, and Biodiversity Chapters for EIAR.

Since joining FT, David has carried out numerous habitat surveys, including surveys of woodland, grassland, and peatland habitats, and also qualitative assessments and mapping of the same. He has also carried out numerous mammal surveys including bat, badger, otter, and general mammal surveys. Bird surveys completed by David since joining FT include winter vantage point surveys, Irish Wetland Bird Surveys, hen harrier roost watches and breeding transects.

Key Skills

- Bat identification using bat detectors, behavioural characteristics & software-based analysis of recorded calls, Bat roost survey
- Bird identification
- Habitat assessment, Plant identification
- Invasive species survey
- Ecological clerk of works.
- Mammal identification (field signs, live sightings & trail camera survey)
- Report writing and impact assessment (EIAR, AA Screening & Stage 2 Natura Impact Statement)
- Derogation Licence applications

Previous Experience Essentials for this Project

Project Surveying Experience with FT

- **Appropriate Assessment**
 - AA Screening for a proposed recycling facility in Dublin City
 - AA Screening for the remediation of historic landfills in Co. Kilkenny
 - AA Screening for a proposed Solar Farm in Co. Offaly
 - NIS reports for the remediation of historic landfills in Co. Kerry
 - NIS report for the remediation of a historic landfill in Co. Tipperary
- **EIAR – Biodiversity Chapter**
 - Biodiversity chapter for a proposed Wind Farm, Co. Cork (including appendices; Enhancement plan, invasive species management plan)
 - Biodiversity chapter for a proposed Wind Farm, Co. Waterford (including appendices; Enhancement plan, invasive species management plan)
- **Habitat Surveys**
 - Survey of peatlands for a proposed windfarm site in Co. Tipperary. Associated relevé surveys of potential Annex I habitats

Key Information

Qualifications

MSc. Species Identification and Survey Skills, University of Reading, 2019

BSc. Ecology, University College Cork, 2017

Employment History

2021 – 2023

Fehily Timoney and Company
Project Ecologist

2019 – 2021

Inís Environmental Consultants
Ecologist

2019

Ecus Ltd.
Seasonal Ecologist



David Daly

Project Ecologist



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Survey of peatlands for a proposed windfarm in Co. Galway
Survey of peatlands and agricultural lands of main windfarm site, grid connection and turbine delivery route for a proposed windfarm project in Co. Waterford
Survey of agricultural lands of proposed solar farm in Co. Offaly
Survey of multiple bridge maintenance works in Co. Cork
Habitat survey for a proposed recycling plant in Co. Dublin
Post-construction habitat monitoring of enhancement lands for hen harrier at a windfarm site in Co. Limerick

- **Bird Surveys**

IWeBS and breeding bird transects for a road improvement scheme in Co. Clare
Vantage point surveys for wintering birds at a proposed windfarm site in Co. Longford
Hinterland surveys for a proposed windfarm site in Co. Offaly
Targeted whooper swan surveys at a proposed windfarm in Co. Cork
Hen Harrier roost survey for a proposed windfarm in Co. Offaly
Breeding bird transects for a proposed recycling plant in Co. Dublin

- **Mammal (non-volant) Surveys**

Otter survey for landfill remediation works in Co. Tipperary.
Otter survey for a proposed windfarm site in Co. Cork.
Badger, pine martin and red squirrel surveys for a consented windfarm site in Co. Laois
General mammal survey for proposed windfarm sites in Co. Westmeath, Co. Tipperary, Co. Galway, Co. Offaly, and Co. Waterford

- **Bat Surveys**

Bat activity transect surveys for tree felling works in Dublin City
Bat activity transects, preliminary roost assessment, hibernation surveys, static detector deployment and subsequent data analysis for a windfarm site in Co. Westmeath
Bat detector deployment and subsequent data analysis for a proposed windfarm site in Co. Cork
Bat activity transects for a landfill remediation project in Co. Kerry
Preliminary roost assessment for a proposed windfarm site in Co. Laois

- **Ecological Clerk of Works**

Breeding birds and roosting bat surveys of trees immediately prior to and during felling for a windfarm site in Co. Offaly.
Supervision of badger sett destruction, after sett exclusion surveys for a windfarm site in Co. Offaly.

- **Additional Surveys**

Marsh fritillary surveys for marsh fritillary larvae of a proposed windfarm site in Co. Tipperary.
Marsh fritillary surveys for marsh fritillary larvae of a proposed windfarm site in Co. Galway.

Additional Previous Experience

- **Ecologist, Inis Environmental Consultants, Ennis, Co. Clare, 2019– 2021**

David was an Ecologist responsible for Habitat, invasive species and protected species surveys (birds, bats, mammals). He was also Ecological Clerk of Works (ECoW) on telecommunication projects and building refurbishment works for breeding birds, roosting bats, Kerry slug, and bog habitats. David also worked as an EcoW monitoring the implementation of water quality mitigation measures for the construction of a bridge and building refurbishment works within SACs.

David was responsible for report writing (Appropriate Assessment Screenings, Natura Impact Statements, Ecological Impact Assessments, Protected Species Reports) and project management.

- **Seasonal Ecologist, Ecus Environmental Consultants, Basingstoke, UK, April – September 2019**

David was a Seasonal Ecologist. He was responsible for Habitat and protected species surveys (bats, badgers, dormice, great-crested newts and reptiles).

David was also responsible for report writing (Preliminary Ecological Appraisals, Desk Studies, Risk Assessments) and ArcGIS Mapping.



John Cullen

Senior Project Acoustic Engineer /
Environmental Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

John is a Senior Project Acoustic Engineer / Environmental Engineer with Fehily Timoney & Company. He holds a BAgSc in Agri-Environmental Science from University College Dublin, a P.Grad.Dip in Environmental Engineering from Trinity College Dublin and a Diploma in Acoustics and Noise Control from the Institute of Acoustics. He is a member of the Institute of Acoustics and the Institute of Engineers Ireland.

John has gained experience in the delivery of Environmental Impact Assessment Reports for a wide range of developments, including proposed Waste facilities, Wind Farms and Solar Farms, Anaerobic Digestion Plants and proposed residential and industrial developments.

John has extensive experience in carrying out environmental noise surveys and assessments on behalf of a wide range of clients. He has completed computational noise models and noise impact assessments for a range of developments including residential, industrial and renewables. He has carried occupational noise and hand-arm/whole body vibration risk assessments in accordance with the requirements of the Irish & UK workplace noise & vibration regulations. He has also acted as Lead Acoustic Consultant carrying out building acoustics assessments for a range of commercial and residential developments in Ireland, the UK and Europe.

Other environmental consultancy projects include:

Bord Bia 'Origin Green' sustainability audits. Duties include completing site and desk-based verification audits for a wide range of 'Origin Green' members, from small food producers to multinational food retail and brewing companies.

Project Manager for the delivery of the environmental monitoring schedule for a leading quarry operator at numerous sites throughout Ireland, including noise, dust, air emissions and water quality. Duties included coordinating regular sitework & field monitoring, managing junior staff, interpreting monitoring results & data, reporting, liaising with the client and Local Authorities.

Noise and air emissions monitoring for the validation of newly installed gas engines used for power generation at multiple sites throughout the UK. Tasks included coordinating site visits and monitoring, on-site air and noise monitoring and technical report writing.

Indoor Air Quality Assessment at a refurbished brewery in Kisumu, Kenya for a multinational brewing organisation to assess performance with regards to the requirements of the LEED building performance standard. Duties included coordinating & completing on-site air monitoring and technical report writing.

Previous Experience Essentials For This Project

- Fehily Timoney and Company, Ongoing.**

John is a Senior Project Acoustic Engineer / Environmental Engineer with experience working as part of the Waste and Environmental Team delivering Environmental Impact Assessment Reports (EIARs), environmental management plans and licence applications/ compliance.

John has experience in the delivery of Environmental Impact Assessment Reports for a wide range of developments, completing computational noise models and noise impact assessments for proposed developments, participating in stakeholder

Key Information

Qualifications

Diploma in Acoustics and Noise Control, Institute of Acoustics via Trinity College Dublin
2019 – 2020

Post Graduate Diploma in Environmental Engineering (NFQ Level 9) (P.Grad.Dip), Trinity College Dublin
2014 – 2015

Agri-Environmental Science (NFQ Level 8) (BAgSc) University College Dublin
2009 – 2013

Professional Memberships

Institute of Engineers Ireland (MIEI)

Institute of Acoustics (AMIOA)

Institute of Environmental Sciences (MIEnvSc)

Institute of Air Quality Management (MIAQM)

Employment History

2022- Present

Fehily Timoney & Company
Senior Project Acoustic Engineer / Environmental Engineer

2021- 2022

Self-employed Environmental & Acoustic Consultant

2016- 2021

Environmental Efficiency Consultants
Environmental & Acoustic Consultant

2015 - 2016

Philip Farrelly & Co.
Agri-Environmental Consultant

2014 - 2015

Verde Environmental Group
Environmental Operative



John Cullen

Senior Project Acoustic Engineer /
Environmental Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
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engagement and public consultation, including liaising with landowners to agree environmental monitoring programmes for proposed renewable energy projects, managing a team of subcontractors and coordinating the completion of ecological field surveys and assessments with landowners relating to DAFM afforestation license applications and participating in public consultation events with stakeholders.

- **Self Employed – Environmental & Acoustic Consultant, 2022.**

Carrying out subcontract acoustic & environmental consultancy services including environmental noise monitoring & assessments, noise impact assessments, occupational noise & vibration assessments, sound insulation testing and building acoustics assessments. Environmental consultancy services including air quality assessments, bund integrity assessments, and verification audits for the Bord Bia 'Origin Green' sustainability programme. Agri-Environmental advisory services including BPS & Entitlements applications, REAP environmental scheme farm assessments, soil sampling and Nutrient Management Planning

- **Environmental Efficiency Consultants, Bray, 2021.**

John was an Environmental & Acoustic Consultant providing environmental consultancy services to clients across a wide range of sectors, including industrial, pharmaceutical, construction/quarrying and agri-food/drink. He was working as part of a multi-disciplinary team delivering environmental reports, management plans, impact assessments, licence/permit applications and environmental compliance consultancy. Working across various areas of environmental consultancy, specialising in noise & acoustics. His role involved developing project proposals & quotations, project management, research, carrying out and coordinating environmental monitoring & field surveys (Air quality, biodiversity, bunds, noise, vibration & water), liaising with sub-contractors and regulatory bodies, interpreting monitoring results & data, and technical report writing. Other duties included completing verification audits for the Bord Bia 'Origin Green' sustainability programme, carrying out occupational air, noise & vibration risk assessments, and indoor air quality assessments.

- **Philip Farrelly & Co., Balbriggan, 2016.**

John was an Agri-Environmental Consultant providing technical agri-environmental advisory services to clients. He was also responsible for soil sampling & analysis, nitrates & nutrient management planning, ecological field surveys, and agri-environmental scheme consultancy.

- **Verde Environmental Group, Kilcoole, 2015.**

John was an Environmental Operative responsible for contaminated site investigation, drilling works, environmental monitoring (soil, water & air), site remediation and groundworks, and installing/maintaining on-site remediation systems.

Karen Banks

Coolnacaheragh, Lissacresig, Macroom, Co.Cork
Tel: 083 4218641; email: greenleafecology@outlook.com

Profile

I am an ecologist with 16 years' professional experience. I hold a BSc in Environment and Development from Durham University and am a full member of the Chartered Institute of Ecology and Environmental Management. I have extensive experience in ecological field survey, am a skilled botanical surveyor and a licensed bat surveyor. In my career as an ecologist, I have undertaken Appropriate Assessments (AA) covering the transport, energy and land use sectors, with work including assessment of Plans at the national, regional and local level; and numerous AAs of projects. I have undertaken Ecological Impact Assessments (EclA) including those for flood alleviation schemes, wind farms and transport infrastructure. I have conducted bat survey and assessment for numerous projects, including bridge repair and replacement works, domestic dwelling repair and demolition works, wind farm developments and large-scale infrastructure projects such as flood relief schemes, road developments and pipeline schemes. I have also represented Cork County Council as an expert witness for bats at an Oral Hearing.

Areas of expertise

- Appropriate Assessment
 - Ecological Impact Assessment (EclA)
 - Preliminary Ecological Assessment
 - Habitat survey and mapping
 - Detailed botanical survey
 - Bat survey (licence holder)
 - Mammal survey
 - Expert witness (bats)
-

Selection of Project Experience

Killaloe Bypass, Shannon Bridge Crossing & R494 Improvement (*Clare County Council*)- Pre-construction mammal and bat roost survey and derogation (2018- ongoing).

Passage Railway Greenway (*RPS & Cork City Council*)- Bat survey and assessment of the greenway in Cork (2020-2021).

Barnadivane Wind Farm (*Enerco Energy*)- Four season bat roost and activity survey for the proposed wind farm in Co. Cork (2021-2022).

Annagh Wind Farm (*Fehily Timoney & Statkraft*)- Four season bat roost and activity survey for the proposed wind farm in Co. Cork (2020-2022).

NIS and EclA Clashwilliam Solar Farm (*Harmony Solar*)- Stage 2 Appropriate Assessment and Ecological Impact Assessment of the proposed solar farm in Co. Kilkenny (2020).

NIS and EclA Milltown Solar Farm (*Harmony Solar*)- Stage 2 Appropriate Assessment and Ecological Impact Assessment of the proposed large scale solar farm in Co. Meath (2020-2021).

NIS and EclA Oola Solar Farm (*Harmony Solar*)- Stage 2 Appropriate Assessment and Ecological Impact Assessment of the proposed large scale solar farm in Co. Limerick (2020-2022).

NIS and EclA Ballydonohoe Solar Farm (*Terra Solar II Ltd*)- Stage 2 Appropriate Assessment and Ecological Impact Assessment of the proposed solar farm in Co. Kerry (2019- ongoing).

NIS Felling of Forestry at Tulla, Co. Clare (*Coillte*)- Stage 2 Appropriate Assessment to identify any adverse impacts that the project might have on the integrity of Old Domestic Building, Rylane SAC, designated for the presence of lesser horseshoe bat (2019).

Environmental Liability Regulations Assessment (*EPA*)- review of the impact of tree felling on a population of lesser horseshoe bat species in the vicinity and determination of environmental damage under the Environmental Liability Regulations (2019).

NIS and EclA N70 Sneem to Blackwater Bridge Upgrade (*Kerry County Council*) - Stage 2 Appropriate Assessment and Ecological Impact Assessment of the N70 Sneem to Blackwater Bridge Road upgrade and re-alignment scheme, bat specialist services and EcOW services (2016- ongoing).

Bat Survey and Assessment M28 Cork to Ringaskiddy Motorway Scheme (*Cork County Council*) –bat survey and assessment for the proposed motorway scheme (2017).

Expert Witness (*Cork County Council*) - expert witness for bats at Oral Hearing for M28 Cork to Ringaskiddy Motorway Scheme (2017).

Baile Bhuirne Flood Relief Scheme (*Office of Public Works*) – Appropriate Assessment and Ecological Impact Assessment of the proposed flood relief scheme in Co. Cork (2017-ongoing).

NIS and EclA Tullamore Solar Farm (*Terra Solar II Ltd*)- Stage 2 Appropriate Assessment and Ecological Impact Assessment of the proposed 50MW solar farm in Co. Kerry (2018).

Bat Survey and Assessment Greater Dublin Drainage Scheme (*Irish Water*) - bat survey and assessment for the proposed drainage scheme and WwTP upgrade (2017- 2019).

Education and Professional Membership

- BSc (Hons) Environmental and Development, Durham University (2002)
- Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)
- Member of the Botanical Society of the British Isles and Ireland (BSBI)
- Member of Bat Conservation Ireland (BCI)



Killian Whyte

Project Planner



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Killian Whyte is a Project Planner with Fehily Timoney and holds a MSc in Planning and Development from Queens University Belfast. He has 4 years' experience working in both the public and private sectors in the UK and Ireland

Key Skills

Killian has the following key skillsets including:

- Project Management
- QGIS
- Report Writing
- Teamwork and Constant Communication with all parties in planning process
- Membership of the RTPI
 - Initiative in carrying out assessments for a variety planning applications
 - Knowledge of UK and Irish Planning Legislation
 - Presentation Skills

Previous Experience Essentials for this Project

- **Urban design project and Development plan on Letterkenny in conjunction with Donegal County Council and the Heritage Council, 2018.**
- **Property Development scenario on the Regeneration of Belfast City Quays, 2018.**
- **Population and Human Health EIAR Chapter for Fahy Beg Wind Farm, 2022.**
- **Researching and drafting up a Population and Human Health chapter as part of EIAR for the Regeneration of the South Docklands in Cork City, 2021.**
- **Writing up a Part 8 compliance performance planning statement tender for Cork City Council for 34 proposed social housing units in Northwest Cork City, 2022.**
- **Maintaining and Updating Consultation Tracker for Shelmalere Offshore Wind Farm, 2022-2023.**
- **Researching and drafting up a Population and Human Health EIAR chapter for Coumnagappul Wind Farm, 2023.**
- **Researching and drafting up a Population and Human Health EIAR chapter for Castlegarden Wind Farm, 2023.**
- **Carrying out a Third-Party appeal Response to a proposed Synchronous Compensator in Knockraha in response to issues raised regarding negative amenity, noise and road safety issues, 2022.**
- **Carried out a third-party appeal response to substitute consent to a primary commercial oyster facility in Co. Waterford in response to issues raised such as negative amenity, noise and non-compliance with planning process, 2023.**
- **Carried out a feasibility study looking at 9 different route option assessments for a proposed relief road outside Cork City looking at Non Material Assets specifically on Agricultural land and on Cultural Heritage, 2022.**
- **Resubmission for the final phase of a housing development in Co. Wexford incorporating updated planning policy pertinent to housing both nationally and locally as part of the updated Wexford County Development Plan, 2023.**

Key Information

Qualifications

MSc Planning & Development
Queens University Belfast
(RTPI and RCIS) Accredited 2017-2018

Higher Diploma in Social Policy
University College Cork 2013-14

BSc Government and Public Policy
University College Cork 2009 -2013

Professional Memberships

A Licentiate member of the RTPI since 2020.

A Graduate member of the RTPI from 2018-2020

A Student member of the RTPI from 2017-2018.

A Licentiate member of the IPI since 2023

Employment History

2022 – Present

Fehily Timoney & Company
Project Planner

2021 –2022

Cunnane Stratton Reynolds
Planner

2018 –2021

Southampton City Council
Assistant Planning Officer

2016 –2017

Stripe Payments
Customer Service Advisor



Leigh Doyle

Graduate Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Leigh is a Graduate Engineer at Fehily Timoney and Company working in the Energy and Planning department. He holds a ME degree in Civil, Structural and Environmental Engineering in UCC.

Leigh currently works on renewable energy projects preparing traffic and transport chapters of the EIAR for wind farms, Environmental and Planning Reports for solar farms, and grid infrastructure developments. He also has experience in the design of renewable energy developments. He conducts walkover surveys inspecting environmental constraints on site and carries out site access assessments for several wind and solar farm sites to ensure the desired entrances meet TII guidelines.

Key Skills

Leigh has experience in the following:

- EIAR, EIA
- Renewable Energy Development Design
- Coordination of Feasibility Studies
- Site Assessment
- Declaration of Identity and Planning Compliance Inspections
- Roads Department Consultation

Previous Experience Essentials for this Project

- **Fahy Beg Wind Farm, 2023.**
Fahy Beg is an onshore wind development in Co. Clare comprising 8 turbines and a total installed capacity of up to 38MW. Leigh was responsible for the Traffic and Transport chapter of the EIAR and the design of site entrances for the wind farm. Leigh conducted site walkover assessments within the quarry site to determine a suitable location for the onsite substation. The application was successfully submitted to the local authority in early 2023.
- **Rahanisky Solar Farm, Ongoing.**
Rahanisky Solar Farm is a 30MW commercial solar farm development in Co. Cork. Leigh led and coordinated the initial feasibility and design of the site which progressed to planning application stage. He is responsible for the Traffic and Transport assessment and the Construction Environmental Management Plan within the Planning and Environmental Report.
- **Milltownpass Wind Farm, Ongoing.**
Milltownpass wind farm is a 4 turbine wind energy development located in Co. Westmeath. The development has a total installed capacity of up to 29 MW. Leigh is leading the design of the wind farm incorporating the internal civils layout of onsite access tracks and drainage network, hard standings, turning heads, and associated ancillary infrastructure. Leigh conducted the site access survey for the site to determine suitable entrances which conform to TII requirements for direct accesses and completed a walkover of drainage and hydrological features on site.
- **Millvale Declaration of Identity (DoI) and Planning Compliance, 2021.**
Leigh led the site inspection for the first commercial Irish solar farm DoI and Planning compliance checks. He completed the compliance report providing evidence of the development conforming to local authority planning conditions and ensured development boundaries were within the consented lands.

Key Information

Qualifications

Masters (ME),
Civil, Structural &
Environmental Engineering,
University College Cork, 2021

Certificate in Professional
Engineering, Engineers Ireland and TU
Dublin, 2023

Professional Memberships

Member of the Institution of
Engineers of Ireland (MIEI)

Employment History

2021 – Present

Fehily Timoney & Company
Graduate Engineer

2020

Fehily Timoney & Company
Intern

2019

Sweco UK Ltd
Student Internship

Summer 2017 & 2018

Doyle Bros Construction
Construction Operative



Leigh Doyle

Graduate Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

- **Coumragappul Wind Farm, Ongoing.**
Coumragappul wind farm is a large scale wind energy development located in Co. Waterford. The wind farm comprises 11 turbines with a total installed capacity of up to 72MW. Leigh assisted in the design of wind farm infrastructure including the design of a bridge crossing location. Leigh was responsible for the Traffic and Transport assessment and Scoping Report for the wind farm application.
- **Woodstock Tourism Accommodation, 2021.**
Prepared the Engineering Feasibility Report for a 60 unit tourism accommodation development within the Woodstock Estate of Inistioge, County Kilkenny. The report evaluated the viability of the development in terms of site access, location of the development, services, water and wastewater, and ancillary facilities.
- **Dunkettle Interchange Upgrade Scheme, Ongoing.**
Responsible for environmental monitoring (noise, vibration, and particulates) at Viatrix pharmaceutical manufacturing plant for a major infrastructure project including site visits, troubleshooting, maintenance, and online monitoring.
- **Ballinagree Wind Farm, Co. Cork.**
Conducted a geotechnical walkover – including peat depth probing, shear vane tests, recording slope angles and identifying possible borrow pit locations. Carried out a receptor survey on site to determine active dwellings and commercial buildings in the vicinity of the wind farm site. Undertook a planning search for the site to determine nearby developments.
- **Annagh Wind Farm, Cork.**
Undertook a bridge inspection and assessment of proposed horizontal directional drilling location and assessment of the local road network along the turbine delivery route for a 6-turbine wind farm application in North County Cork.
- **Knockraha Synchronous Compensator, Cork.**
Conducted a site access survey to determine suitable entrances to the site that conform to TII requirements for direct access. Completed a geotechnical walkover of ground conditions on site.
- **Acres Wind Farm, Co. Donegal.**
Produced a report assessing the shadow flicker control system within the 6-turbine wind farm. The report reviewed datasets of the control system within the 6 turbines, receptors captured in the control system, and excluded receptors which FT identified. The report recommended remapping of receptors within the shadow flicker buffer zone and revised shut down durations to minimize shadow flicker events going forward.



Maureen Marsden

Project Acoustic Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Maureen holds Master of Engineering degree in Acoustics and Vibration from Southampton University (Institute of Sound and Vibration Research).

She has 28 years postgraduate experience and is currently a Project Acoustic Engineer with Fehily Timoney.

Maureen specializes in environmental noise including industrial, energy projects and transportation projects.

Maureen has a broad range of experience in noise and vibration across a variety of sectors including building, transport, industrial and energy sector projects.

She is currently a member of the Institute of Acoustics and Engineers Ireland.

Key Skills

Maureen has experience in the building/industrial/energy/gas projects including:

- Noise measurement
- Operational noise predictions
- Construction noise predictions
- Noise and vibration assessments

Previous Experience Essentials for this Project

• Wind Farm Projects

Involved in all stages of windfarm projects, from pre-planning to post construction compliance monitoring:

- Conducted baseline noise measurements within Ireland to determine prevailing background noise in the vicinity of proposed windfarms. Analysed noise based on the Institute of Acoustics Good Practice Guide to the Application of ESTU-R-97 and the Institute of Acoustics Good Practice Guidelines. Determined noise limits in line with the Wind Energy Development Guidelines 2006 to define site noise criteria.
- Predicted operational noise from proposed windfarms using 3-D noise modelling software to determine compliance with noise criteria, based on methodology in ISO9613 Attenuation of sound during propagation outdoors. Where noise limits were exceeded, determined curtailment strategy based on quieter turbine operational modes.
- Assessed noise from temporary works associated with windfarm construction using BS5228 Code of Practice for noise and vibration control on construction sites. Predicted construction noise and advised on mitigation works as required. This assessment also includes consideration of construction noise from proposed grid connection works.
- Produced Environmental Impact Assessment Reports for Windfarm developments, based on the operational and construction noise assessment as detailed above.
- Conducted post construction compliance noise survey and analysed data for comparison with noise limits to determine compliance with the planning criteria.

Key Information

Qualifications

Master of Engineering in Acoustics and Vibration, Southampton University, 1994

Professional Memberships

Member of the Institute of Acoustics
Member of Engineers Ireland
Associate Member of the Acoustical Society of America

Employment History

2019 – Present

Fehily Timoney & Company
Project Acoustic Engineer

2017 – 2018

Resonate Acoustics
Senior Acoustic Consultant

2015 – 2017

Soundsorba
Sales Engineer

2011 – 2015

Kellogg Brown and Root
Senior Technical Professional
(Noise and Vibration)

2011 – 2011

Mott Mac Donald
Senior Acoustic Consultant

2011 – 2011

Mott Mac Donald
Senior Acoustic Consultant

2008 – 2010

Applied Acoustic Design
Senior Acoustic Consultant

2007 – 2008

Hoare Lea Acoustics
Senior Acoustic Consultant

2002 – 2006

Sound Research Laboratories
Acoustic Consultant

1998 – 2001

Arup Acoustics
Acoustic Engineer



Maureen Marsden

Project Acoustic Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Sample projects include: Annagh Windfarm, Ballagh Windfarm, Ballinagree Windfarm, Barnadivine Windfarm, Coom Green Energy Park, Coumnagappul Windfarm, Croaghaun Windfarm, Dernacart windfarm, Drehid Windfarm, Fahy Beg Windfarm, Letteragh Windfarm, Tullahennel Windfarm.

- **Solar Farm Projects**

Derived noise criteria for solar farms based on EPA criteria. Predicted operational noise from proposed solar farm equipment to determine compliance with the noise criteria. Advised on mitigation measures which included equipment relocation relative to noise sensitive locations, selection of quieter equipment and mitigation of equipment where required. Predicted construction noise from the temporary works associated with the solar farm construction and recommended mitigation if required.

Sample projects include: Ballyvalode Solar Farm, Clashwilliam Solar, Dunmurray Golf Course Solar Farm, Milltown Solar Farm, Moortown Solar farm, Kilcurly Solar Farm. Rahanisky Solar Farm, Rathdrinagh Solar Farm.

- **Rotating Stabiliser Projects**

Conducted baseline noise survey, to allow noise criteria to be determined in line with EPA noise guidance. Predicted noise from the proposed rotating stabiliser to determine compliance with criteria. Measured transformer noise from a nearby substation to determine existing noise sources.

Sample projects Knockraha Rotating Stabiliser, Co. Cork, and Maynooth Rotating Stabiliser, Co. Kildare.

- **Transportation Projects 1994-2023**

Worked on a variety of transportation projects including railway and road as summarized below:

- In situ measurement of acoustic performance of noise barriers over a 5 year period on Motorways in Ireland in accordance with ISO EN 1793-5 and 6 on behalf of Transport Infrastructure Ireland.
- Measured noise at a residential property near the N7 dual carriageway following noise complaints and assessed against criteria within the Kildare County Council Noise Action Plan.
- Predicted noise for different route options for the N19 upgrade project during the route selection stage based on TII Guidelines.
- Predicted operational and construction noise for a range of railway transport projects including the Channel Tunnel Highspeed Rail Link project and Sunderland Metro. Developed noise mitigation schemes using noise barriers and earthworks.
- Measured operational noise levels post construction at Docklands Light Railway extension.
- Measured internal noise of Inter-city trains for the purpose of developing a specification for new rolling stock.
- Conducted baseline noise survey for Dublin Port Tunnel.

- **Building Acoustic Projects 2022-2019**

Provided acoustic advice on a range of building acoustic projects.

- Conducted baseline noise surveys and predicted mechanical services noise during the planning stage. The survey and Local Authority criteria were used to set the noise criteria. Where appropriate advised on noise mitigation to meet the planning requirements.
- Advised on noise break-in and external building envelope design requirements for residential and office developments to meet suitable internal acoustic criteria (based on guidance such as ProPG: Planning and Noise and other guidance)
- Assessed noise breakout from leisure facilities including restaurants, nightclubs and bars to advise on building envelope upgrades to meet Local Authority Criteria.
- Advised on sound insulation requirements to meet building regulation requirements (Approved Document E) for residential and hotel developments, in addition to sound insulation requirements for office fit-outs based on privacy requirements between adjacent spaces.
- Measured airborne and impact sound insulation performance of residential, hotel, and office buildings and advised on areas for improvements where performance criteria were not met.
- Provided advice on meeting internal acoustic absorption requirements to improve acoustic comfort and speech intelligibility within a range of spaces including community halls, churches, sports halls and schools.

Sample projects include Travelodge hotels, Chelsea Academy and Hammersmith Academy Schools, Deutsche Bank, Luminar Leisure, Hewitt Mills Cork.

- **Compliance Monitoring at EPA Licenced Facilities**

Monitored noise at EPA licensed facilities to determine if emission limits within license conditions are met. This included food and drink production facilities, civic amenity sites, waste processing facilities and engineering facilities.

Advised on contribution from off site sources to determine if noise limits are exceeded. Assessed noise in line with EPA NG4 guidelines and BS4142 Methods for rating and assessing industrial and commercial sound.



Maureen Marsden

Project Acoustic Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

- **Gas Projects 2014-2023**

Conducted baseline noise surveys for proposed compressed natural gas (CNG) installations following noise attenuation works. Predicted and assessed operational noise for inclusion within planning submission, where required.

Conducted a series of internal and external measurements at eleven Above Ground Installations (AGI's) in Ireland. Internal measurements were used to assess noise levels against occupational noise criteria for workers. External measurements were used to assess noise levels against external environmental noise criteria.

Conducted a baseline noise survey at Whitegate AGI (Above ground installation), prior to construction works.

Sample projects for proposed CNG installations include Carhoo, Birdhill service station, M7 Junction 14 Mayfield, Cappagh Rd, Virginia, City North. Sample projects for AGI installations include: Scholarstown AGI, Swords Road AGI, Kilshane AGI, Ballynaneashagh AGI, Cork Gas AGI, Abbotstown AGI, Ardree AGI, Ballyduff AGI.

- **Industrial Noise Assessments, 2011 - 2019**

Predicted noise from a range of industrial facilities using 3-D noise modelling software for a range of industrial developments, including LNG(liquid natural gas) facilities, dairy facilities and water works to advise on noise control measures to meet appropriate environmental legislation. Also predicted in-plant noise contours for purposes of identifying hazardous zones related to Noise at Work requirements.

Sample projects include Thames Water projects, Irish Water projects, Co. Kilkenny, Ballyragget Glanbia site, Co. Kilkenny, Jazan Refinery, Saudi Arabia, Bioatlantis, Co. Kerry.

- **Port Noise Assessments 2017-2023**

Port Noise Assessments

Monitored noise at noise sensitive locations over several weeks overlooking the Ringaskiddy Deepwater port, Co. Cork. Noise was monitored over a period of weeks during the arrival and unloading activities of a particular ship which had led to noise complaints. The measured levels were compared the noise limits with NG4 criteria. Also BS4142 was used to assess the likelihood of adverse impact at nearby properties.

Measured noise at Dublin Port for the purpose of assessing if security personnel had the potential to exceed noise at work limits. The assessment was based on a combination of attended measurements in addition to use of noise dosimeters worn by key personnel. This was used to advise on the effect of the type of work undertaken by staff in order to meet noise at work limits.



Pablo Delgado

Drainage Design Lead



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Pablo is a Civil Engineer with more than 8 years' experience in planning, design and construction of hydraulic engineering projects and has experience working with Clients and Contractors. Specializing in hydraulic infrastructures, Pablo focuses on working with all project stakeholders to produce practical, efficient designs and on resolving issues that arise through the course of the works. Pablo has an excellent knowledge of hydraulic design, which extended to the creation of 'best-practice' guidelines, and has expertise drainage design, standards and tools. He has experience of delivering drainage designs in a D&B and PPP environment and has developed designs for construction in the UK, Ireland and Spain.

Key Skills

Pablo's qualifications and experience exceeds the minimum requirements for the role of Drainage Engineer. He has achieved bachelor's degrees, Post-Graduate Diplomas in civil engineering disciplines up to NFQ Level 8 and 9, with a strong focus on hydraulic design and project management. Additionally, he has completed the Designing for Safety in Construction Course to comply with the safety and best practices in the industry. Pablo has 8 years' experience as a drainage engineer in drainage design for large roads and infrastructure projects.

Previous Experience Essentials for this Project

- Ballylickey Flood Defences, 2023.**
 Pablo was the drainage designer for the Flood Defences Study in the Ballylickey, Co. Cork. The project involves the hydrological and hydraulic analysis of the river Owvane, river modelling using Hec-Ras under the tide water level regime of the area, provide the required flood defences to protect the existing properties and the road R584 located on the right bank of the river.
- N72/N73 Mallow Relief Road, €50m, 2023.**
 Pablo was the drainage designer for the flood studies which involves one bridge (32m span) and 5 culverts of large dimensions, a flood compensation area, flood maps, section 50 applications and the technical report.
- N22 Baile Bhuirne to Macroom, Detailed Design, €280m, 2023.**
 Pablo was working on the drainage design. This role involved the delivery of the following tasks: preparation of conceptual drainage designs, pre-earthworks drainage, network drainage, culvert design, stilling basin, scour protections, attenuation and pollution control, 3D modelling of drainage designs using Micro-drainage, updating drainage designs following review, preparation of design at key submission stages, further optimization of models, preparation of drainage schedules, design of SuDS drainage systems prior to draining to receptor and preparation of final model for submission. Pablo provided supervision, support, and technical advice to the team member of the Drainage team.
- N5 Ballaghaderren to Scramoge Road Project, €200m, 2022.**
 Pablo was the Third-Party Checker for the drainage design packages in the construction of 34 km of a new single carriageway road from the western end of the existing N5 Ballaghaderren Bypass to the townland of Scramoge in county Roscommon. He was responsible for reviewing all the drainage design packages of the project: pre-earthworks drainages, networks drainages, attenuation and pollution control, and culverts.

Key Information

Qualifications

- B.E. Civil Engineering - University of Zaragoza, Spain (2014).
- B.E. Technical Engineering in Publics Works - University of Zaragoza (2012).
- Master's degree in project Management – Polytechnic University of Valencia, Spain (Present).
- Post-Graduate Diploma in Project Management - Polytechnic University of Valencia, Spain, (2021).
- Post-Graduate Diploma in Analysis and Design of Water Networks - Polytechnic University of Valencia, Spain, (2019).
- Post-Graduate Diploma in Hydraulic and Environmental Infrastructures in Urban Areas - University of Zaragoza, (2012).
- Certificated Diploma in Hydraulic Transient Analysis of Water Networks - Polytechnic University of Valencia, Spain, (2020)

Professional Memberships

Chartered Engineer, Engineers of Ireland 2023

Employment History

2022 to Present

Senior Project Manager/Drainage Team Leader, Fehily Timoney and Company

2020 – 2022

Senior Project Engineer, J.B. Barry and Partner Ltd.

2016 – 2020

Senior Project Engineer, Clandillon Civil Consulting Ltd.

2015 – 2016

Assistant Project Manager, Société Générale de Surveillance

2014 – 2015

Design Engineer of hydraulic projects, Perez Benedicto, S.L.

2012 – 2012

Assistant Site Manager, Ingeniería y Obras Aragonesas del Ebro, S.L



Pablo Delgado

Drainage Design Lead



CONSULTANTS IN ENGINEERING,
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He provided RFI reports to the designer company with technical comments to improve their design with the goal to provide the Design Certificates to allow the design to go to next step of review with the Employer Representative.

- **Ten-T Section 1 – N15/N13 Ballybofey / Stranorlar Urban Region, €90m, 2022.**
Pablo was the drainage designer responsible to deliver the Flood Study including hydrological analysis, hydraulic analysis, flood maps and section 50 application for the existing and proposed bridge in the river Finn.
- **N16 Lugatober Drumkilsellagh to Lugnagall, €28m, 2021.**
Pablo supervised the team members and provided technical advice to the Project Manager. He was responsible for developing designs for scour protections in streams, culverts, and abutments. Additionally, he thoroughly reviewed and refined hydraulic models for streams and culverts to ensure that they met the project's requirements.
- **Temporary HGV Parking Facility, 2020.**
Pablo was the Drainage Designer of this project, this role involved the delivery of the following tasks: preparation of conceptual drainage designs, network drainage, attenuation and pollution control, 3D modelling of drainage designs using Microdrainage, preparation of drainage schedules, design of SuDS drainage systems prior to draining to receptor and preparation of final model for submission. Pablo provided supervision, support and technical advice to the team member of the Drainage team.
- **N4 Collooney to Castlebaldwin, Detailed Design, Major Road, €150m, 2020.**
Detailed Design: Drainage designer with responsibility for completing detailed drainage network design to optimize the overall design for the Contractors on a 14km major road project. Provided technical advice and guidance to the Project Manager and team members, supervise team members, develop 3 flood studies for river and lakes, design of a hydraulic control to control water levels in lakes (weir), design and optimization of extensive drainage networks and APC systems (Attenuation pond and linear wetlands), culvert design, design of SuDS and pre-earthwork drainages, design of surface water channels, preparation of section 50 and 47 applications to the OPW. Tender Design: Pablo was the drainage designer with responsibility for preparing drainage tender design for submission as part of tender package for the bidding Contractor. Work included review of different drainage options to optimise the final design including the design of sealed drainage system in areas of underlain by karstified bedrock or prone to flooding, assessment of culvert and pipe sizing, attenuation pond sizing for attenuation and pollution control and production of drainage schedules and drawings. Drainage models were produced using Civil3D and Autodesk Storm & Sanitary Analysis software.
- **N8 Dunkettle Interchange Upgrade Scheme, €215m, 2020.**
As part of CCC's drainage design team for this complex road project, Pablo was working on the drainage design for the interchange scheme and various linkages. This role involved the delivery of the following tasks: review of drainage design statement, preparation of conceptual drainage designs, pre-earthworks drainage, network drainage, culvert design, attenuation and pollution control, 3D modelling of drainage designs using Micro-drainage, updating drainage designs following review, preparation of design at key submission stages, further optimization of models, preparation of drainage schedules, design of SuDS drainage systems prior to draining to receptor and preparation of final model for submission. Pablo provided supervision, support, and technical advice to the team members of the Drainage team.
- **N5 Westport to Turlough Road, €170m, 2020.**
As part of the detailed design for this 6.9km national road upgrade project, Pablo completed the flood study including flood mapping for existing and proposed structures using HEC-RAS proprietary hydraulic analysis software. The design of a further five culverts was completed using Civil 3D and CulvertMaster software packages.
- **N56 Lettermacaward to Glenties (Kilraine), Detailed Design, €23m, 2020.**
As part of the detailed design for this 6.9km national road upgrade project, Pablo completed the flood study including flood mapping for existing and proposed structures using HEC-RAS proprietary hydraulic analysis software. The design of a further five culverts was completed using Civil 3D and CulvertMaster software packages.
- **Ulster Canal Green Way Phase 3, Constraints Report, 2019.**
As part of the development of the constraints study, Pablo undertook a desktop review and a site visit of the study area with a view to identifying and mapping engineering constraints present along each of the potential route corridors which had been identified. The site walkover involved carrying out checks of existing embankments along the canal, identifying evidence of historic flooding and developing an interactive database of photos (normal and 360 spherical photos) along the canal.



Pablo Delgado

Drainage Design Lead



CONSULTANTS IN ENGINEERING,
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- **High Speed 2 Early Works Package WP51 Drainage (HS2 EWC WP51), 2018.**

Pablo was the Drainage Designer for Work Package 51 which forms part of the HS2 enabling works. This role involved the delivery of the following tasks: review of drainage design statement, preparation of conceptual drainage designs, pre-earthworks drainage, network drainage, culvert design, attenuation and pollution control, 3D modelling of drainage designs using Microdrainage, updating drainage designs following review, preparation of design at key submission stages, further optimisation of models, preparation of drainage schedules, design of SuDS drainage systems prior to draining to receptor and preparation of final model for submission. Pablo provided supervision, support and technical advice to the team member of the Drainage team of Ramboll in the Birmingham office.
- **A9 Luncarty – Pass of Birnam, Tender Design, 2018.**

Pablo was the Drainage Designer responsible for checking and developing all elements of the specimen drainage design on the 9.5km A9 Luncarty – Pass of Birnam tender in Scotland. Pablo was responsible to review and provide optimizations for the drainage networks, attenuation pollution control ponds, culverts, pre-earthworks drainages, cross drains, networks schedules and drawing for quantities, the drainage tender design for submission as part of the tender package for the building contractor.
- **Mullinure, 2018.**

Pablo was the Drainage designer for link road associated with a residential development area in Co. Armagh, Northern Ireland. Specific project tasks included the development of pre-earthworks, network drainages and attenuation facilities. Outputs included: preparation and analysis of drainage model incorporating surveys and existing data using Autodesk Storm and Sanitary Analysis and Civil 3D, design and development of drainage standard details, design of pre-earthworks drainage system, developing carrier drain design networks and gully layouts, preparation of drainage specification, finalisation of drainage drawings and preparation of drainage package for submission.
- **A737 Dalry Bypass Contractor's Designer, €31m, 2017.**

Pablo was the Drainage designer responsible for delivery of pre-earthworks drainage, culverts, network drainage and attenuation design on a 4km D&B highways project in Scotland. Drainage design involved the following works: networks and pre-earthworks drainage to 3.8km carriageway (2.45km 2 + 1 with overtaking lanes and 1.35km single carriageway), substantial incorporation of overland flow into some mainline networks, 6 no. culverts and 2 no. stream diversions, 5 no. outfalls to existing surface waters via SUDS basins and additional outfalls to existing drainage networks, deck drainage to 250m viaduct over Garnock River, consultation with SEPA and production of CAR applications, modelling of all networks and SUDS systems using Civil 3D Storm and Sanitary Analysis module to agree parameters from contract documents and discussion with SEPA.
- **N25 New Ross Bypass, €230m, 2017.**

Pablo was the drainage designer responsible to deliver the Flood Risk Assessment including hydrological analysis, hydraulic analysis for the existing and proposed scenario in the river Barrow and the stream Aughnacrew. Provide the 1D hydraulic model for the mentioned scenarios, prepare the flood maps, drawings, and the corresponding report.
- **Pembroke Hill, 2017.**

Pablo was the Drainage Designer responsible to deliver the design the drainage design for a new link road associated with a residential development area in CO. Wexford, Ireland. The project involves network drainage, attenuation and pollution control (attenuation ditches), pre-earthworks drainages, cross drains and a settlements analysis. The relevant achievement in the project involved the optimization of the network drainages using over the edge interceptor ditches, the implementation of check dams in the attenuation ditches to provide the attenuation and treatment.
- **Leanamore Wind Farm, 2017.**

Pablo was the Drainage Designer for the project Leanamore Wind Farm, which comprised of 9 Wind Turbine Generators (WTG), a substation, a large contractor compound; 5 km of services route comprised both floated and founded construction. The project involves extensive ditch networks, cross drains and facilities treatment. The relevant achievement in the project involved the temporary and permanent drainage networks (ditch networks) and the settlement ponds, hydrologic and hydraulic analysis of the area, prepare standard details, site visits, meeting with the Client and Contractor.
- **PDM Infrastructure, 2017.**

Drainage Designer assisting in the development of drainage and attenuation systems as part of the refurbishment of a 17Ha commercial development in Co. Kildare. The works were procured under an ECI target cost model and involved the design and construction of separate foul, surface water and roof water systems, attenuation measures and a waste-water treatment plant. Works included the assessment of an existing drainage system and catchment analysis before development of a detailed drainage design with separate systems for roof and surface water. Optimisation of the design resulted in reduction of main spine road collector pipe diameter and reductions in trench depths and slopes where feasible.



Pablo Delgado

Drainage Design Lead



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
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- **Modernisation of irrigation system of “Molinar del Flumen” phases I and II, Spain, €43.8m, 2016.**

Pablo was the Technical Assistant of the Project Manager for Molinar del Flumen Project which was a modernisation of the existing irrigation system in the Province of Huesca, Spain. The project involves the construction of a new pressure irrigation network including the installation of extensive pipes pressure pipes (approximately 42km), valves, an irrigation reservoir and a pump station. The relevant achievements in this project involved technical assistance, support and advice to the project manager, supervised the installation of different pressures pipes, valves, pump stations, material movement, meetings with the contractor and suppliers, provide environmental reports, quantities reports.

- **Flood Risk Study of the gravity pipeline for the Avenida de la Industria, Spain, 2015.**

Pablo was the Drainage Designer of the flood risk study for the network drainage of the Avenida de la Industria, Zaragoza, Spain. The relevant achievement in this project involved the analysis of the existing hydraulic capacity of the network drainage, the redesign of the network to increase the hydraulic capacity, site inspections, meeting with the client, the preparation of drawings, networks schedules, hydraulic models and quantities.

- **Drainage Network for the new development in the Air Base of Zaragoza, Spain, 2015.**

Pablo was the Drainage Designer for a new development in the Air Base of Zaragoza, Spain. The relevant achievement in this project involved the hydrologic and hydraulic analysis of the area, the design of a new network drainage, cross drains and pre-earthwork drainages.

- **Flood Risk Protection System for the BSH Factory La Cartuja, Zaragoza, Spain, 2015.**

Pablo was the Drainage Designer of the flood risk study for the network drainage of the factory BSH La Cartuja, Zaragoza, Spain. The relevant achievement in this project involved the design of new network drainage and storage tanks, site inspections, meeting with the client, the preparation of drawings, networks schedules, hydraulic models and quantities.

- **Hydraulic and flood risk study of the gravity pipeline system for the industrial state “INSIDER”, 2015.**

Pablo was the Drainage Designer of the flood risk study for the main collector of the network drainage of the industrial state INSIDER, Zaragoza, Spain. The relevant achievement in this project involved the design of a new pipe line and the design of off-line storage tanks, site inspections, meeting with the client, the preparation of drawings, networks schedules, hydraulic models and quantities.

- **Reform of the theatre and communal zones of the “Colegio Mayor Universitario Virgen del Carmen”, 2012.**

Pablo was the Assistant of the Site Engineer for the project “Colegio Mayor Virgen del Carmen” in Zaragoza, Spain. This project comprised the modernization of the theatre and the communal zones of “Colegio Mayor Universitario Virgen del Carmen”. The relevant achievement in this project involved technical assistance of the Site Engineer, supervision of the supply material, human resources and works; updated the work planning, prepare the scaffolding plan and provide the monthly valuation and progress reports.

Ross Macklin PhD (in prep) B.Sc. (Hons) MCIEEM., MIFM, HDip GIS, PDip IPM
Principal ecologist – Triturus Environmental Ltd.
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087-9208742



Biography

Ross is an ecologist with over 15 years' professional experience in Ireland. He specialises in freshwater fisheries ecology, biology and water quality. He has considerable experience in a wide range of ecological and environmental projects including EIAR, EcIA and AA/NIS reporting, as well as biodiversity, water quality monitoring, invasive species and fisheries management. He also has expert identification skills in macrophytes, freshwater invertebrates, protected aquatic habitats and protected aquatic species including freshwater pearl mussel. His diverse project list includes work on renewable energy developments, flood relief schemes, road schemes, blueways/greenways, biodiversity projects, fisheries management projects and catchment wide water quality management.

He is currently completing his Ph.D. on the ecology and impact of common carp (*Cyprinus carpio*) in Irish waters.

Qualifications

- B.Sc. (Hons) Applied Ecology, University College Cork (2000-2004)
- HDip GIS, University College Cork (2006)
- PDip Integrated Pest Management, University College Dublin (2016)
- Ph.D. Environmental Science, University College Cork (2011-present part-time)

Professional affiliations

- Full member of Chartered Institute of Ecology and Environmental Management (CIEEM)
- Registered member Institute of Fisheries Management (MIFM)

Employment history

- 2005 – 2009 – Environmental consultant, Atkins
- 2010 – 2018 – Self-employed environmental consultant, Triturus Environmental Services
- April 2019 – present – Principal ecologist, Triturus Environmental Ltd.

Key skills and assets

- EIAR, EcIA, AA, NIS
- Fisheries assessments & fisheries habitat management
- Ecological Clerk of Works & expert witness
- Biological water quality (Q-sampling, SSRS, SSIS, RIVPACS)
- Habitat mapping
- Ecological design and habitat creation
- RHAT, River Habitat Surveys, Lake Habitat Surveys, Canal Habitat Surveys, Pond Surveys, Habitat Suitability Indices
- Invasive species
- Otter surveys (including Human Disturbance Index)
- Protected species (white-clawed crayfish, freshwater pearl mussel, amphibians, mammals, macrophytes, bryophytes)
- Biodiversity enhancement & community engagement
- Catchment water quality management plans
- Geographical Information Systems, Digital Terrain Models, Lake Bathymetric Studies & Drone Flight

Selected project experience

Lake and river habitat surveys (including water quality analysis)

Páirc na Mara Marine Innovation Park, 2018-2020 (client: Ryan Hanley/ Údarás na Gaeltachta)

Preparation and management of Biodiversity & Water Quality Chapter for EIAR report. The project involved fresh water abstraction from the Lough Skannive catchment, Co. Galway and the development of a marine innovation park. Extensive baseline surveys were completed including catchment-wide electro-fishing, Arctic charr netting and spawning surveys, physiochemical water quality including Q-sampling, lake macro-invertebrates, detailed lake habitat surveys including macrophytes and classification of Annex I oligotrophic isoetid lake habitat (3110). The baseline surveys were conducted in 4 lake basins and in multiple feeder rivers. The baseline data compiled informed the preparation of a very detailed Environmental Impact Assessment report that involved a multidisciplinary approach. It included the application of water balance modelling according to UKTAG thresholds relative to the identified aquatic sensitivities. This ensured Water Framework Directive compliance in adherence to a detailed schedule of environmental commitments. It also delivered commitments to protect Annex I aquatic habitats and salmonid fish.

Loch an Mhuilinn water abstraction, 2017 (client: Ryan Hanley)

Detailed bathymetric study of Loch an Mhuilinn, Co. Galway to inform fresh water abstraction, in addition to aerial drone surveys. Surveys were undertaken using state of the art hardware and software, RTK-enabled Trimble GPS, Lowrance SONAR, Ebee Sensee Fixed Wing Drone and Reefmaster Software. The Annex I littoral habitat 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) was characterised with over 20 species of macrophyte plants records including *Nitella flexillis* and *Elatine hydropiper*. Lacustrine littoral salmonid spawning areas were identified and a comprehensive report was prepared.

Dublin City otter survey, 2018-2020 (client: Ryan Hanley)

Completed the largest survey of urban otter populations in Ireland to date and prepared a comprehensive report with a large focus on management and conservation. The lower reaches of over 20 watercourses within Dublin City were surveyed for otter signs, with a particular emphasis on quantifying and mapping otter habitat. RHAT methodology was used to classify and map otter habitat quality along 500m sections of each watercourse. Novel methodology (the Human Disturbance Index, HDI) was developed by Triturus and used to detect relative levels of human disturbance/encroachment on riparian areas and the relative effects on otter sign distribution. The study identified an important link between riparian seclusion and otter breeding areas, greatly informing future management in Dublin City and improving knowledge of urban otter populations.

Irish Water SSRS surveys, 2018 (client: Irish Water)

SSRS surveys and reporting were undertaken for the National Certificate of Authorisation Programme (NCAP), which provides for smaller wastewater agglomerations (i.e. <500 PE). A survey and reporting was undertaken in receiving watercourses within 25 catchments inclusive of reporting.

IPPC licence compliance, 2019 (client: Duffy Meats t/a Kerry Foods)

Detailed Q-sampling and physiochemical analysis was undertaken across 12 no. watercourses to ensure IPPC licence compliance. This included riverine habitat surveys examining algae coverage, macrophyte coverage, gravel condition index and physiochemical data analysis of historical trends relative to targets of the Surface Water Regulations S.I. No. 77/2019.

Kilbarry Bog landfill, 2018-2020 (client: Ecosystem Services & Waterford City Council)

Detailed physiochemical and biological water quality analysis (Q-sampling) in addition to macrophyte surveys were undertaken to inform the preparation of the aquatic elements of annual environmental reporting. This included physiochemical and biological water quality sampling of 10 no. riverine sites in addition to 3 no. habitat compensation pond habitats (including PSYM methodology to assess ecological quality).

Kepak Environmental Report & IPPC license return, 2009-2014 (client: Kepak Group)

Preparation of biological and pathogenic water quality reports for Kepak Group, Condonstown, Co. Cork as part of their annual license return. This involved Q-sampling of riverine invertebrates and pathogenic water quality analysis.

Castlewaller wind farm, Co. Limerick, 2019 (client: Fehily Timoney)

Baseline physiochemical and biological water quality sampling (Q-sampling, 12 sites) in addition to catchment-wide electro-fishing and white-clawed crayfish surveys, was undertaken along a proposed cable route in the catchment of the proposed Castlewaller wind farm, Co. Limerick to inform EIAR preparation.

Derrinlough wind farm, Co. Offaly, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling) in addition to a fisheries habitat assessment, was undertaken in the catchment of the proposed Derrinlough wind farm, Co. Offaly to inform EIAR preparation.

Croagh wind farm, Co. Leitrim, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling, 13 sites) in addition to catchment-wide electro-fishing was undertaken along a proposed cable route in the catchment of the proposed Castlewaller wind farm, Co. Leitrim to inform EIAR preparation.

Croaghaun wind farm, Co. Carlow, 2019 (client: Fehily Timoney)

Baseline biological water quality sampling (Q-sampling, 21 sites) in addition to catchment-wide electro-fishing was undertaken in the catchment of the proposed Croaghaun wind farm, Co. Carlow to inform EIAR preparation.

Knockharley landfill, 2019 (client: Fehily Timoney)

Baseline physiochemical and biological water quality sampling (Q-sampling & SSRS), RHAT scores and electro-fishing was undertaken in the catchment of Knockharley Landfill to inform EIAR preparation.

Fisheries

Ballynacarrig River rehabilitation project, Co. Offaly, 2019 (client: LAWPRO)

Undertook a baseline aquatic assessment of the Ballynacarrig River (Silver River tributary) that included an assessment of fisheries (electro-fishing), biological and physiochemical water quality, and macrophytes. A detailed river management plan was prepared to help LAWPRO enhance the water quality and fisheries value as part of the Environmental River Enhancement Fund (EREP), as a designated 'Area For Action' within the wider catchment.

Owenacurra (Midleton) Flood Relief Scheme, 2018-2019 (client: Arup)

Conducted a catchment-wide electro-fishing survey in the Owenacurra and Dungourney River systems to establish a baseline of lamprey, salmonid and eel populations. Utilised a fixed-wing drone and RHAT surveys to establish the most pristine areas of channel pre-construction works and conducted detailed redd counting surveys and substrate assessments for sea trout and Atlantic salmon populations in the catchment.

River Barrow weirs fisheries survey, 2018 (client: McCarthy Keville O' Sullivan & Waterways Ireland)

Conducted an electro-fishing survey of three large weir sites on the River Barrow and prepared a detailed fisheries report on the conservation objective fish species found in the River Barrow and River Nore SAC. Used a 3m-RIB and bathymetric software to profile the sediment classes in order to establish the distribution of soft lamprey ammocoete habitat relative to proposed weir upgrade works and identified fisheries constraints based on the proposals.

Sea Lamprey *Petromyzon marinus* spawning survey, Lower Mulkear River, 2018 (client; IDA & Fehily Timoney)

Undertook a sea lamprey spawning survey of the Lower Mulkear River, Co. Limerick used a fixed-wing drone and infrared imagery to detect sea lamprey redds. Redd sites were validated on the ground using an RTK-enabled Trimble GPS and a correction factor was developed based on the accuracy of detection by the drone relative to data collected in the field. The project successfully established the most important zones of the river used by spawning lamprey with over 50 redds detected. This was the first time an aerial drone had been used to map sea lamprey redds in Ireland.

Macrophytes

Lough Skannive water abstraction, Carna 2019 (client: Ryan Hanley)

Conducted a detailed lake habitat survey of the macrophyte community of a 50-hectare lake using transects. This helped profile vegetation corresponding to the Annex I 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) and informed EIA preparation.

Killaloe Canal Greenway, Co. Clare, 2019 (client: MKO).

Conducted detailed macrophyte, invasive species and fisheries surveys to inform an Ecological Impact Assessment (EIA) for a proposed Blueway development in Killaloe.

Opposite-leaved pondweed (*Groenlandia densa*) management plan, 2018 (client: Fehily Timony)

Undertook an opposite-leaved pondweed survey of the Loughmore Canal, Co. Limerick through a full macrophyte plant audit of the canal. A detailed management plan was prepared in light of proposed flood alleviation works

Floating river vegetation survey of the Lower River Lee, Co. Cork, 2015 (client: Ryan Hanley & OPW)

Conducted a detailed study of the distribution of floating river vegetation in the Lower River Lee between Inniscarra Dam and Cork City Centre. Transect and underwater dive surveys were undertaken using random replicated blocks. The distribution and cover of *Ranunculus*, *Potamogeton*, *Callitriche* and moss species was estimated and distribution maps compiled. It represented one of the most detailed studies in the south of Ireland on the Annex I habitat (3260) Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation.



Trevor Byrne

Roads and Civil Design Team



CONSULTANTS IN ENGINEERING,
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Profile

Trevor works as a Principal Engineer for Fehily Timoney and Company. Trevor holds a master’s degree in Sustainable Energy Systems from the University of Edinburgh and an honours degree in Civil Engineering following his studies at Edinburgh Napier University and Cork Institute of Technology. Trevor is a senior project manager within the Planning and Energy division at FT and is a chartered engineer with Engineers Ireland. His primary area of expertise is in the design and construction of renewable energy projects and urban developments.

Trevor gained much of his experience working in the UK renewable energy industry and has delivered a wide variety of projects employing different technologies including onshore wind, hydroelectric and solar PV. He also has significant experience working in the Irish construction industry and in the United States on a variety of environmental projects focusing on renewable energy, solar PV, water treatment and surface water and wastewater treatment projects using green infrastructure.

Trevor has considerable environmental engineering and environmental impact assessment experience and is a proven project manager with a track record in successfully guiding large scale projects through the consenting process as well as construction stage. He also has significant on-site experience relating to managing the construction of renewable energy developments and environmental coordination roles. Trevor has experience in the following:

- Project Management
- Renewable Energy Development Design and Construction
- Environmental Impact Assessment and Appropriate Assessment
- Environmental Coordination
- Technical and Public Consultation
- Oral Hearing
- Site Supervision
- Detailed Design
- Strategic Infrastructure Developments

Meeting the Minimum Requirements of the Role

- BSc. (Hons) in Civil Engineering with first class honours (2008); BEng. In Civil Engineering (2005); MSc in Sustainable Energy Systems (2009);
- Chartered Engineer (Engineers Ireland) 2017;
- Over 15 years of industry experience;
- Over 10 years of project management experience in the renewable energy industry.

Previous Experience Essentials for This Project

- **Fahy Beg Wind Farm, 2023**
Fahy Beg is an 8 no. turbine wind farm in County Clare. FT prepared a planning application and EIAR for the project on behalf of RWE Renewables Ireland. Trevor project managed all aspects of the environmental impact assessment and planning application for the project. As well as this Trevor also lead the environmental coordination and engineering design of all onsite and offsite infrastructure for the proposed development including all infrastructure associated with the wind farm,

Key Information

Qualifications

- MSc. Sustainable Energy Systems
University of Edinburgh
2008-2009
- BSc. (Hons), Civil Engineering
Edinburgh Napier University 2006-2008
- BEng in Civil Engineering
Cork Institute of Technology
2002-2005

Professional Memberships

- Chartered Engineer, 2017
- Member of Engineers Ireland, 2010

Employment History

2016- Present

Fehily Timoney & Company
Senior Engineer

2012 – 2016

Greenspan, Edinburgh, UK
Project Manager

2010 – 2012

Cardinal Resources LLC,
Pittsburgh, PA, USA
Project Engineer

2005 – 2007

O’Shea Leader Consulting Engineers,
Cork
Graduate Engineer



Trevor Byrne

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grid connection and turbine delivery route, working closely with the client's electrical consultant. The application was successfully submitted to the local authority in early 2023.

- **Ballinagree Wind Farm, 2022**

Ballinagree is an 20 no. turbine wind farm development in County Cork with an installed capacity of up to 132 MW. FT prepared a planning application and EIAR for the project on behalf of Orsted and Future Energy Ireland. Trevor project managed all aspects of the environmental impact assessment and planning application for the project. As well as this Trevor also lead the environmental coordination and engineering design of all onsite and offsite infrastructure for the proposed development including all infrastructure associated with the wind farm, grid connection and turbine delivery route. The application was successfully submitted to an Bord Pleanála in early 2022 through the strategic infrastructure developments (SID) consents process.

- **Croaghaun Wind Farm, 2021**

Croaghaun is a large scale onshore wind development in Co. Carlow comprising up to 7 wind turbines with a total installed capacity of up to 40MW. FT prepared a planning application and EIAR for the project on behalf of Future Energy Ireland. Trevor project managed all aspects of the environmental impact assessment and planning application for the project. As well as this Trevor also lead the environmental coordination and engineering design of all onsite and offsite infrastructure for the proposed development including all infrastructure associated with the wind farm, grid connection and turbine delivery route. The application was successfully submitted to the local authority in early 2021.

- **Coom Green Energy Park, 2020**

Coom Green Energy Park is a large scale onshore wind and battery storage development in Co. Cork comprising up to 21 wind turbines with a total installed capacity of up to 120MW. FT prepared a planning application and EIAR for the project on behalf of Coillte and Brookfield Renewables Ireland. Trevor project managed all aspects of the environmental impact assessment and planning application for the project and acted as environmental coordinator for the EIA. As well as this Trevor also lead the engineering design of all onsite and offsite infrastructure for the proposed development including all infrastructure associated with the wind farm, grid connection and turbine delivery route. The application was successfully submitted to an Bord Pleanála in early 2020 through the strategic infrastructure developments (SID) consents process.

- **South Kerry Greenway (Kerry County Council) 2019**

South Kerry Greenway (SKG) is a 32km long proposed recreational trail in Co. Kerry. Trevor produced the construction and environmental management plan for the greenway as part of the environmental impact assessment for the project as well as preparing the traffic impact assessment for the project on behalf of Kerry County Council.

- **Teevurcher Windfarm, 2018**

Teevurcher is a development in Co. Meath. FT are acting as designer to the Design and Build contractor, Roadbridge, for the construction of all onsite infrastructure associated with the development. Trevor successfully project managed all aspects of the detailed design for the project, liaising with the main contractor's management and coordinating the design team including the development's environmental design commitments.

- **Moanvane Windfarm, 2017**

Moanvane is a development in Co. Offaly. FT acted as the planning consultant for the client and project supervisor for the design stage of the project. Trevor produced the outline construction and environmental management plan for the site as part of the environmental impact assessment for the project as well as producing the traffic and transportation section of the environmental impact assessment including a traffic impact assessment.

- **Knockacummer Windfarm Grid Connection, 2017**

Knockacummer is a 20km long 110kV grid connection project in Co. Cork for which FT acted as Employer's Engineer for the client. Trevor managed the coordination and supervision of full time site staff throughout the construction stage to ensure that the project was delivered in accordance the engineer's designs and specifications, the client's health and safety framework as well as statutory obligations, and the project's environmental management plan.

- **Gortfinbar Wind Farm, 2016**

Gortfinbar is a 5 no. wind turbine development in Co. Tyrone. FT are acting as designer to the Design and Build contractor, DMKL, for the construction of onsite roads, hardstandings, substation and all other infrastructure associated with the wind farm development. Trevor successfully project managed all aspects of the detailed design for the project, liaising with the main contractor's management and coordinating the design team.

- **Sliabh Bawn Wind Farm, 2016**

Sliabh Bawn is a 20 turbine project in Co. Roscommon. FT acted as designer to the Design and Build contractor, Alexander for the construction of a series of walking trails, riding tracks and recreational areas throughout the wind farm.



Trevor Byrne

Roads and Civil Design Team



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Trevor is managing the design contract on behalf of FT for this project and ensured the project design was delivered in accordance with the engineer's, the client's health and safety framework as well as statutory obligations, and the project's environmental management plan.

- **Moanvane, 2017**

Moanvane is a development in Co. Offaly. FT acted as the planning consultant for the client and project supervisor for the design stage of the project.

Trevor produced the outline construction environmental plan for the site as part of the environmental impact assessment for the project as well as producing the traffic and transportation section of the environmental impact assessment including a traffic impact assessment.

- **Rosspile Solar PV, 2019**

Rosspile is a ca. 75MWp ground mounted solar PV scheme on a site of approximately 153 hectares in County Wexford. The project consists of solar photovoltaic panels on ground mounted steel frames, an electrical control building and associated compound, inverter/transformer stations, underground power and communication cables, boundary fencing, internal access tracks and associated drainage infrastructure, CCTV cameras and all associated site services and works. The project also incorporates significant battery storage on site as part of its design. A Natura Impact Statement accompanied the planning application.

Trevor acted as project manager for this project which successfully achieved planning permission in 2019 and is one of the largest consented projects of its type in Ireland to date. Duties included coordination of all environmental assessments for the project. The comprehensive environmental report included assessments of potential impacts on hydrology, water quality, biodiversity, traffic and transportation, population and human health, cultural heritage, landscape and visual, and glint and glare.

- **Barnahely Battery Energy Storage, 2018**

Barnahely is a battery energy storage system (BESS) project in County Cork. Trevor carried out the outline civil engineering and drainage designs for the site. Trevor also prepared the outline construction and environmental plan for the project along with carrying out the traffic impact assessment.

- **Millvale Solar PV, 2017**

Millvale is a 15MWp solar photovoltaic generation scheme near Rathnew in Co. Wicklow for which FT were appointed by the client, BNRG, to gain planning permission. Trevor project managed the planning application and associated Environmental Report for the proposed Wicklow Solar Farm, including a 38 kV substation and associated ancillary works. Lead contributor to the Environmental Report, and responsible for coordination of overall project team members, including landscape and visual, ecological and archaeological sub-consultants. Responsible for extensive consultation during the planning process, including attendance at meetings with key stakeholders. Millvale was one of the first large scale solar farms commissioned in Ireland under RESS.

- **Ralphtown Solar Farm, Co. Wexford – Planning Application, 2016**

Project Engineer responsible for site layout design for the proposed 16 MW Ralphtown Solar Farm comprising approximately 61,500 photovoltaic (PV) panels on ground mounted steel frames within a site area of approximately 32 hectares. Key contributor to the Environmental Report, and responsible for preparation of the Construction and Environmental Management Plan (CEMP).

- **Brookhill Solar Farm, Co. Wexford – Planning Application, 2016**

Project Engineer responsible for site layout design for the proposed 40 MW Brookhill Solar Farm comprising approximately 154,000 photovoltaic (PV) panels on ground mounted steel frames within a site area of approximately 90 hectares. Key contributor to the Environmental Report, and responsible for preparation of the Construction and Environmental Management Plan (CEMP).

- **Dennistown Solar Farm, Co. Wexford – Planning Application, 2016**

Project Engineer responsible for site layout design for the proposed 20 MW Dennistown Solar Farm comprising approximately 77,000 photovoltaic (PV) panels on ground mounted steel frames within a site area of approximately 40 hectares. Key contributor to the Environmental Report, and responsible for preparation of the Construction and Environmental Management Plan (CEMP).

- **Cairnmore Hybrid Wind and Solar Park, Scotland, 2015**

Cairnmore is a 4MW solar PV park in North Aberdeenshire. The site is located on a farm with a pre-existing wind farm with which the SPV scheme shares a grid connection. Trevor acted as project manager and coordinated the design, construction and procurement of the project on behalf of the client. The scheme was commissioned in early 2016 and is now generating successfully in tandem with the existing wind farm. This was the largest combined technology scale project of its type in Scotland at the time of commissioning.



Trevor Byrne

Roads and Civil Design Team



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- **Cashile, Hydro, 2015**

Cashlie is an estate near the upper end of Glen Lyon in the Perthshire Highlands in Scotland. Trevor successfully project managed the construction of 2no. run of river hydroelectric generation schemes concurrently and the schemes were successfully commissioned in December 2015.

Trevor managed all aspects of the development detailed design and construction stage on behalf of the client as well as compliance with the project's environmental plan and various planning conditions. Challenges included working in remote location in extreme conditions and the use of helicopters for the lifting of construction materials to the intakes.

- **Dow Corning Corporate Campus Storm Water System, USA, 2012**

The project involved the Design and construction of a wastewater system with pumping station for a Fortune 100 client at their corporate headquarters in Michigan. The challenges associate with this project involved the flat topography of the site and phasing the project to facilitate the day to day workings of a busy campus. Trevor acted as a design engineer for the environmental consultant on this project.

- **Dow Corning Silicon Plant, Brazil, 2011**

The project involved the design and construction of a storm water system for a large silicon smelting plant in southern Brazil incorporating green infrastructure engineering for sustainable storm water management.

Trevor acted as a design engineer for the project and made visits to the site for the purposes of project evaluation and inspection of constructed infrastructure.

- **Lefever Landfill, Pennsylvania, USA, 2010-2012**

This project involved civil engineering and design support for a large residual waste disposal landfill for a coal fired power plant. Trevor was the main engineering contact for the site contractor and provided design drawings and specifications for the continuous operational development of the landfill.

- **Red Bird Solar Powered Water Treatment System, USA, 2010-2012**

Worked as a design engineer in the development of a patented solar powered potable water treatment system designed to provide drinking water to remote communities, disaster zones and underdeveloped regions.

Worked closely with a large international manufacturer (Pierce Oshkosh) to construct units which would go on to act as demonstrators in West Africa. Included spending a number of weeks in the factory supervising the construction and testing of two prototype systems. Design input included pressure pipe system, filtration tanks, disinfecting dosing tanks, solar PV and battery power system, bespoke solar PV mounting system design, control system design and testing.

Richard Barker

MLA. BA Env. PG Dip For.
MILI.



Position: Principal Landscape Architect

Qualifications: Irish Landscape Institute Professional Practice Qualification – 2005
MLA – Lincoln University - 2003
PG Diploma Forestry – Canterbury University - 1996
BA Environmental Science – Massey University - 1995

Professional Affiliations: Corporate Member of the Irish Landscape Institute

Professional Experience

Richard formerly worked as a Town Planner in New Zealand, London and Dublin before moving into the field of Landscape Architecture. He has spent the last 18 years working as a Landscape Architect in Ireland and has considerable experience in the fields of both Landscape and Visual Impact Assessment (LVIA) and landscape design, covering all stages from project feasibility through to construction. This cross-over of expertise is invaluable in determining and designing the most appropriate and effective form of landscape and visual mitigation for infrastructural development projects.

Richard is the managing director of Macro Works, overseeing assessment work on a broad spectrum of projects from wind and solar energy, to roads and large-scale industrial and infrastructural development. Richard has personally completed the landscape and visual assessment of over 100 wind farms and a similar number of solar farms including 15 SID projects. Consequently, he has considerable oral hearing expert witness experience. This extends to more than 15 oral hearings with four of these being for large SID wind farm projects.

Richard has presented a number of conference papers relating to sustainable landscape design and LVIA as well as delivering the inaugural workshop on the landscape and visual effects of wind energy developments on behalf of the Irish Wind Energy Association. He has presented a paper to members of the Irish Landscape Institute on the application of the Guidelines for Landscape and Visual Impact Assessment (2013) using a wind energy case study. Richard has also delivered guest lectures to the University College Dublin professional course in EIA Management in relation to LVIA.

Key Projects

Castlebanny Wind Farm	Coillte joint venture	70MW SID wind energy development
Coom Wind Farm	Brookfield / Coillte	135MW SID wind energy development
Barnesmore Repower Wind Farm	SPR	85MW SID wind energy development
Derryadd Wind Farm	Coillte	120MW SID wind energy development
Cluddaun Wind Farm	Coillte	120MW SID wind energy development
Emlagh Wind Farm	Element Power	120MW SID wind energy development
Maighne Wind Farm	Element Power	120MW SID wind energy development
Yellow River Wind Farm	Greenwind	95MW SID wind energy development
Mount Lucas Wind Farm	Bord na Mona	80MW wind energy development
Carrowleagh / Kilbride Wind Farm	John Duffy Assoc.	48.5MW wind energy development
Bruckana Wind Farm	Bord na Mona	45MW wind energy development
Lisheen III Wind Farm	Bord Gais	20MW third phase wind energy development

Feasibility and design optimisation studies for 10+ Offshore wind energy sites

LVIA for 90+ other Wind Energy developments

LVIA for 80+ Solar Energy Proposals



Colum Breslin
Technical Consultant

Discipline: Acoustics

Key Qualifications: Bsc Hons, MSc Environmental Engineering

Professional Memberships: Engineers Ireland, Institute of Acoustics

Experience: 2 years

INTRODUCTION

Colum has recently joined TNEI as a Graduate Technical Consultant. Colum's work concentrates mainly on developing upon his past education and professional experience with acoustics. This has allowed for Colum to be able to focus on the assessing and modelling of noise appraisals. By assessing these noise models through software programs, such as CadnaA and Resoft Windfarm Software, predictions can then be calculated in complex noise environments, such as substations.

KEY EXPERIENCE

- Survey & Site Work
- Noise Modelling and Assessments using specialist noise prediction software
- ETSU-R-97 Noise Assessments
- Wind Turbine Layout Design
- Shadow Flicker Assessments
- Noise and vibration control assessments – BS 4142, BS 8233, BS 5228

EDUCATION AND PROFESSIONAL STATUS

- BSc in Geographical & Environmental Planning, University College Dublin, Dublin.
- MSc in Environmental Engineering, Queens University Belfast, Antrim.
- Currently undertaking the IOA Diploma in Acoustics & Noise at Trinity College Dublin.

EXPERIENCE RECORD

TNEI Services Ltd

03/2021 – present

Technical Consultant

Colum has worked on a number of wind and energy developments projects at TNEI. With Colum being situated in Ireland, Colum represents TNEI at a number of development projects across the island of Ireland. Regularly Colum visits sites for our clients for the setting up of noise monitoring locations and the collection of valuable noise data. Colum uses this data for the completion of a number of noise modelling assessments on solar farms and industrial facilities, utilising the specialist noise prediction software, CadnaA. This will help illustrate various locations that are considered to be noise sensitive areas, and give guidance and what necessary steps are needed to mitigate noise at these locations, such as, increasing the total noise limits.

Colum is proficient in the use of specialist software programs including GIS, CAD, CadnaA and WindFarm, and has undertaken shadow flicker modelling and assessment (including the production of mitigation strategies/shut down logs) for a range of schemes varying in size from single turbine developments to developments of over 50 MW.

Colum's work involves providing technical support for TNEI's Planning & Environmental Engineering team and, as such, is involved in differing projects at any one time – from conventional to renewable and electrical infrastructure. This work has involved the writing up of numerous operational noise reports.

Evolved Energy Solutions Ltd

01/2020 – 03/2021

Acoustic & Energy Engineer

Clongriffin & Marrsfield (2020)

Colum worked on a social housing project for the Iveagh Trust (Guinness Trust). During this project Colum assessed the energy output of domestic dwellings and the level of sound insulation in a number of homes. The reasoning for this was to ensure that the dwellings built were adhering to the Irish Building Regulations, and these assessments would help ensure that these habitats were complying with the requirements set out in each of the relevant Building Regulations.

Queen's University Marine Laboratory

09/2017 – 09/2018

Data Processor

Tidal Turbine Testing Project (2018)

Colum has to monitor the energy performance of two tidal turbines and their interactions with one another through blade movements. Using two ADCP and ADV devices (calculating noise through the Doppler Effect) I recorded the current speeds and all data extracted. Prior to importing data into Matlab I cleaned the raw data through **Excel** to make it compatible with the specific software. I then imported the data into **Matlab** and created programs that analysed the energy performance across the tidal turbines as a whole and the increments across the total wingspan.

These models helped give a greater understanding of what load was needed to be put on the turbine during certain periods of velocity, and what sections of the blades were being influenced by the greatest shear forces.

Tony Cummins BA MA

Senior Archaeologist, John Cronin & Associates

Professional Experience: 24 years

Professional Qualifications

Batchelor Degree (Archaeology) UCC, 1992

Master's Degree (Archaeology), UCC, 1994

Professional Experience

As detailed below, Tony has participated as a project archaeologist on a wide range of Irish wind farm projects during the past two decades. This has included preparing route option studies, impact assessments as well as undertaking field surveys, advance site investigations and supervising construction works. An important element of his input on these projects has been to advise project design teams of potential constraints at the earliest possible stage and to assist during the consultation process with statutory authorities. He has successfully assisted various project teams in developing appropriate archaeological mitigation strategies that are designed to be implemented in a timely and cost-effective manner.

Areas of Expertise

- Licence-eligible archaeologist
- Field surveyor
- Route option and constraint studies
- Environmental Impact Statements and Environmental Reports
- Archaeological Project Manager on large infrastructure schemes
- Liaising with state and local authorities

Professional Experience

An archaeologist with twenty-three years' post-graduate experience, Tony worked with a number of Irish and international archaeological consultancies prior to joining John Cronin & Associates as a Senior Archaeologist in 2009. Following his graduation with a Master's Degree from UCC in 1994, he was employed by the Archaeology Department as an instructor on their annual training excavation where he was responsible for teaching excavation and recording techniques as part of their undergraduate degree course. Tony has been a licence-eligible archaeologist since 1998 and has directed numerous excavations in Ireland as well as participating in archaeological projects in Britain and Lebanon. He has been contributing chapters to Environmental Impact Statements since the 1990s and has accumulated a number of years' experience as archaeological project manager during the construction phase of large infrastructural developments, such as the Limerick Southern Ring Road and the Waterford City Bypass.

Tony has compiled pre-development assessments and overseen construction works on a wide variety of linear infrastructure projects and these include the following examples:

Bunmahon Wind Farm

Tony prepared the EIS Cultural Heritage Chapter for this proposed wind farm development which was based on a desk-top study of relevant sources followed by a programme of field surveys of the subject lands.

Buttevant Wind Farm

Tony directed pre-development test trenching within this wind farm development site in order to comply with planning requirements. The required inputs involved the preparation of licence applications submitted to the National Monuments Service, management of onsite works and the preparation of reports for planning submissions.

Castlepook Wind Farm

John Cronin and Associates were appointed by ESBI to undertake archaeological monitoring of construction works at a wind farm site located within a Coillte forestry plantation in order to comply with planning requirements. Tony was our Project Manager responsible for liaising with ESBI, Coillte and the site contractors to ensure that all archaeological mitigation measures were implemented in a professional and timely manner. This project also included the preparation of an impact assessment of the archaeological resource within the vicinity of the grid connection route.

Kilberherth Windfarm

This project comprised an assessment of the archaeological resource within lands adjacent to the proposed route of a combined cable and overhead line as part of the Kilberherth WF grid connection. This assessment was undertaken as a preliminary screening exercise in order to inform the design team of any potential constraints in the vicinity of the proposed scheme. Tony subsequently oversaw the archaeological monitoring of the construction phase of the wind farm development in order to comply with planning requirements.

Knockacummer Wind Farm

This project involved the preparation of EIS chapter for this wind farm development, including an assessment of potential cumulative impacts along the grid connection route. The assessment identified all known and potential cultural heritage sites within the environs of the development area and recommended appropriate mitigation measures.



Sinéad Lynch

Graduate Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Sinéad is a Graduate Engineer at Fehily Timoney and Company. Sinéad holds a Master’s degree in Civil, Structural and Environmental Engineering from University College Cork.

Sinéad currently works on renewable energy projects preparing chapters of the EIAR for wind farms including traffic and transport, air and climate, telecommunications and aviation chapters. Sinéad also supports the Energy team in preparing feasibility reports and Environmental and Planning Reports for solar farms, and grid infrastructure developments. She also has experience in preliminary drainage design for wind farm and solar farm development. She conducts walkover surveys inspecting environmental constraints on site and carries out site access assessments for several wind and solar farm sites to ensure the desired entrances meet TII guidelines.

Key Skills

Sinéad’s key skills include:

- EIA
- Feasibility Studies
- Site investigations
- Sightline Assessments
- Preliminary Drainage Design
- Preliminary Flood Risk Assessments
- Environmental and Planning Reports

Previous Experience Essentials for this Project

- **Rahanisky Solar Farm, Ongoing**
Rahanisky Solar Farm is a 30MW commercial solar farm development in Co. Cork. Sinéad prepared the hydrology Chapter of the Environmental and Planning Report, carrying out a preliminary flood risk assessment.
- **Milltownpass Wind Farm, Ongoing**
Milltownpass wind farm is a 4 turbine wind energy development located in Co. Westmeath. The development has a total installed capacity of up to 29 MW. Sinéad is preparing the Air & Climate and the Traffic & Transportation Chapters of the EIAR for the wind farm application.
- **Coumragappul Wind Farm, Ongoing**
Coumragappul wind farm is a large scale wind energy development located in Co. Waterford. The wind farm comprises 11 turbines with a total installed capacity of up to 72MW. Sinéad is responsible for various EIAR Chapters including: Scoping, Consultation & Key Issues, Air & Climate, and Telecommunications & Aviation. She is also preparing the Construction and Environmental Management Plan.
- **Rathdrinagh Solar Farm, Ongoing**
Sinéad designed the preliminary drainage design layout for the solar farm development on a site of approximately 150 acres.
- **Castlegarden Wind Farm, Ongoing**
Castlegarden is an onshore wind development in Co. Kilkenny comprising 5 turbines. Sinéad designed the preliminary drainage layout.
- **Barnadivane Wind Farm, 2023**
Barnadivane wind farm is an onshore wind development in Co. Cork comprising 6 turbines and a total installed capacity of approximately 25 MW.

Key Information

Qualifications

Masters (ME),
Civil, Structural &
Environmental Engineering,
University College Cork, 2022

Professional Memberships

Member of the Institution of
Engineers of Ireland (MIEI)

Employment History

September 2022 – Present

Fehily Timoney & Company
Graduate Engineer

2022

MaREI
Research Internship

2021

Fehily Timoney & Company
Intern

2019

University College Cork
Lab Demonstrator

2015

Malachy Walsh & Partners
Work Placement



Sinéad Lynch

Graduate Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Sinéad was responsible for the preparation of the Telecommunications and Aviation EIA Chapter and the Construction and Environmental Management plan.

- **Milltown Solar Farm Extension, 2023**

Sinéad was responsible for analysis of the feasibility of the solar farm development comprising approximately 88 acres. Sinéad carried out a site entrance assessment ensuring compliance with TII standards and conducted a site walk over across the site to identify key constraints and hydrological features. Sinéad also prepared a preliminary flood risk assessment report.

- **Clondardis Solar Farm, 2023**

Sinéad was responsible for analysis of the feasibility of the solar farm development comprising approximately 3 land parcels measuring approximately 319 acres. Sinéad carried out a site entrance assessment ensuring compliance with TII standards and conducted a site walk over across the site to identify key constraints and hydrological features. Sinéad also prepared a preliminary flood risk assessment report.

- **Kilmorna Solar Farm, 2023**

Sinéad was responsible for analysis of the feasibility of developing a solar farm on lands covering approximately 322 acres. Sinéad prepared a preliminary flood risk assessment report.

- **Fahy Beg Wind Farm, 2023**

Fahy Beg is an onshore wind development in Co. Clare comprising 8 turbines and a total installed capacity of up to 38MW. Sinéad assisted with the preparation of a number of the EIA Chapters including: Traffic and Transport, Air and Climate and Telecommunications and Aviation.

- **Annagh Wind Farm, 2022**

Annagh wind farm is an onshore wind development in Co. Cork comprising 6 turbines and a total installed capacity of approximately 37.2 MW. Sinéad was responsible for the preparation of the EIA: Chapter 13 – Traffic and Transport and the Scoping Report.

- **Delgany to Greystones Greenway, 2021**

Sinéad contributed to the preparation of a Feasibility Study for a potential greenway route between Delgany and Greystones in Co. Wicklow. The study looked at National and Local Policy context, land use zonings, Engineering and Environmental constraints, mapped identified constraints, included a high-level cost estimate for the project and recommendations for next steps to progress the project.

Roberto Mione

Senior Project Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Roberto is a Senior Project Engineer at Fehily Timoney and Company working in the Infrastructure Department. He holds a first-class honours Bachelor of Civil Engineering from Università Degli Studi Di Palermo, Italy.

Key Skills

- Drainage Design
- SuDS Assessment and Design
- Flood Risk Assessment and Mitigation Solutions
- Road Design
- Autocad
- Civil 3D

Previous Experience Essentials for this Project

- **Cloonkett Wind farm, 2022**
Surveying, preparation and submission of Hydrology feature Report, Road Drainage Design, SuDS Assessment and Design as Ponds, Swales and Channels. Preparation of the EIA Hydrology Chapter. Preparation of Flood Risk Assessment report.
- **Derrinlough Wind Farm Tender Design Windfarm, 2022**
Preparation and submission of Hydrology feature Report, SuDS Assessment and Design of Ponds, Swales and Channels. Preparation of the EIA Hydrology Chapter. Preparation of Flood Risk Assessment report.
- **Improvement Works to the R639 Cashel Co. Tipperary, 2022**
Senior Project Engineer for the upgrade of the existing R639 Road including improvement of the existing Stormwater network and SuDS Assessment.
- **Fahy Beg Wind Farm, Co. Clare, 2022**
Surveying, preparation and submission of Hydrology feature Report, SuDS Assessment and Design as Ponds, Swales and Channels. Preparation of the EIA Hydrology Chapter. Preparation of Flood Risk Assessment report
- **Coumragappul Wind Farm EIA, 2022.**
Surveying, preparation and submission of Hydrology feature Report, SuDS Assessment and Design of Ponds, Swales and Channels. Preparation of the EIA Hydrology Chapter. Preparation of Flood Risk Assessment report.
- **SHD: Victoria Cross 243 No Bed Student Accommodation, Year 2021**
Preparation and submission of planning applications plus the full Urban Drainage and SuDS infrastructures design for the proposed Student Accommodation in Victoria Cross, Cork. The design is fully approved from the planning phase and include an 47m³ Online/Offline Attenuation/Flooding Tank with no return valve in accordance with Lower Lee (Cork City) Flood Relief Scheme. SuDS and Flood Risk Assessment reports submission. Booster Pump design and test in accordance with Irish Water.

Key Information

Qualifications

Masters of Civil Engineering in Hydraulics, Università Degli Studi Di Palermo, 2017

Erasmus experience at DEC de a Universidade de Coimbra, Portugal, 2016

Bachelor of Civil Engineering, Università Degli Studi Di Palermo, 2014

High School Diploma in Surveying I.T.T.G Mario Rutelli, Palermo, 2010

Professional Memberships

Albo dell' Ordine Degli Ingegneri (Italian Chartered Engineering Qualification)

Employment History

2022 – Present

Fehily Timoney & Company
Senior Project Engineer

2020-2022

JODA Civil Engineering Consultants
Hydraulic/Road Design Civil Engineer

2019 – 2020

MMOS Civil & Structural Consulting Engineers Ltd
Drainage Engineer

2017 – 2019

Myonetech Civil Engineering Consultancy
Graduate Civil Engineer

Roberto Mione

Senior Project Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

- **SHD: Wilton Road, Victoria Cross 255 No Bed Student Accommodation, Year 2022**

Preparation and coordination for lodgement of planning application for a Full Urban Drainage infrastructures design for the proposed Student Accommodation in Victoria Cross, Cork. The design is fully approved from the planning phase and include an 47m³ Online/Offline Attenuation/Flooding Tank with no return valve in accordance with

Lower Lee (Cork City) Flood Relief Scheme. Suds Design which includes Green roofs, Infiltration trenches and Petrol Interceptor. SuDS and Flood Risk Assessment reports submission. Booster Pump design and test in accordance with Irish Water. The application is due to be decided by the end of November 2022.

- **Helms Point, Crosshaven, County Cork. 99 Residential Housing Development, Year 2022**

Project Engineer on Urban Drainage and SuDS infrastructures Design on the proposed Housing development in Helms Point, Crosshaven, Co. Cork. Upgrade of the existing Church bay Road moving along the site to a total length of 200m, design of concrete drainage channel to improve drainage efficiency of the upgraded road. Estimation of volume site works with Civil 3D with Heatmaps representation.

- **Redforge Road, Blackpool, 80 Houses + 1 Creche Development, Year 2020**

Project Engineer for the Urban Drainage and SuDS infrastructures design for 80 Houses plus one Creche in Redforge Road, Blackpool. The development is towards the end of the construction phase.

- **Liffey Valley Phase 2, Dublin, Year 2020**

Project Engineer for the Proposed Urban/Commercial drainage design and design of a 1100 m³ Attenuation Tank with all the related SuDS

- **SHD: Redforge Road, Millfield Service Station, 114 No Apartments, Year 2022**

Project Engineer on Urban Drainage And SuDS infrastructures design for the construction of 114 no. Build to Rent apartments (comprising a mix of 1 and 2 bed apartments) in 2 no. blocks, ranging in height from 4 to 9 storeys with 313 sqm retail unit, residential amenity facilities including a reception, residents' gym, lounge area and shared workspace.

- **Killarney Brewing & Distilling, Year 2020**

- **Courtstown, Little Island, Co. Cork, Residential Development of 168 Houses + 1 Creche, Year 2020**

Project Engineer on Urban Drainage and SuDS infrastructures for the proposed Housing development in Courtstown, Little Island, Co. Cork.



Tom Clayton

Principal Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

Profile

Tom is a Chartered Engineer with a total of 12 years of experience within the geotechnical sector having developed excellent skills in analytical design (including finite element analysis), project and team management. Tom has significant experience designing deep foundations (including deep shafts) in the London area as well as the Middle East and various transport and energy projects within the Irish market.

Tom also specialises in earthwork stabilisation and has worked in asset management and design consultancy roles for both highways and rail projects. More recently, Tom has worked closely with contractors on Design & Build and planning projects throughout the UK and Ireland, including several wind farms, waste facilities and other infrastructure schemes.

H&S

Tom has been responsible for the management of Design Health and Safety at all stages of projects from conception to construction completion both in the UK and Ireland. Tom has overseen Design Stage Health and Safety across different sectors, including ground engineering, roads and rail projects. Tom has undertaken the role of PSDP on a number of projects.

Key Skills

Tom's experience includes:

- Geotechnical Engineering
- Geotechnical Design
- Site Inspections
- Deep Excavations & Underground Structures
- Geotechnical Asset Management & Slope stabilisation

Previous Experience Essentials for This Project

Deep Excavations

- **Thames Tideway Tunnel Tender (West & Central Station) – Ferrovial Laing O'Rourke – January 2014 – April 2014**
Geotechnical Designer producing geotechnical interpretative and tender design notes for Thames Tideway Tunnel West & Central section tender (total value approximately £300M – 500M for each section). Interpretation of ground investigation, production of characteristic design values, designer's risk assessment, preliminary design and input into the contractor's risk analysis. Leading a team of two engineers.
- **STEP Tunnel, Abu Dhabi – Samsung - Jul 2011 – Aug 2011**
Design of circular shafts using Plaxis2D including uplift calculations and consideration of internal water pressure and structures. Mentoring a trainee engineer.
- **Whitechapel Station (Crossrail) – Crossrail - Jan 2010 – Nov 2011**
Undertook geotechnical design on structures at Whitechapel Station. Work included finite element modelling and pseudo finite element modelling of deep box structures constructed using diaphragm walls with incoming and adjacent tunnels, pile design, 2D PFE modelling and design of multi-propped contiguous pile walls and preparation of geotechnical baseline reports.

Key Information

Qualifications

MEng. (Distinction) Civil Engineering,
University of Surrey, 2008

Chartered Engineer (CEng) 2015

Professional Memberships

Institution of Civil Engineers
(Member) 2015

Employment History

2016- Present

Fehily Timoney & Company
Principal Geotechnical Engineer

2008 – 2016

Arcadis UK (Formerly Hyder
Consulting)

2004 – 2008

Hyder Consulting (Undergraduate)



Tom Clayton

Principal Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

- **Botanica Tower, Dubai & Al Quds Tower - Doha Select Group - Sep 2008 – Jan 2010**

Completed a piled raft foundation design for a 40 storey structure in Dubai with 3 basement levels and a 100 storey tower with 5 basement levels and associated podium structures. Tom produced a finite element models (in MidasGTS) of the tower foundations in order to calculate settlement and pile forces and verified the results using several other computer packages.

- **Khatt Hotel, Ras Al Khaimah - Khatt Hotel - Jun 2007 – Aug 2007**

On site as the supervising engineer at the Khatt Hotel, a ground and structural stabilisation project in the United Arab Emirates. Tom's responsibilities included daily supervision of micro-piling and retaining wall construction, monitoring of structural cracks and slope movements and general liaison with the Contractor's engineers on site to ensure compliance with specification

- **Borough Green to Trosley Pipeline Directional Drilling – Sep 2009 – Jan 2010**

Specification and supervision of ground investigation, preparation of a design report including settlement calculations for a directionally drilled pipeline below the M20 motorway in Kent. Liaison with the Highways Agency to ensure approval. Supervision of directional drilling works to ensure specified settlement criteria were met.

Roads

- **Dunkettle Interchange 2018 - Present**

Principal Engineer for the reconfiguration of the Dunkettle Interchange to a free flowing interchange including:

- A series of direct road links between the N8, the N25 and the N40 and links to the R623 Regional Road in Little Island and Burys Bridge in Dunkettle;
- 1 grade separated junction arrangement at the existing N25 to the east of the existing Dunkettle Interchange;
- 4 roundabouts – 2 at the grade separated junction and 2 at tie ins with the existing road network;
- 51 major structures of various forms;
- Several culverts where the scheme crosses watercourses or intertidal area
- Pedestrian and cyclist facilities; and
- Modification of the existing Silversprings junction on the N8 Lower Glanmire Road

- **A737 Dalry Bypass - Farrans-Roadbridge 2017 - Present**

Tom has been responsible for project management of the design of the Dalry Bypass during the latter design phase and through construction to date. He has acted as a geotechnical auditor and internal checker for earthworks packages delivered. Tom also undertook design of a pipeline protection slab related to SGN infrastructure crossing the proposed alignment.

- **Manchester Smart Motorway - Highways England 2013 - 2014**

Completion of a Preliminary Sources Study and detailed design for gantries and retaining structures for a £208M "Smart motorway" scheme on the M60/M62. Leading a team of two graduate engineers and up to three engineers based in India. The role involved the development of characteristic design values, pile group analysis for all gantries and design of retaining structures on sloping ground. Preparation of Design Risk Assessments for all designs.

- **Geotechnical Asset Management Plan – Highways England – November 2011 – October 2013**

Tom completed a full review of the asset inventory in Mac Area 3, prioritised earthwork repairs based on the Value Management Plan, risk profiling and available economic and physical resources and produced a five-year plan for earthwork remedial works across the area.

- **Area 3 Value Management Plan – Highways England – May 2013 – August 2013**

Tom undertook detailed design a sheet pile based widening scheme to facilitate a new slip road at Milton Interchange which was in turn related to a new housing development adjacent to the site. This included the use of retaining wall design software, specification, Designer's risk assessments (in accordance with CDM regulations) and all other documentation for a "For Construction" set of documents.

- **EM47609 – M4 J10 Granular Repair – Highways England**

Project Manager and design lead for a granular repair adjacent to a highway bridge at M4 J10. Tom undertook scoping and management of site investigation, supervision of site clearance and site investigation, undertook the role of Contractor on site from a health and safety perspective. Carried out detailed design and liaised with the site team to ensure compliance with the design.



Tom Clayton
Principal Engineer

Rail

- **Allington – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager for this railway embankment stabilization project in Hampshire, UK. The design utilized sheet piles and retaining walls to provide cess retention and stabilize a slope which had been subject to significant rotational failures and track misalignment. This project was completed through Network Rail's GRIP process from conception to final detailed design.
- **BKE Line – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom used his extensive experience in earthwork slope stability in the London area to develop a set of key indicators for slope instability (including geology, slope geometry, ballast depths, train rough ride reports etc.) and then, using the extensive data available in the Network Rail records, developed a rating system for the BKE line which identified areas of high risk for slope instability. This system was developed using ArcGIS Online and provided Network Rail with realtime access to the information in graphical format as information layers on a map.
- **Bracknell Slope Stability Assessment – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for this slope stability assessment for a failing slope at Bracknell, Berkshire, UK. Tom carried out a visual inspection, scoped ground investigation and undertook monitoring of adjacent drainage and structural assets in order to determine the likely cause of the slope failure.
- **Cess Retention Improvement – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for this report which investigated cess retention measures (including gabions, king post walls, ruglei system, sheet piles etc.) and looked at their advantages and disadvantages. Standard details were also provided.
- **Firwood – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for this slope stabilisation project at Firwood, UK. The project involved the construction of a king post cess retention system to prevent further movement of the tracks due to overfilled ballast. The project was completed from conception to completion on site.
- **Grayswood – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for this slope stabilisation project at Grayswood, Hampshire, UK. The project involved the use of sheet piles and a combined cess / surface water drainage system in order to provide stability for a long stretch of railway which had been the site of several slope failures in recent years. The project was completed from detailed design stage up until completion on site.
- **Liphook Station – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for this slope stabilisation project at Liphook, Hampshire, UK. The project was split into two sections, the first was an emergency works scheme where a temporary bagwork support system was installed prior to a permanent works design consisting of a gabion wall and regrade solution. The project was completed from detailed design stage up until completion on site.
- **Wessex Rapid Response – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager / Lead for the development and management of the Wessex Rapid Response system which involved the generation of standard designs and a rota system for weekend and holiday periods during the winter. Solutions involving gabions, bagwork and sheet piles were proposed and designed for standard situations that could be used in an emergency situation. Tom also administered the rota and responded to emergency schemes during this time. Notable emergency projects included the Liphook Embankment, Botley Embankment Failure and Wrecclesham slope failure.
- **West Clandon – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom was the Project Manager and Geotechnical Design Manager/Lead for this slope failure at West Clandon, Surrey, UK. The project involved the repair of an existing repair which was failing and encroaching on the tracks at West Clandon. The solution involved the use of sheet piles to the rear of the cut and a regrade to the front to ensure a sufficient factor of safety and divert substantial surface flows to a nearby stream. Tom completed this project from initial site visit to completion on site.
- **Withy Beds Feasibility Study – Osborne (Network Rail Framework) – June 2014 – April 2016**
Tom undertook a feasibility study for this 1.5km long site in Surrey, UK which had been subject to multiple slow failures throughout recent times. Tom proposed a set of solutions, including cess retention, soil nailing and sheet piling at different areas depending on local conditions. Tom used GPR to identify the depth of ballast and as an indicator for potential slope stability issues and previous settlement.



Tom Clayton
Principal Engineer

- **Wrecchesham Emergency Works – Osborne (Network Rail Framework) – June 2014 – April 2016**

Tom was the Project Manager and Geotechnical Design Manager / Lead for this emergency works slope failure at Wrecchesham, Hampshire. Tom undertook a site visit, scoped ground investigation and managed the procurement of site investigation. Tom then provided Network Rail with a temporary design and permanent design for the scheme and liaised with Network Rail and the contractor throughout the construction of the temporary design (which consisted of a tied back sheet pile wall with deadman anchors).

Wind

- **Kilgallioch Wind Farm, Farrans, Jun 2017 – Dec 2018**

Tom took over the Project Manager role for this award winning 96 turbine wind farm project in Scotland towards the end of the construction stage and was responsible for closing out as-built drawings. Tom also undertook the role of Geotechnical Design Lead for a replacement turbine foundation at one location and undertook the formation inspection during the construction of this turbine

- **Derrysallagh Wind Farm Substitute Consent – Kilronan Wind Farm Ltd, Jun 2017 – May 2018**

Tom was the Geotechnical / Geology Lead for the preparation of a Soils, Geology and Hydrogeology chapter for a retrospective EIS relating to the construction of an electrical cable route from Derrysallagh Wind Farm to a nearby electrical sub-station. As part of this assessment, Tom undertook a full desk study, site visit and provided an assessment of potential and cumulative impacts of the development (including with the wind farm development itself) and mitigation measures that could be implemented.

- **Gortfinbar Phase 2 – Moriarty Civil Engineering Contractors, September 2016 – May 2017**

Tom acted as Category III checker for a piled turbine base foundation at this Northern Irish Wind Farm. Tom carried out an independent set of calculations and provided comments to the Designer. Tom also provided slope stability assessments for access road rock cuttings.

- **Teevurcher Wind Farm - Roadbridge, October 2016 – May 2017**

Tom was the Lead Geotechnical Designer for this 5 turbine wind farm in Co. Meath and carried out full interpretation of the ground investigation and geotechnical design for all turbine foundations, hardstandings, access roads, substation foundations and met mast. Tom also provided construction stage support, formation inspections and verification of geotechnical testing for all of the above elements

- **Meenwaun Wind Farm - Roadbridge, June 2016 – April 2017**

Tom was the Lead Geotechnical Designer for this 4 turbine wind farm in Co. Offaly and carried out full interpretation of the ground investigation and geotechnical design for all turbine foundations, hardstandings, access roads, substation foundations and met mast. Tom also provided construction stage support, formation inspections and verification of geotechnical testing for all of the above elements.

- **Proposed Wind Farm, Co. Kerry – Joam Consulting Ltd., Oct 2016 – Dec 2016**

Tom was the Project Manager for this peat stability assessment for a proposed wind farm in Co. Kerry. Tom oversaw the conducting of peat probing and field visits to the site and the preparation of a peat stability assessment in line with Scottish guidance on the preparation of Peat Stability Assessments. This project also involved the 3rd party check of a soil, geology and hydrogeology chapter prepared by others.

- **Raragh Wind Farm – Mainstream Renewables, Jul 2016 – Dec 2016**

Tom was the Geotechnical / Geology Lead for the preparation of a Soils, Geology and Hydrogeology chapter for an EIS relating to the construction of an electrical cable route from Raragh Wind Farm to Kingscourt, Co. Cavan. As part of this assessment, Tom undertook a full desk study, site visit and provided an assessment of potential and cumulative impacts of the development (including with the wind farm development itself) and mitigation measures that could be implemented.

- **Proposed Wind Farm, Co. Donegal – Element Power, Oct 2016 – Dec 2016**

Tom was the Geotechnical / Geology Lead for the preparation of a Peat Stability Assessment for an EIS relating to the construction of a Wind Farm in Co. Donegal which was a proposed as an 8 turbine site. Tom oversaw the conducting of peat probing and field visits to the site and the preparation of a peat stability assessment in line with Scottish guidance on the preparation of Peat Stability Assessments



Tom Clayton
Principal Engineer

Contaminated Land and Waste

- **Dublin Airport Environmental Assessment – daa (on behalf of Roadbridge), Mar 2017 – Oct 2018**
Tom has been Project Manager for this environmental investigation project which involved the use of a mix of geophysical and intrusive investigation to map buried waste across a 261-hectare area on the outskirts of the Airport and then the use of environmental sampling to inform disposal and re-use of the materials encountered. Tom led a team including geo-environmental and waste teams and liaised with site investigation contractors.
- **Timoole Landfill Remediation Tender Design – Priority Construction, Dec 2017 – Mar 2018**
Tom has been the Project Manager and Geotechnical Lead for this remediation design for the removal of 40,000+m³ of assorted waste materials from a site in Co. Meath. The project involved use of the Observational Method for the ongoing assessment of slope stability, with mitigation measures including sheet piling and the construction of berms and dewatering trenches included in the design should signs of instability occur.
- **Dublin Airport Stockpile Soil Classification – daa (on behalf of Ramboll), Dec 2017 – Mar 2018**
Tom was the Project Manager for this Soil Classification project relating to 70,000+m³ of mixed stockpiles and made ground at Dublin Airport. Tom undertook the management of environmental engineers, site investigation contractors and laboratories in order to produce a Soil Classification Report as part of the tender for removal and disposal of these soils as waste materials.
- **Newhaggard Soil Classification – Fingal County Council, Nov 2017 – Feb 2018**
Tom was the Project Manager for this Soil Classification project near Lusk, Co. Dublin. 41,000m³ of soil had been deposited previously within the Rogerstown Estuary and the project involved the classification of these soils for re-use, both in terms of contaminants and from a geotechnical point of view. Tom managed sub-contractors to carry out site investigation and staff to prepare a Soil Classification Report.
- **Ballyogan Landfill – Dec 2016 – Dec 2017**
Tom was the Geotechnical Slope Inspector for this landfill, which included a visual inspection of all side slopes and reporting on any slope stability issues to satisfy the EPA waste licence criteria.
- **Balleally Landfill, Dec 2016 – Dec 2017**
Tom was the Geotechnical Slope Inspector for this landfill, which included a visual inspection of all side slopes and reporting on any slope stability issues to satisfy the EPA waste licence criteria.
- **Dunsink Landfill – Dec 2016 – Dec 2017**
Tom was the Geotechnical Slope Inspector for this landfill, which included a visual inspection of all side slopes and reporting on any slope stability issues to satisfy the EPA waste licence criteria.
- **Gortadroma Landfill Slope Stability – Oct 2016 – Oct 2017**
Tom was the Geotechnical Slope Inspector for this landfill, which included a visual inspection of all side slopes and reporting on any slope stability issues to satisfy the EPA waste licence criteria.

H&S

- **Loughshinny Waterbath Upgrades, Ongoing**
Tom is currently undertaking the role of H&S Coordinator for this gas upgrade project.
- **Gormanstown Boiler Upgrades, Ongoing**
Tom is currently undertaking the role of H&S Coordinator for this gas upgrade project.
- **Diswellstown AGI Upgrades, Ongoing**
Tom is currently undertaking the role of H&S Coordinator for this gas upgrade project.
- **Belview AGI Upgrade**
Tom undertook the role of PSDP for the upgrade of this Above Ground Installation (AGI) at Belview, Dublin.
- **Nangor Road AGI Upgrade**
Tom undertook the role of PSDP for the upgrade of this Above Ground Installation (AGI) at Nangor Road, Dublin
- **4Bar in Building Upgrade Programme, Going**
Tom is currently undertaking the role of PSDP for the upgrade of this extensive residential and commercial property gas upgrade programme throughout Ireland.



Tom Clayton

Principal Engineer



CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

- **A737 Dalry Bypass – Farrans Roadbridge, June 2017 - Present**

Tom is currently undertaking the role of Principal Designer during the construction stage of this 4km long new build Bypass in Scotland which includes a multi-span viaduct structure, roundabouts, overbridges, underbridges and other associated highway infrastructure. This role includes liaison with multiple design teams and contractor's temporary works coordinator.

- **Dublin Airport 5H Apron, Ramboll**

Tom undertook the role of PSDP for Fehily Timoney on this extension to the existing apron at Dublin Airport. Tom has liaised with all Designer's at design phase to ensure compliance with the regulations and prepared Preliminary health and safety plans for various works packages.

- **Centre Parcs Feeder Main - Fingleton White**

Tom acted as PSDP for this new gas main linking Center Parcs into the gas grid. The scheme is in multiple phases, with ground investigation phase, 1st phase and 2nd phase being undertaken. Tom's role includes liaison with designers and contractors, attendance at all progress meetings, site visits and other communication required to undertake the role.

- **Ballincollig AGI Upgrade - Fingleton White**

Tom undertook the role of PSDP during the construction phase for the upgrade of this Above Ground Installation (AGI) at Ballincollig, including preparation of the safety file and liaison with the contractor.

Úna Williams

Ecologist and Environmental Scientist

2003-2008 - BA (Moderatorship) Environmental Science (2.1), Trinity College Dublin

2017-2018 – MSc Animal Behaviour and Welfare (1.1), Queen’s University Belfast

Particular Expertise

Úna is an ecologist and environmental scientist that has worked at Malachy Walsh and Partners (MWP) in County Kerry for four years. She has significant consultancy experience working on multi-disciplinary projects and has carried out assessments for a wide range of multi-disciplinary projects including renewable energy developments, and infrastructural and coastal developments, with particular expertise in report-writing. She has produced various ecological and environmental documents such as Screening for Appropriate Assessment Reports (Stage 1), Natura Impact Statements (Stage 2), Ecological Impact Assessments, and Screening for Environmental Impact Assessment Reports.

She is an experienced field ecologist and has carried out a diverse range of ecological surveys including ornithological surveys, habitat-mapping, aquatic ecology surveys, and targeted species surveys for otter, bat, crayfish and badger. She has also carried out field research in Costa Rica and Andalucía and worked for the National Parks and Wildlife Services (NPWS) as part of the Curlew Conservation Programme in the Stack’s Mountains in north County Kerry.

Relevant Employment/Research History

Sept 2019 - Present: Ecologist and Environmental Consultant, Malachy Walsh & Partners, Tralee.
Mar 2019 - Sep 2019: Curlew Conservation Assistant, NPWS, Stack’s Mountains, Co. Kerry.
Aug 2018 - Dec 2018: Research Assistant, Estación Biológica de Doñana, Seville, Andalucía.
Apr 2018 - Aug 2018: Researcher, Reserva Cloudbridge, San Gerardo de Rivas, Costa Rica.

Health and Safety

MWP In-House Safety Procedures.
Valid Solas Safe Pass
Construction Industry Federation (CIF) COVID 19 online inductions

CPD

- Bird survey technique using handheld tablets, 2022 (*in-house training*)
- Pine Marten survey methods, 2022 (*BatAbility*)
- Bat Conservation Ireland 4-module course, 2021 (*Dr Tina Aughney*)
- Irish Raptor Study Group Conference, 2019 (*Irish Raptor Study Group*)

Relevant Experience

Project

Value

Duration

Description

Ballycar Wind Farm, County Clare – Strategic Infrastructure Development

Undisclosed

2020 - Ongoing

Malachy Walsh and Partners are project managing the environmental impact assessment report (EIA) and planning application for this proposed 12-turbine wind farm including management of the consultation process with representatives of An Bord Pleanála. MWP are also responsible for the civil engineering and road design, associated infrastructure and a new grid connection route.

Role

Preparation of Screening for Appropriate Assessment Report, and Natura Impact Statement.

Ecological surveying – habitats, marsh fritillary, ornithology.

Project	Drumnahough Wind Farm, County Donegal
Value	Undisclosed
Duration	2019 - 2022
Description	Malachy Walsh and Partners acted as civil and structural designers for a twelve-turbine wind farm in Co. Donegal with associated infrastructure and grid connection, and an expected yield of approximately 60 MW. MWP were responsible for characteristics including internal road design, drainage design and geotechnical assessments as well as environmental, ecological and planning aspects. Planning was granted in 2022.
Role	Design and completion of Avian Collision Risk Model, and preparation of accompanying Report. Preparation of Chapter 17 of EIAR – Schedule of Environmental Mitigation.
Project	Carrownagowan Wind Farm, County Clare – Strategic Infrastructure Development
Value	€180 million
Duration	2019 – 2021
Description	Malachy Walsh and Partners project managed the environmental impact assessment report (EIAR) and planning application for this 21-turbine wind farm and all ancillary works including underground cables, access tracks and substation. MWP's involvement included the management of the consultation process with representatives of An Bord Pleanála. Planning was granted in September 2022.
Role	Design and completion of Avian Collision Risk Model, and preparation of accompanying Report. Contribution to Biodiversity and Ornithology Chapters of EIAR, and the Natura Impact Statement.
Project	Glamping Development, Clogheen, County Tipperary
Value	Undisclosed
Duration	May 2021 – November 2021
Description	Malachy Walsh and Partners designed eight glamping units/pods and associated infrastructure including a patent onsite wastewater treatment plant, parking area and access road. Planning granted in November 2021.
Role	Project Ecologist: Carried out all ecological surveys including habitat, bird and mammal. Preparation of Screening for Appropriate Assessment Report, and Natura Impact Statement.
Project	Residential Development, Broomhill Road, Tallaght
Value	Undisclosed
Duration	May 2022 - Ongoing
Description	Malachy Walsh and Partners were engaged by the client to complete the ecological and environmental documents to accompany an application for the demolition of existing on-site industrial and commercial buildings within the Broomhill industrial Estate in Tallaght in South County Dublin and the subsequent construction of 242 no. apartment units in 5 no. blocks (Blocks A to E) that range in height from 4 to 7 storeys, in addition to the construction of residential amenity areas, a childcare facility/crèche, communal open spaces, co-working spaces, café, landscaped public spaces, and all associated works and services.
Role	Preparation of a Screening for Environmental Impact Assessment Report, and a 299B Statement in Accordance with Planning and Development Regulations 2001 (as amended).
Project	Coumragappul Wind Farm, County Waterford
Value	Undisclosed
Duration	2021 - Ongoing
Description	Malachy Walsh and Partners were engaged by the client to design and carry out a suite of ornithological surveys at the site of a proposed 10-turbine wind farm in County Waterford, before processing the data and undertaking a Collision Risk Assessment.
Role	Design and completion of Avian Collision Risk Model, and preparation of accompanying Report.



Valerie Heffernan

BSc, MSc Environmental Scientist and GIS Technician

2015 MSc Geographical Information Systems (GIS) and Remote Sensing: UCC
2014 BSc Biological Earth and Environmental Science (Earth Science): UCC

Particular Expertise	Valerie has worked as an environmental professional since graduating in 2015 and has been employed as an Environmental Scientist with MWP since 2018. She has considerable experience in renewable energy developments and has had input in a variety of project including solar farms, marine developments and wind energy. She is experienced in planning and environmental report input and in the preparation of Foreshore Licences.
Employment History	2018 – Present Environmental Scientist, MWP 2016 –2018 GIS Technician, Terra Solar Ltd 2015 –2016 GIS Intern (Statistician Grade), Central Statistics Office
Health and Safety	MWP In-House Safety Procedures. Safe Pass (April 2019)
CPD	Day training course in co-location solar and storage at wind energy developments. Key updates in Environmental & Planning Law Seminar

Relevant Experience

Project	Blackwater Solar, Co Offaly Bord na Móna 2022-2023
Description	Proposed development of a 130MW solar PV farm and a 110kV substation to facilitate grid connection, within a 1,029-hectare site at Blackwater Bog, Co. Offaly. MWP were the lead PM, designer, EIAR, NIS and planning consultants.
Role	Valerie contributed to the Geographical Information Systems including mapping for survey work, Viewshed analysis and report figures.
Project	Drumnahough Windfarm, Co Donegal, SSE Renewables and Coillte 2019-2020
Description	12 turbine windfarm submitted through the Strategic Infrastructure planning process. MWP were the lead PM, designer, EIAR, NIS and planning consultants.
Role	Valerie assisted as point of contact with the client, co-ordinated reports and project submission.
Project	Cordal Windfarm Meterological Mast, Co. Kerry 2019 - 2020
Description	The development will consist of an 83.5m high permanent lattice anemometer (wind measurement) mast, temporary assembly area, use of consented access tracks. MWP completed planning application and drawings for the project.
Role	Valerie acted as point of contact with client, co-ordinated drawings, planning application and project submission to local authority.
Project	Galway Wind park Phase 3, Co. Galway 2019-2020
Description	MWP managed the Environmental Impact Assessment and planning application for this wind farm. The project involved a design review and further civil engineering, road design, and the preparation of a sediment and erosion plan. A full EIS was prepared including an ecological impact assessment, ornithological assessment, habitat directive appropriate assessment, noise, shadow cast analysis and a carbon balanced assessment.
Role	Valerie was the point of contact with client, co-ordinated drawings, planning application and project submission to local authority.

Project	Glenora Windfarm, Co. Mayo 2019-2020
Description	Glenora Wind Farm required a bird surveys for Spring, Summer and Winter months. This required identification of vantage point locations and completion of viewshed analysis.
Role	Valerie completed viewshed analysis using GIS software, to identify optimum vantage point locations. This required DTM data of the area. The viewshed analysis identified five potential vantage point locations and viewshed extent from each location.
Project	Residential Development, Annabella, Mallow, Co. Cork 2021-2022
Description	The Project includes 88 no. residential units, crèche, a pumping station, all associated ancillary development and works including vehicular access, parking, footpaths, foul and storm water drainage, landscaping, and amenity areas. MWP were the lead PM, Screening for EIAR and Screening for Appropriate Assessment.
Role	Valerie completed the screening for Construction Environmental Management Plan (CEMP) for the project.
Project	Residential Development, Annabella, Mallow, Co. Cork 2021-2022
Description	The Project includes 88 no. residential units, crèche, a pumping station, all associated ancillary development and works including vehicular access, parking, footpaths, foul and storm water drainage, landscaping, and amenity areas. MWP were the lead PM, Screening for EIAR and Screening for Appropriate Assessment.
Role	Valerie completed the screening for Construction Environmental Management Plan (CEMP) for the project.
Project	Cockleshell Road – The Spa Greenway, Co. Kerry 2021
Description	The development will consist of construct a 3m wide paved greenway, approximately 2.0 km in length, suitable for off road walking and cycling. MWP were the lead PM, Screening for EIAR and Screening for Appropriate Assessment.
Role	Valerie completed the screening for EIAR for the project.
Project	Castlelake SHD, Carrigtwohill, Co. Cork 2021-2022
Description	Permission for construction of a strategic housing development of 716 no. units and a 2 no. storey crèche. MWP were the lead PM, EIAR and planning consultants.
Role	Valerie completed the Air Quality and Climate Report for the project.
Project	Fenit Diving Board, Co. Kerry 2018-2020
Description	MWP were the project managers, designers and completed NIS. The development will comprise of the modification of existing concrete structures, construction of new diving boards, access platforms, railings and associated services.
Role	Valerie was the point of contact with client, co-ordinated drawings, planning application and project submission to local authority.



Jamie Ball BA – Landscape Architecture MILI	Position:	Senior Landscape Architect
	Professional Experience	
	<p>Jamie is a Senior Landscape Architect and team leader within Macro Works and has been with us since 2017. He undertakes assessments for a wide range of development types across our portfolio. A Dublin-native, he has broad experience from several leading landscape consultancies, both domestic and international (i.e. USA and Australia) and has been involved in a number of high profile projects since graduating with Honours from the University of Gloucestershire in 1998.</p> <p>Jamie has also spent a number of years as an award-winning travel & tourism journalist, endowing him with a unique analytical and writing ability that is critical to high quality LVIA's. For this reason, Jamie also undertakes internal reviews of many of Macro Works LVIA reports.</p>	



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