

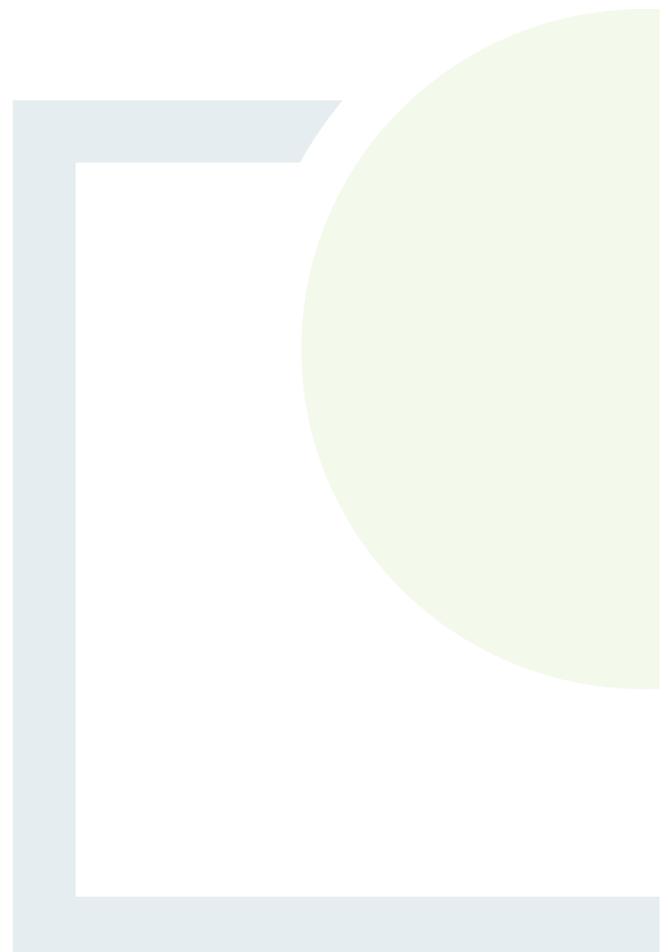


**FEHILY  
TIMONEY**

**CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING**

# **APPENDIX 1.1**

Curricula Vitae





# Conor Crowther

Senior Project Planner



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Conor is a Senior Project Planner with Fehily Timoney and Company and works as part of the Energy and Environment Team.

Conor is an experienced planning professional, and a Spatial Planning graduate of Dublin Institute of Technology and a Coastal & Marine Management masters graduate of the University Centre of the Westfjords/ University of Akureyri, Iceland. Conor is demonstrably skilled at report and policy writing in both an academic and practical capacity, with clearly evidenced ability to effectively manage a variety of topics and workloads. Conor is a fluent Irish speaker, possessing a full clean driving license.

## Key Skills

- Report writing
- Strategic planning advice and inputs
- Project management and delivery
- Policy writing and research

## Project Experience

- **Fehily Timoney and Company**
  - Manage and oversee solar farm related applications, including liaison with the relevant planning authority.
  - Advise on planning-related issues for infrastructural developments.
  - Contribute to and write various chapters of EIARs.
- **AOS Planning (CAAS Ltd.)**
  - Engage and liaise with clients from various sectors regarding planning advice for infrastructural development.
  - Provide high level strategic planning advice on a diverse range of multi-disciplinary projects.
  - Manage and attain planning compliance for infrastructural developments.
  - Manage and help to deliver renewable energy strategies.
  - Participate in and manage tenders for large infrastructural projects.
- **East Suffolk Council**
  - Project management of the Community Infrastructure Levy Spend and a Cross Boundary Water Cycle Study.
  - Policy research and writing for various sections of the Local Plan.
  - Presenting reports to members of Cabinet and the Local Plan Working Group.
  - Participating in stakeholder engagement through 'drop-in' events and 'one-to-one' meetings with Town/Parish Councils and members of the public.
  - Developing the Infrastructure Delivery Framework for the Local Plan.

## Key Information

### Qualifications

Coastal & Marine Management MRM  
(Frist Class Hons.), 2016

Spatial Planning BSc. (Hons.), 2013

### Professional Memberships

Corporate Member of the Irish  
Planning Institute

### Employment History

#### July 2022 — Present

Fehily Timoney and Company, Dublin

#### March 2020 – June 2022

AOS Planning (CAAS Ltd.)

#### Jan. 2017 – Feb. 2020

East Suffolk Council, UK

#### Nov. 2013 – March 2014

Stephen Little & Associates

#### June 2013 – Aug. 2013

An Bord Pleanála  
Internship



# 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 Planner with over 16 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 mixed use schemes and renewable energy projects throughout Ireland. He also has experience in the preparation of retail impact studies, planning appeals, Section 5 declaration applications and zoning submissions. 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. Jim has also experience in delivering seminars to the Financial Sector on planning matters on the importance of protecting the planning asset.

### Key Skills

Jim 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 16 years as an IPI accredited Town Planner
- Acted as expert witness at ABP Oral Hearings and in Judicial Review Hearings and High Court Cases.

### Previous Experience Essentials for This Project

#### 2020

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

### 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

##### 2015- Present

Fehily Timoney & Company  
Associate Director

##### 2007 – 2015

Cunnane Stratton Reynolds (SCR)  
Senior Planner

##### 2004 – 2007

Cork County Council  
Area Planner



# Jim Hughes

Director of Energy & Planning



## 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 advise 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
- 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



## Jim Hughes

Director of Energy & Planning



- 
- 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.



# Jon Kearney

Principal Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Jon is a principal ecologist with over 17 years' experience in both the UK and Ireland. His skills include an extensive knowledge of planning environmental law and planning requirements for ecology and biodiversity. Jon's experience spans ecology survey techniques and methodology, ornithological surveys, mitigation design, water quality assessment, Appropriate Assessment and Ecological Impact Assessment. Jon has completed ecological assessments, EclAs, Environmental Impact Assessment Reports (EIAR) and Appropriate Assessments for a wide variety of projects in Ireland and the UK. Jon has completed ecological assessments, EclAs, and Appropriate Assessments for a wide variety of projects in Ireland and the UK including over 75 wind farms, solar farms, pipelines, road schemes, greenways and commercial developments. He has considerable experience of EIS/EIAR and ecological constraints work, which often includes extensive reference to, and interpretation of, Article 6 of 'The Habitats Directive', and to other EU, UK and Irish conservation legislation.

## Key Skills

Jon has experience in the following:

- planning environmental law and planning requirements for ecology and biodiversity.
- ecology survey techniques and methodology,
- ornithological surveys,
- mitigation design,
- water quality assessment,
- Appropriate Assessment
- Ecological Impact Assessment.

## Previous Experience

- **Upperchurch Wind Farm, Co. Tipperary**  
Jon was the lead ecologist for Upperchurch Wind Farm in Tipperary. He both coordinated and conducted bat, mammal, habitat and ornithological surveys within the study area of the 22 turbine Wind Farm. He prepared the Ecological Impact Assessment, Appropriate Assessment and Ecological Management and Habitat Restoration Plan. Jon was also involved in the consultation process with NPWS.
- **'O Grianna Case' Derragh Wind Farm, Co. Cork**  
Jon was the lead ecologist for Derragh Wind Farm for the most recent application in 2015. The planning for the previous application had been over turned in the high court in the 'O' Grianna Case' due to lack of consideration for the Grid Route. Jon prepared the Natura Impact Statement and Flora and Fauna Chapter of the EIS for the most recent revised application which received planning from An Bord Pleanála.
- **Moanvane Wind Farm, Co. Offaly**  
Moanvane is a 12-turbine project in Co. Offaly. FT are acting as the planning consultant for the client and project supervisor for the design stage of the project. Jon was the lead ecologist for the project coordinating ecological survey for both the wind farm and grid route including ornithological, mammal, habitat, bat, aquatic and botanical survey. He coordinated the consultation process with NPWS and other relevant consultees for ecology. Jon prepared the Natura Impact Statement and Biodiversity chapter of the EIS.
- **Baseline Surveys for bat at 34 Bord na Mona bog sites in the midland, Counties Kildare and Offaly**  
Jon coordinated and conducted a full suite of bat surveys at 34 Bord na Mona bogs in the midlands. A full year of surveys were carried out in 2015 including activity surveys, roost surveys and surveys from height using both automated and manned bat detectors.

## Key Information

### Qualifications

M.Sc. Ecological Management and Biological Conservation, Queens University Belfast, 2005

BSc. Applied Ecology  
University College Cork 2004

### Professional Memberships

MCIEEM Full member of the Institute of Ecology and Environmental Management

### Employment History

#### July 2015- Present

Fehily Timoney & Company  
Principal Environmental Scientist

#### 2010 – 2015

Malachy Walsh and Partners

#### 2009 – 2010

Renewable Energy Systems Ltd.

#### 2007 – 2009

RPS Consulting Engineers

#### 2007

Mott McDonald

#### 2006 – 2007

Mouchel

#### 2005 – 2006

Freelance Ecologist

### Expert Witness

Expert Witness at the following oral hearings:  
Pairc Uí Chaoimh  
Doolin Pier

### Publications

Jon Kearney (2010). Kerry slug (*Geomalacus maculosus*) recorded at Lettercraffroe, Co. Galway. Irish naturalists Journal **31** No. 1 p68 - 69



# Jon Kearney

Principal Ecologist



CONSULTANTS IN ENGINEERING,  
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& PLANNING

- **Knockranny Wind Farm 42MW**

Jon was the lead ecologist for Knockranny. He carried out Ornithological surveys, habitat surveys, bat surveys and Kerry slug surveys within the site and the greater surroundings. He prepared the Ecological Impact Assessment, Appropriate Assessment, Ecological Management and Habitat Restoration Plan and the Haul Route Selection Report. Jon was also involved in the consultation process with NPWS.

- **Athea Wind Park 40MW**

This project, consist of three adjacent wind farms, consists of 20 turbines. A large majority of the site is located within the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (Site Code: 004161). This site and has been designated as a Special protection area (SPA) under the E.U. birds directive of special conservation interest for the hen harrier. Jon was the lead ecologist for Athea. He carried out ornithological surveys, small mammal survey, habitat surveys, vegetative quadrat surveys and bat surveys within the site and the greater surroundings. He prepared several preplanning reports and the ecological monitoring report for 2013. Jon was also involved in the consultation process with NPWS and IFI.

- **Lettercraffroe Wind Farm 24MW**

This project, in two phases, consists of 31 high mast low wind speed 2.5mw turbine generators. Jon was the project ecologist for Lettercraffroe. He carried out ornithological surveys, habitat surveys, bat surveys and Kerry slug surveys within the site and the greater surroundings. He prepared the Ecological Impact Assessment, Appropriate Assessment, Ecological Management and Habitat Restoration Plan and the Haul Route Selection Report. Jon was also involved in the consultation process with NPWS

- **Lenamore Wind Farm, Co. Kerry 24MW**

Jon was the lead ecologist for Lenamore Wind Farm. Jon prepared the Ecological Impact Assessment ecological restoration and management plan for hen harrier and the Appropriate Assessment for the proposed Wind Farm. He carried out ecological field surveys of the entire site including habitat and mammal surveys.

- **Toberatoreen Wind Farm, Co. Kerry 17MW**

Lead Ecologist responsible for the Natura Impact Statement, ornithological surveying, terrestrial and aquatic ecological assessment, EclA and ecological restoration and management plan. Jon was also involved in the consultation process with NPWS and IFI.

- **Ecological Surveys Knockacummer Permanent 110kV Underground Grind Connection**

Lead Ecologist for the project. Reviewed the final report and managed junior ecologists for the ecological surveys

- **Lisheen Wind Farm Phase I Post-Construction Monitoring 54MW**

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. Jon was the project manager for Lisheen Wind Farm Post-construction monitoring. He has carried out vantage point, transect and I-WeBS surveys for birds. Jon is also coordinating fatality searches for both bats species and birds within the site. He is also coordinating the liaison process.

- **Glentane phase II Wind Farm Ecological Clerk of Works water quality monitoring**

Jon carried out weekly audits at the wind farm site during the construction period in relation to sediment and erosion control measures. He also conducted both biological and physio-chemical water quality sampling at sampling stations within the greater catchment area of the wind farm and produce weekly reports for the developer.

Jon has coordinated ornithological surveys at the following (non-exhaustive list of site)

- Waterford Airport
- Dunkettle interchange, Cork City
- Annagh Wind Farm, Co. Cork
- Drehid Wind Farm, Co. Kildare
- Moanaincha Wind Farm, Co. Tipperary
- Barranafaddock Wind Farm, Co. Waterford
- Meenwaun Wind Farm, Co. Offaly
- Raragh Wind Farm, Co. Cavan
- Inchamore and Gortyrhilly Wind Farm, Co. Cork
- Dromada Wind Farm, Co. Limerick
- Carrickeeny Wind Farm, Co. Cork
- Dyrick Hill Wind Farm, Co. Waterford
- Coumnagappul Wind Farm, Co. Waterford
- Croughaun Wind Farm, Co. Carlow
- Bilboa Wind Farm, Co. Carlow
- Castlewaller Wind Farm, Co. Tipperary
- Shonagree Wind Farm, Co. Cork
- Derrycoffey Wind Farm, Co. Offaly
- Goulacullin Wind Farm, Co. Cork
- Gortloughra Wind Farm, Co. Cork



# Jon Kearney

Principal Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
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## Other notable projects

- **Guidance for Public Authorities on the Provision of Article 6(3) and Article 6 (4) of the Habitats Directive**

Public Authorities and AA practitioners require updated guidance on the Article 6(3) and 6(4) to ensure that assessments are robust and legally compliant. The existing national guidance document published in 2009 requires updating and needs to be reviewed to consider requirements due to the evolving case law and to ensure its alignment with European best practice. FT are preparing this updated national guidance document for Appropriate Assessment with NPWS currently. Jon is the Project Manager and lead author for this project.

- **Pairc Ui Chaoimh Redevelopment Cork City**

Lead ecologist for the redevelopment of Pairc Ui Chaoimh. Jon prepared the Flora and Fauna chapter of the EIS and the Natura Impact Statement. Jon was the expert witness for ecology representing the GAA at the subsequent An Bord Pleanála oral hearing following which the project received full planning.

- **Dunkettle Interchange, Client: Sisk Group (2018 – Present)**

Jon is responsible for managing planning conditions and ecology EIA and NIS commitments for the reconfiguration of the Dunkettle Interchange to a free flow 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, 4 roundabouts, 51 major structures of various forms;

- **EIAR for Proposed Development at Knockharley Landfill (2018)**

Jon was responsible for the Biodiversity chapter of the EIAR for a SID development submitted to ABP in December 2018.

- **Thornton's Millennium Park Recycling, Client: Thornton's Recycling (2017)**

Thornton's sought SID permission for a major waste management facility in Dublin. Jon directed preparation of ecology inputs to SID application. Led consultation with NPWS and biodiversity stakeholders. Directed and was responsible for quality assessments of EIS ecology chapters, Natura Impact Statements. Input to project design relating ecology and advised on permission conditions and pre-development compliance.

- **Baile Bhuirne Bypass M22 (Client: NRA)**

Jon conducted extensive ecological surveys as part of route options assessments for the M22 bypass around Baile Bhuirne including Kerry slug, habitat and mammal surveys for badgers, otters, red squirrel, etc.

- **M1/N1 (Drogheda to Newry) (Client: NRA)**

Jon conducted ecological surveys as part of motorway and conducted audit of mitigation measure implemented as part of the planning conditions for the motorway during the construction phase including the provision of mammal fencing and underpasses and as well as landscaping and enhancement planting.

- **Doolin Pier Development, Co. Clare**

A new harbour development comprising of a 103 metre pier new pier structure, revetment, bed rock dredging, access road and associated works at Doolin, Co. Clare. The new facility offered improved access to the Aran Island from the mainland. Jon was the lead ecologist for the EIA. Coordinating and undertaking: Ecological survey (fauna, flora and habitats). Production of an NIS and terrestrial ecology chapter of the EIS. Expert witness at oral hearing for project which received planning

- **Dungarvan Outer Bypass Route Selection Report (Client: NRA)**

The National Roads Authority plan to construct an Outer Bypass of Dungarvan, Co. Waterford. Carried out phase I habitat survey of the entire study area, consisting of a corridor of 200m wide along each Route Option. A protected species survey was also carried out for both flora and fauna along each route option.

- **M8/N8 (Horse and Jockey to Urlingford) (Client: NRA)**

Jon conducted ecological surveys as part of development and conducted audit of mitigation measure implemented as part of the planning conditions for the motorway during the construction phase including the provision of mammal fencing and underpasses and as well as landscaping and enhancement planting.

- **M20 Controlled Motorway - London to Dover Motorway (Client: NRA)**

Carried out protected species surveys for Highways Agency at 23 sites on the M20 Motorway including a full botanical survey of each site. The information was then incorporated into the environmental works information to ensure that environmental legislation was adhered to during works. Protected species identified included dormice, common lizard, slow worm, otter and badger. The role also involved the onsite supervision of works and auditing to ensure that the subcontractor was adhering to mitigations.

- **Glenbeigh to Cahersiveen Greenway, Client: Kerry County Council (2017)**

Kerry Co. Co. propose to construct a walkway/cycleway along a 17km stretch of dismantled railway line. Jon was the project ecologist for the development. He both coordinated and carried out a full suite of ecological studies including ornithological surveys, habitat surveys, bat surveys and Kerry slug surveys along the entire corridor of the route and the greater surroundings. He prepared the Ecological Impact Assessment route selection report and directed the Appropriate Assessment. Jon was also coordinated in the consultation process with NPWS and conservation stakeholders.

- **Cahir Solar Farm, Co. Tipperary**

Jon was the senior ecologist for Cahir Solar Farm. He coordinated the ornithological surveys, habitat surveys, mammal surveys within the site and the greater surroundings. He reviewed and managed the preparation of the Ecological Report, designed the ecological enhancement measures, Appropriate Assessment Screening Report and ecological enhancement measures. Jon was also involved in the consultation process with NPWS.



# Jon Kearney

Principal Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
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- **Carrick Solar Farm, Co. Tipperary**

Jon was the senior ecologist for Carrick Solar Farm. He coordinated the ornithological surveys, habitat surveys, mammal surveys within the site and the greater surroundings. He reviewed and managed the preparation of the Ecological Report, designed the ecological enhancement measures, Appropriate Assessment Screening Report and Natura Impact Statement. Jon was also involved in the consultation process with NPWS.

- **Ballyhale Solar Farm, Co. Kilkenny**

Jon was the senior ecologist for Ballyhale Solar Farm. He carried out Ornithological surveys, habitat surveys, mammal surveys within the site and the greater surroundings. He reviewed and finalised the Ecological Report, designed the ecological enhancement measures, Appropriate Assessment Screening Report and Natura Impact Statement. Jon also coordinated the consultation process with NPWS.

- **Carragraigue Solar Farm, Co. Cork**

Senior ecologist prepared Natura Impact Statement for the Carragraigue Solar Farm, consultation with statutory bodies, designed the ecological enhancement measures and conducted ecological surveys at the site including habitats, mammals, birds and bats.

- **Glenamoy House Solar Farm, Co. Meath**

Senior ecologist prepared the Natura Impact Statement and Ecological Appraisal for the project, coordinated consultation with statutory bodies, designed the ecological enhancement measures for protected species including yellowhammer and conducted ecological surveys at the site including habitats, mammals, birds and bats for the site located near Laytown, Co Meath.

- **Cork Area Strategic Pan Strategic Environmental Assessment (SEA)**

The Cork Area Strategic Plan (CASP), adopted in 2001, provides a framework for the full integration of land use, transportation, social and economic elements for the Cork area up to 2.020. Prepared ecology chapter of the SEA.

- **Strategic Area Plans Cork County**

Prepared the biodiversity, flora and fauna chapter for the Strategic Environmental Assessment for the following towns:

- Macroom
- Clonakilty
- Kinsale
- Skibbereen
- Fermoy
- Mallow

- **Southeast Clare Habitat Mapping**

Carried out phase I habitat survey for Clare County Council of all habitat types within a total study area of 400km<sup>2</sup>. Habitats were classified to level 3 according to a guide to habitats in Ireland (Fossitt, 2000). The information gathered was used to produce a comprehensive habitat map of the region. Among the EU Annex I habitats recorded during the survey was 'depressions on peat substrates of the rhynchosporion (7150)'. This habitat was previously unrecorded within the region and maybe designated as a site of international importance following further investigation.

- **Ardcooney Integrated Tourism Masterplan, Co. Clare**

Fehily Timoney & Company prepared an Integrated Eco-Tourism Masterplan for Ardcooney in County Clare. The masterplan consisted of the development of land along the River Shannon for tourism including a Caravan Area, Mobile Homes, Glamping, Kayak Storage and camping pods. Jon conducted ecological surveys within the study area and prepared a subsequent Stage Two NIS assessing phase of project along with the overall Masterplan for the area which received planning.

- **Ballynora to Lehenaghmore Bord Gais Pipeleine**

Bord Gáis proposed to construct a natural gas pipeline 5.5km in length extending from Ballynora to Lehenaghmore, Co. Cork. A Preliminary Environmental Assessment (PEA) was prepared in order to assess the environmental constraints associated with the proposed pipeline. A desktop review was carried out to identify features of ecological importance within the study area followed by a phase I habitat survey and mammal survey. Prepared flora and fauna chapter of the Environmental report.

- **Doon Post Primary School Badger Derogation Licence, Co. Limerick**

Provided ecological expertise during the construction phase of Doon Post Primary School. Project manager/ecologist coordinating badger mitigation measures. Jon conducted activity study for badgers (14 setts), bats and amphibians. Consultation with NPWS and IFI. Application for wildlife licence and coordinating mitigation measures stipulated in licence including the building of an artificial badger sett, exclusions, hard blocking and sett removal.

- **Poorman's Bridge, County Laois**

Project ecologist conducted ecological surveys for bats, mammals, as well as habitat and aquatic surveys for Annex I habitats, white-clawed crayfish, salmonids and lamprey. The bridge is located upstream of the only population in the world of the Nore Freshwater Pearl Mussel. Prepared Natura Impact Statement and reviewed detailed construction works method for submission to An Bord Pleanala.

- **Delphi Bridge Restoration Works, Co. Mayo**

The role involved the on-site supervision of construction works to ensure that the agreed method statement was being adhered to for this extremely sensitive site. The bridge was situated on the most important river in Ireland for Freshwater Pearl Mussel. The first year of works was cancelled due to a catastrophic flooding event resulting in damage through the movement of and spillage of sandbags downstream into freshwater pearl mussel habitat, and damage to the riparian vegetation, which was not mitigated against at the time.



# Jon Kearney

Principal Ecologist



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Project ecologist for the second year of proposed works (2012) following this event. There was ongoing consultation with directors and regional officers within NPWS and IFI. Jon conducted daily turbidity and water chemical analysis which was reported daily to NPWS, IFI and Mayo County Council.

- **Development of Beamish and Crawford Site, Cork City**

Heineken Ireland Ltd. and BAM applied successfully for planning permission to build a multi-purpose development on the site of the old Beamish and Crawford Brewery on South Main Street, Cork City centre. Jon was the project ecologist for the project. He carried out habitat surveys and bat surveys within this urban site and the greater surroundings. He prepared the Ecological Impact Assessment and Appropriate Assessment. Jon was also involved in the consultation process with NPWS and designed a habitat enhancement plan including the installation of green roof as part of the design of the development

- **GlaxoSmithKlien Coastal Revetment**

Project ecologist for GSK coastal revetment. He conducted ornithological, habitat and protected species surveys at the proposed site. He is also coordinated the liaison process with NPWS, prepared an Appropriate Assessment and successfully completed a derogation license for an otter holt recorded within the footprint of the development.

- **M23 Passive Sign Installation, London**

Project involved the installation of signs along the M23, the main motorway linking London to the south coast of England. A full ecological survey was carried out for 5 sites looking at the presence of protected species and noxious weeds onsite. Prepared a Preliminary Environment Assessment citing possible risks and mitigations for these risks before works could commence. The role also involved the onsite supervision of works, auditing to ensure that the subcontractor was adhering to mitigations and conducting tool-box talks to all on-site personnel.

- **The Highways Agency Japanese Knotweed Management Plan, UK**

Carried out survey for the invasive species Japanese Knotweed for the counties of Kent, Surrey, East Sussex and West Sussex. The information gathered was incorporated into a Management Plan for all Highway Agency land within Southeast England.

- **Daventry Canal Development, UK**

Daventry District Council was developing a new canal arm linking Daventry town centre with the Grand Union Canal about 3 miles to the north. Carried out ecological surveys for mammals (badger, otter and dormouse) and reptiles within the footprint of the development.

- **Aughinish Alumina Ltd. (AAL) BRDA Extension, Co. Limerick**

AAL operate a bauxite refinery plant situated on Aughinish Island, Co. Limerick. Residues from the extraction process are directed to the Bauxite Residue Disposal Area (BRDA). The proposed extension of the BRDA resulted in the loss of three old disused badger setts and one otter holt. The project involved the removal, under licence, of the three disused badger setts. Badger and otter field surveys determined the optimal location for artificial sett/holts. The project involved the constant liaison with statutory bodies to ensure that the client was meeting the requirements specified in the EIS. I designed and supervised the construction of three artificial otter holts and one artificial badger sett.

- **Water Quality Assessment Knockathea & Dromada Wind Farms**

Airtricity proposed to develop two wind farms near Athea village in the west of Co. Limerick. A benthic macro invertebrate survey was carried out within the rivers and invertebrates identified to the taxonomic level required to calculate Q-ratings. A Physico-chemical survey was also carried out at all waterways potentially at risk from the development. A Water Quality Assessment was prepared for the development of two wind farms at Knockathea & Dromada.

## Other Ecological Projects completed by Jon

- Client: Dairygold Ltd. - Dairygold Redevelopment, Co. Cork (2014)
- Client: Louis Keating / Clare County Council - Kilrush Marina redevelopment and dredging, Co. Clare (2012)
- Client: GSK - Various projects including a coastal revetment, and several new buildings within the plant, Co. Cork (2010-2015)
- Client: Fenit Harbour Board - Fenit Marina and Harbour Extension Preliminary Ecological Studies & EIA Screening, Co. Kerry (2011)
- Client: The Department of Arts, Heritage and the Gaeltacht - Clifden and Inishbofin Airport Terminals (2011)
- Client: Kerry County Council - Ballyseedy Woods River Improvement Scheme, Co. Kerry (2011)
- Client: Coolegrean Wind Farm Ltd - Coolegrean Wind Farm, Co. Cork (2014)
- Client: Scartaglen Wind Farm Ltd - Scartaglen Wind Farm Phases I and II, Co. Kerry (2012 -2015)
- Client: Castlegregory golf club - Castlegregory golf course club house (2013)
- Client: Ecopower - Glencarbry Wind Farm, Co. Tipperary
- Client: Ecopower - Boolabrien Wind Farm, Co. Waterford
- Client: Ecopower - Knocknamona Wind Farm, Co. Waterford
- Client: Ecopower - Derrynadivva Wind Farm, Co. Mayo
- Client: Ecopower - Killavoy Wind Farm, Co. Cork
- Client: Met Eireann – Valentia Met Eireann Air Monitoring Facility
- Client: Longford County Council – Four bridge restoration projects, Co. Longford
- Client: Kerry County Council – N70 Kilderry Road, Co. Kerry
- Client: ACARD Ltd. – Cahersiveen to Reenard Point Walkway, Co. Kerry



# Jon Kearney

Principal Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

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## Key skills and experience

- Have applied for, conducted surveys and supervised construction work under the terms of and completed final reports for several derogation licences for bats, badger, otter, pygmy shrew, electrofishing, reptiles, water vole, dormouse and Kerry slug.
- Expert Witness (Project Ecologist): at three An Bord Pleanála Oral Hearings, Cluddaun Wind Farm (Mayo), Pairc Ui Chaoimh (Cork) and Doolin Pier (Clare)
- Phase I habitat surveys, Fossitt (2000), vantage point survey (birds), transect surveys (birds), point count (birds), AnaBat (Bats), Q sampling (kick samples), White clawed crayfish surveys, electrofishing, mammal surveys (Longworth traps, field surveys, dormouse tubes, motion detection cameras).



# 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 Ecological Appraisals, AA Screening Reports, and Ecological Enhancement Plans.

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 (Ecological Impact Assessment, AA Screening & Stage 2 Natura Impact Statement)
- Derogation Licence applications

### Project Experience

#### 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
- **Habitat Surveys**
  - Survey of peatlands for a proposed windfarm site in Co. Tipperary. Associated relevé surveys of potential Annex I habitats
  - 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

### Key Information

#### Qualifications

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

BSc. Ecology, University College Cork, 2017

#### Employment History

##### 2021 - Present

Fehily Timoney and Company  
Project Ecologist

##### 2019 - 2021

Inís Environmental Consultants  
Ecologist

##### 2019

Ecus Ltd.  
Seasonal Ecologist



## David Daly

Project Ecologist

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 survey 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 consented 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.

### 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.



# Chandra Walter

Project Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Chandra holds a BSc in Ecology and an MSc in Organic Horticulture, both degrees were awarded with Honors by University College Cork.

Chandra is a dedicated ecologist, with excellent report writing and data management skill. She is skilled with QGIS and SPSS statistics. Chandra has good plant and insect identification skills, particularly for pollinators and freshwater macro-invertebrates.

Chandra is experienced in both terrestrial and freshwater ecology.

## Key Skills

- Data Management in Excel
- Habitat surveys
- Bat activity surveys
- Freshwater Macro-invertebrate surveys
- Pollinator surveys, focused on Hymenoptera, Lepidoptera and Syrphidae
- Mapping in QGIS
- Statistics – SPSS
- Preliminary Ecological Appraisal
- Appropriate Assessment
- Ecological Impact Assessment

## Previous Experience Essentials for this Project

- **Graduate Ecologist at Fehily Timoney 2021-Present**  
Chandra has been working on several wind and solar farm projects, as well as on numerous civil and commercial infrastructure projects. Her role involves surveying, data management, mapping and report writing.
- **Garryinch Wind Farm (Bord na Móna) (ongoing)**  
Bat activity survey required for the Strategic Infrastructure Development application to An Bord Pleanála for a proposed wind farm comprising up to 12 turbines in counties Laois and Offaly.
- **Dunkettle Interchange (TII)**  
Breeding survey for Grey Heron and Little Egret as part of the ecological mitigation requirement for a large road project. This project involves 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.

## Key Information

### Qualifications

MSc Organic Horticulture,  
University College Cork,  
2017

BSc Ecology,  
University College Cork,  
2014

### Employment History

#### 2021 – Present

Fehily Timoney & Company  
Graduate Ecologist – Energy &  
Planning Team

#### 2019 – 2021

German speaking technical support at  
Telus International

#### 2018 – 2019

Environmental Lab Technician and  
Ecological Fresh Water surveyor



# Chandra Walter

Project Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

- **Cork Bridge Rehabilitation, Cork, Ireland / Cork County Council (2016 – 2022)**  
Bat emergence survey at a Bridge near Dunmanway as part of ecological mitigation for the repair of approximately 50 road bridges located around the Cork region. Development of an Invasive species management plan for repair works to a bridge in Co. Cork. The list of structures included predominately masonry structures dating from the 13th to 19th centuries, including a number of protected structures.
- **Littleton Wind Farm (Bord na Móna) (ongoing)**  
Management of bird data for a large wind project across bogland in Co. Tipperary. Bat activity surveys required for the planning application for a proposed wind farm comprising up to 12 turbines.
- **Fahybeg Wind Farm (RWE) (ongoing)**  
Survey of oak woodland to find preferred suitable route for access road. Other surveys at this site included mammal surveys, invasive species surveys, habitat assessment and bat roost assessment along the proposed cable route.
- **Maynooth rotating stabilizers (Statkraft) (2021)**  
Preparation of the Ecological impact section for an NIS for the proposed development of a synchronous compensator and ancillary equipment at Maynooth Co. Kildare. Challenges included a hydrological link that was identified to the Rye Water Valley/Cartron SAC.
- **Acorn Water, 2018 — 2019**  
Chandra was a freshwater macro-invertebrate surveyor, responsible for evaluating long term water quality around dairy plant discharge sites which are under license from the EPA. Chandra also had responsibilities as a lab technician, analysing private and industrial water samples for biological and chemical parameters, and involved in developing quality control procedures for lab procedures and water samples.



# Kate Mahony

Project Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Kate holds a degree and a PhD in Zoology from University College Cork and an MSc in Marine Biology.

Kate is a dedicated ecologist, with excellent project management skills as evidenced by completion of her PhD in three years. She has skills in data analysis, stakeholder engagement, statistics, mapping and EU legislation, which have been strengthened through collaborative research and employment. She is utilising her data skills by incorporating the R programming language into FT processes.

Kate is experienced in both terrestrial and marine ecology, with particular expertise in intertidal and estuarine ecology. Since starting at FT, Kate has gained experience in a variety of ecological skills, including Appropriate Assessment Screening reports, EclA reports, Invasive Species Management Plans, Habitat Management Plans and detailed Ornithology report. She has conducted habitat surveys, bat surveys, bird VP surveys and mammal surveys in a range of habitats including peatland, woodland, grassland and rivers.

Kate's work at FT focusses on wind and solar energy developments, in addition to landfill remediation, residential developments and infrastructure projects.

## Key Skills

- Report writing
- Ecological Impact Assessment
- AA Screening and Natura Impact Statement
- Ornithology Reports
- Bat surveys (Bat detectors and software analysis)
- Data Management and Statistics
- Data Visualisation
- Mapping (ArcGIS, QGIS, mapping through R)
- Risk Assessment
- Statistics
- Habitat and botany surveys
- Vantage Point surveys
- Invasive species surveys
- Project Management

## Project Experience

### Wind Energy

- **Garryhinch Wind Farm, 2022-Ongoing:** Hen harrier roost survey, bat activity and static surveys
- **Fahy Beg Wind Farm, 2022-Ongoing:** Mammal surveys
- **Annagh Wind Farm, 2021:** Habitat and Species Management Plan, Invasive Species Management Plan,
- **Shelmalere Offshore Wind Farm, 2021-Ongoing:** Habitat and mammal surveys of potential landfall sites, GIS

## Key Information

### Qualifications

PhD Zoology,  
University College Cork,  
2021

MSc Marine Biology,  
University College Cork,  
2017

BSc Zoology,  
University College Cork,  
2016

### Professional Memberships

CIEEM Qualifying Member

### Employment History

#### 2022 – Present

Fehily Timoney & Company  
Project Ecologist – Energy & Planning  
Team

#### 2021 – 2022

Fehily Timoney & Company  
Graduate Ecologist – Energy &  
Planning Team

#### 2019 – 2021

University College Cork  
Researcher

#### 2017 – 2018

Dairy Concepts Ireland  
Technical Assistant



# Kate Mahony

## Project Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

- **Moanvane Wind Farm, 2022-Ongoing:** Mammal surveys, GIS
- **Bilboa Wind Farm 2021-Ongoing:** Contributed to Invasive Species and Habitat/Species Management Plans, bat activity and static surveys
- **Gortloughra Wind Farm, 2021-Ongoing:** Bat activity and static surveys, flightline digitization and GIS
- **Castlegarden Wind Farm, 2022-Ongoing:** Habitat and invasive species surveys of the grid route and turbine delivery route
- **Confidential Wind Farm Project, Co. Cork, 2021-Ongoing:** Bat static detector surveys
- **Derryadd Wind Farm, 2021:** Winter vantage point surveys, flightline digitization and GIS
- **Confidential Wind Farm Project, Co. Carlow, 2021-Ongoing:** Ornithology data management, mapping and reporting. Producing monthly update reports.
- **Confidential Wind Farm, Co. Cork, 201-Ongoing:** Flightline digitization and GIS, activity and static bat surveys
- **Drehid Wind Farm, 2021-Ongoing:** Cable route habitat surveys, bat static detector surveys
- **Confidential Wind Farm, Co. Laois, 2021-Ongoing:** Ornithology data management, flightline digitisation and GIS, reporting.
- **Littleton Windfarm, 2021-Ongoing:** Relevé surveys, flightline digitisation and GIS, ecological input to site layout, bat activity and static surveys
- **Dyrick Hill Windfarm, 2021-Ongoing:** Ornithology data management, flightline digitisation and GIS, reporting, bat static detector surveys
- **Milltownpass Wind Farm, 2021-Ongoing:** Habitat surveys, GIS, bat static and activity surveys

### Solar Energy Projects

- **Confidential Solar Farm, Co. Galway, 2021:** Desktop study, ecology technical note
- **Confidential Solar Farm, Co. Kerry, 2021:** Site walkover for Stage II feasibility study
- **Confidential Solar Farm, Co. Galway, 2022:** Ecology walkover and technical report for Stage II feasibility study
- **Confidential Solar Farm, Co. Kerry, 2022-Ongoing:** EclA, Appropriate Assessment Screening Report, NIS, input to site design

### Waste

- **Piggery Remediation, 2022-Ongoing:** Site walkover, Appropriate Assessment Screening Report
- **Ballymaurice Historic Landfill Remediation, 2022-Ongoing:** Site walkover, Appropriate Assessment Screening Report
- **Various Historic Landfills, 2021-2022:** Invasive species Management Plans, flightline digitisation and GIS, invasive species surveys, bat static and activity survey
- **Claremorris Historic Landfill, 2022:** Ecological walkover, Invasive Species Management Plan, NIS

### Miscellaneous

- **Development at Confidential Manufacturing Facility, 2022-Ongoing:** Desktop study, Appropriate Assessment Screening Report
- **Bridges, 2022:** EclA, habitat and mammal surveys, AA screening reports, NIS
- **Mixed Use/Residential Development, Co. Westmeath, 2021:** Ecological walkover, AA/NIS reports.

## Previous Experience Essentials for this Project

- **Researcher, University College Cork, 2019-2021**

Kate was a Researcher responsible for conducting desk-based assessments, laboratory work, field work and data analysis to investigate the health, reproduction and growth of shellfish across Europe (COCKLES Project).

She was responsible for leading peer reviewed papers and collaborative reports with recommendations for fisheries, aimed at a variety of stakeholders including science, industry and the public.



# Kate Mahony

Project Ecologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

Kate also disseminated project outputs through a range of media, including radio, television, print, conferences, infographics and social media.

She facilitated supervision and training of international researchers and students, allowing for timely delivery of project outputs.

Kate has strong project management skills, including time management, delegation, document control and decision making, resulting in the successful completion of all project work packages.

- **Dairy Concepts Ireland, 2017 – 2018**

Kate was a Technical Assistant responsible for optimising plant facilities, packaging and product flavouring resulting in the successful initial launch of a novel dairy product to Irish supermarkets.

She was responsible for liaising with service providers, preparation of manufacturing and safety procedures, and administrative work facilitated the successful completion of a BRC Food Safety Audit.

# Aidan Duggan

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The Farmhouse, Dooniskey, Lissarda, Co Cork. P14Y221

**Email:** [aduggan272@gmail.com](mailto:aduggan272@gmail.com) **Mobile:** 087 2351240

D.O.B. 29/12/1968

## WORK EXPERIENCE

### Field Work Projects from 2006 to present. -

Clients:

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

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

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

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

Art Generation Ltd, Tullaroan, Co Kilkenny.

Survey Projects:

Hen Harrier 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. Bird Survey of proposed routes for power grid and gas pipeline.

Bat Surveys. Dragonfly & Damselfly Surveys. Butterfly & Moth Survey

### Additional Information

**From 1999 to 2004** I 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*.

In 2018 I set up my own company – Duggan Surveys Ltd specialising in bird surveys.

I have professional Indemnity Insurance and Public Liability Insurance. I hold a current Safe Pass card.

## Karen Banks

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

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### 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.

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### 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)
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### 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).

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### **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)

# CV Pascal Sweeney



Following completion of an honours B.Sc. degree, majoring in zoology, Pascal Sweeney's professional ecological experience commenced with the biological and chemical monitoring of the Killarney Lakes, on contract to the National Board for Science and Technology. A break from ecological work due to economic necessity in the 1980's allowed the opportunity to develop business and interpersonal skills in the pharmaceutical industry, while continuing biological recording. Following re-entry professionally to the ecological field in 1994, Pascal quickly re-established his expertise in freshwater ecology. While building his business, Sweeney Consultancy, Pascal completed a research M.Sc. thesis on aquatic invertebrate ecology in the Killarney Lakes.

Approval as an Environmental REPS Planner, a Commonage Framework Planner, NPWS Farm Planner and a Participating Ecologist in the Native Woodland Scheme enhanced Pascal's skills in terrestrial botany and ecology.

In recent years, the bulk of Pascal's work has been in the areas of Biological Water Quality Assessments (Q-value; SSRS), Appropriate Assessment reporting for projects potentially affecting aquatic SACs or SPAs, Aquatic Invertebrate Identification, Protected Species Surveys and Ecological Impact Assessment for Local Authorities, Environmental Protection Agency, Northern Ireland Environment Agency, National Parks and Wildlife Service, Inland Fisheries Ireland, Coillte, industries in the agricultural, food, drink and mining sectors, as well as many Appropriate Assessment reports for private planning applications.

<b>Position</b>	<ul style="list-style-type: none"> <li>▪ <b>Managing Director &amp; Senior Ecologist, Sweeney Consultancy</b></li> </ul>
<b>Educational &amp; Professional Qualifications and Membership of Organisations</b>	<ul style="list-style-type: none"> <li>▪ B.Sc. (Hons., 2.1). UCD. 1977</li> <li>▪ M.Sc. by research thesis in ecology. UCC. 2000</li> <li>▪ Member of the Chartered Institute of Ecology and Environmental Management (Secretary of Irish Section from 2005 to 2008)</li> <li>▪ Member of the Freshwater Biological Association</li> <li>▪ Member of the Botanical Society of Britain and Ireland.</li> <li>▪ Member of the Organising Committee of the Annual Meeting of Irish Freshwater Biologists.</li> <li>▪ National Biodiversity Data Centre Database Manager for Aquatic Oligochaetes.</li> </ul>
<b>Years Experience</b>	<ul style="list-style-type: none"> <li>▪ 1977-2018</li> </ul>
<b>Details of Main Projects Undertaken</b>	<p><b>Biological Water Quality Assessments</b></p> <p>Irish Water. SSRS assessments upstream and downstream of the discharges from 24 Wastewater Treatment Plants (66 assessments in total) (2017).</p> <p>EPA: Q-value assessments at the 93 river monitoring stations in Hydrometric Areas 25 &amp; 26 (Lower Shannon) for the EPA 3-yearly monitoring programme (2018).</p> <p>EPA: Q-value assessments at the 139 river monitoring stations in Hydrometric Area 16 (Tipperary, Waterford, Kilkenny) for the EPA 3-yearly monitoring programme (2017).</p> <p>EPA: Q-value assessments at the 214 river monitoring stations in Hydrometric Areas 12, 14 and 15 (Wexford, Carlow, Wicklow, Kilkenny, Laois) for the EPA 3-yearly monitoring programme (2016).</p> <p>EPA: Q-value assessments at the 273 river monitoring stations in Hydrometric Areas 18, 29 and 35 (Cork, Waterford, Galway, Sligo, Leitrim, Donegal) for the EPA 3-yearly monitoring programme (2015).</p> <p>EPA: Q-value assessments at the 244 river monitoring stations in Hydrometric Areas 8, 14 and 16 (Dublin, Meath, Limerick, Tipperary, Waterford, Kilkenny, Carlow) for the EPA 3-yearly monitoring programme (2014).</p>

EPA: Q-value assessments at the 161 river monitoring stations in Hydrometric Areas 11, 12 and 13 (Wexford, Carlow, Wicklow) for the EPA 3-yearly monitoring programme (2013).

EPA: Q-value assessments at 135 of the river monitoring stations in Hydrometric Areas 22, 25, 26 and 35 (Kerry, Clare, Sligo) for the EPA 3-yearly monitoring programme (2012).

Kildare Co. Co./Irish Water: Twice-yearly Q-value assessments and invertebrate biodiversity at two sites in the River Barrow for Athy WWTP discharge monitoring. (2008 – 2016)

Lisheen Mine: Three-times yearly monitoring of Q-values at 3 sites and macrophyte MTR at 2 sites in the River Drish for waste licence (2004 – present).

Glanbia plc.: Yearly monitoring of Q-values and invertebrate biodiversity at 6 sites in the River Nore at Ballyragget, for waste licence (1997 – present).

Irish Distillers Ltd.: Yearly monitoring of Q-values and invertebrate biodiversity at 2 sites in a tributary of the Dungourney River, for discharge licence (2014 – present).

Waterford City Council: Yearly biological water quality assessment (Q-value, SSRS, BMWP) at 7 sites on the St. John's River Catchment (2009 – 2012)

Irish Sugar plc.: Yearly monitoring of Q-values at 5 sites in the River Barrow at Carlow, for waste discharge monitoring (2001 – 2008).

Wexford C.C.: Yearly Q-value assessments of 13 streams in Our Lady's Island Lake catchment (2004 – 2006).

North Tipperary C.C.: Q-value assessment of 47 river sites in the years that these sites were not assessed by the EPA (2001 – 2005).

EPA/Central Fisheries Board: Biological water quality assessment of rivers and streams in the Laune catchment as part of a project to determine the relationship between salmonid populations and Q-values (2003).

DOE, South Tipperary C.C., Cork C.C., Waterford C.C. and Kilkenny C.C.: Biological monitoring for The Three Rivers Project. Monitoring of invertebrates, macrophytes and fish in the River Suir catchment (1999-2001).

Ecological Assessment of Irish Lakes Project: Development of a new methodology suited to the needs of the EU directive for surface waters. Responsible for the processing of 380 profundal invertebrate samples and 125 littoral invertebrate samples. Collaborated in the analysis of chemical and biological data. For this project Pascal Sweeney was involved in a consortium with Trinity College and Conservation Services. (1996 – 2001)

#### **Licensed Species Surveys**

##### Freshwater Pearl Mussel (*Margaritifera margaritifera*)

Pascal Sweeney holds an annual freshwater pearl mussel survey licence for the state.

Atkins Engineering: Survey at and downstream of four bridges planned for repair in Counties Cork, Waterford and Tipperary. (2018).

IFI: Survey downstream of Donard Ford (2018).

IFI/Carlow C.C.: Survey of Mountain River downstream of proposed bridge works. (2018).

Carlow C.C.: Survey of Derreen River in the vicinity of Acaun Bridge prior to repair works. (2017).

Carlow C.C.: Survey of Derreen River in the vicinity of Spearpoint Bridge prior to repair works. (2017).

IFI: Survey of 3.5km of the River Blackwater downstream of Clondulane Weir. (2016).

Cork C.C.: Survey at and downstream of ten bridges planned for repair. (2015).

Carlow C.C.: Survey of 1km of the R. Slaney downstream of Rathvilly WTP intake. (2015).

Dan Twomey Hydropower Engineering Ltd.: Survey of 2km of Owennafeanna R. downstream of proposed hydropower turbine. (2015)

IFI/Carlow C.C.: Survey of Mountain River downstream of proposed bridge works. (2014).

Cork C.C.: Survey of Munster Blackwater downstream of proposed pipeline crossing at Mallow. (2014).

Carlow C.C.: Survey of Derreen River in the vicinity of proposed bridge works. (2014).

Coillte: Survey of two streams on the Galtee Mountains. (2014).

OPW: Survey of 7km of the Creagh River for freshwater pearl mussel prior to dredging. (2013)

OPW EREP Scheme: Survey of 5km of the River Moy for freshwater pearl mussel in respect of proposed river enhancement works for salmonids. (2012).

Carlow C.C.: Survey of 5km of the R. Slaney downstream of proposed hydrometric weir at Rathvilly. (2012).

Clonmel Tourism Fishery Improvement Works: Survey of 10km of the Rivers Tar and Duag in respect of proposed fisheries improvement works. (2012).

Cork C.C.: Survey of the Munster Blackwater and translocation of pearl mussels at the site of proposed bridge works (Charles Bridge). (2011-2012)

Cork C.C.: Survey of the Munster Blackwater at and downstream of proposed Fermoy flood relief works. (2011)

NRA: Survey of two small tributaries of the Munster Blackwater, where bridge works were proposed. (2011).

#### White-Clawed Crayfish (*Austropotamobius pallipes*)

Pascal Sweeney holds an annual crayfish survey licence for the state.

South Dublin CC.: Survey of 11 sites on the River Camac (2018).

Maigue Trust: Survey of 30 sites in the River Maigue catchment (2018).

Hydrometric Area 16: 139 EPA sites surveyed to establish crayfish data following outbreak of crayfish plague in the lower catchment. Data to IFI and NPWS (2017).

Carlow CC: Survey of crayfish at Burrin Bridge, Carlow Town, prior to silt removal (2017).

Tipperary C.C.: Survey of Clodiagh River in the vicinity of Shanahan's Bridge prior to repair works. (2017).

Tipperary C.C.: Survey in the vicinity of the old bridge in Carrick-on Suir. (2016)

Carlow CC: Survey of crayfish at Hanover Weir on the River Burrin, prior to repair works (2017).

IFI: Survey of the R. Nore at Castletown Weir for the translocation of crayfish at the site of proposed fish-pass. (2015)

Research: Survey of Munster Blackwater to examine the extent of a recent expansion of the range of crayfish. (2015)

Tipperary C.C.: Survey of the Clodiagh River and translocation of crayfish at the site of proposed bridge works. (2014)

Barrow Drainage Board: Survey of crayfish in the River Barrow at the site of proposed bridge works. (2014)

OPW: Survey of the Awbeg River and translocation of crayfish prior to and during dredging works in Doneraile Park. (2013)

Tipperary C.C.: Survey of the River Suir in the vicinity of bridge works at Thurles. (2013)

Tipperary C.C.: Survey of Lismacrory Stream prior to drainage works. (2013)

Burrin Drainage Board: Survey of 14 stretches of the River Burrin prior to drainage works. (2013)

Carlow C.C.: Translocation of crayfish at three bank works sites in the River Barrow catchment. (2013)

Clonmel Regional Water Supply Scheme: Surveys of crayfish population in the River Suir at and downstream of proposed water abstraction and pipeline crossing points (2010 & 2013).

Irish Sugar, Carlow: Surveys of crayfish population in the River Barrow downstream of discharge point (2007 & 2008).

NRA M7/M8 road scheme: Pre-construction survey of crayfish population at and downstream of 10 sections of stream/river in the R. Nore catchment, potentially affected by the road construction works (2006)

#### **Other Aquatic Assessments and Investigations**

Coillte: Ecological assessments, including surveys of fish populations, of two streams on the Galtee Mountains on which hydropower stations were proposed (2014)

EPA: RHAT assessments at 14 stations in Hydrometric Areas 8, 14 and 16 for the monitoring programme (2014).

Coillte: Ecological assessments, including a survey of fish stocks, of Curraghchase Lake, Co. Limerick, prior to maintenance work (2013-2014)

Office of Public Works: Environmental consultancy services for the arterial drainage maintenance service 2013: Walkover survey of 59km of channels along the Lower Shannon Estuary in Counties Clare and Limerick and assessment of aquatic and riparian habitat (2013).

Waterways Ireland Grand Canal Ecological Assessment. Aquatic and riparian habitat survey of 25km of the Grand Canal in Co. Offaly (2013).

EPA: RHAT assessments at 21 stations in Hydrometric Areas 11, 12 and 13 for the monitoring programme (2013).

EPA: RHAT assessments at 10 stations in Hydrometric Areas 25 and 35 for the monitoring programme (2012).

Rathvilly Hydrometric Weir: Survey of 5km of river corridor habitat along the R. Slaney downstream of the proposed location of a hydrometric weir at Rathvilly. Survey of aquatic habitat suitability for protected species. Riparian survey for otter and kingfisher. (2012).

National Parks and Wildlife Service: Survey of habitat and Natterjack toad populations at 147

pond/lake sites in Kerry. (2011-2012)

Clonmel Regional Water Supply Scheme: Assessment of habitat quality and protected species at and downstream of a proposed water abstraction point and pipeline crossings in the R. Suir SAC. (2011)

Glanbia plc.: Yearly monitoring of invertebrate communities in proximity to a discharge to Lough Ramor. (2002 – 2011)

NPWS: Rapporteur of the Owenriff Working Group, made up of scientific experts and local managers representing NPWS, the Forest Service, Coillte, the Western Regional Fisheries Board, Galway County Council, EPA and the Western River Basin District project. The group was established specifically to examine the role of forestry in relation to water quality in the Owenriff catchment as a response to concerns over an episode of excessive filamentous algal growth that resulted in kills of the freshwater pearl mussel and threatened the local salmonid populations. (2006 – 2008).

Coillte riparian forestry improvements: Surveying and habitat mapping of 20 riparian forestry sites for inclusion in the Native Woodland Scheme. Assessments of adjacent and downstream aquatic habitats and species. Advising on felling to avoid impacts on protected species, particularly salmonids and freshwater pearl mussel. Advising on riparian habitat restoration (2004 – 2005).

M7 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points of the route options for the Nenagh to Limerick section of the proposed motorway Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2002)

E20 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points of the route options for the proposed Limerick Ring Road. Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2001 – 2002)

M6 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points of the route options for the Athlone to Ballinasloe and Ballinasloe to Galway sections of the proposed motorway. Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2001 – 2002)

Gas Pipeline to the West: Aquatic ecology survey for 1km downstream of 90 stream/river crossing points along the proposed route of the gas pipeline from Dublin to Galway and Galway to Limerick Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2000 – 2001)

NRA N2 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points of the route options for the Monaghan to Emyvale realignment. Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2000)

NRA N5 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points and at the lake crossing point of the route options for the proposed new Castlebar to Westport road. Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2000)

NRA M18 road scheme: Aquatic ecology survey for 1km downstream of all stream/river crossing points of the route options for the Gort to Crusheen section of the proposed motorway Survey of aquatic habitat suitability for protected species, surveys of fish populations and riparian survey for otter and kingfisher. (2000 – 2001)

#### **Appropriate Assessment**

Stage 1 Screening Reports for over 120 developments, mainly private housing projects close to

riverine SACs, but also including small projects for local authorities, IFI, Coillte and ESB. (2011 – present)

Inland Fisheries Ireland: Natura Impact Statement for Clondulane Weir (Munster Blackwater) decommissioning. Assessment of potential impacts on protected species and habitats at and downstream of proposed works. Recommendation of mitigation measures. (2016 - 2018).

Carlow C.C.: Natura Impact Statements for 3 proposed bridge repair projects. Assessment of potential impacts of proposed works on the SAC Qualifying Interest habitats and species. Recommendation of mitigation measures (2017).

Kilkenny C.C.: Natura Impact Statements for 36 WWTPs discharging directly to SAC rivers, or upstream of SAC rivers. Assessment of the status of SAC Qualifying Interest habitats and species in the receiving environment, potential impacts and recommendation of mitigation measures (2009 – 2013).

Carlow C.C.: Natura Impact Statements for 25 WWTPs discharging directly to SAC rivers, or upstream of SAC rivers. Assessment of the status of SAC Qualifying Interest habitats and species in the receiving environment, potential impacts and recommendation of mitigation measures (2009 – 2013).

Inland Fisheries Ireland: Natura Impact Statement for Castletown Weir (River Nore) fish pass improvements. Assessment of potential impacts on protected species and habitats at and downstream of proposed works. Recommendation of mitigation measures. Monitoring of works. (2012 - 2015).

Carlow C.C.: Natura Impact Statement for a proposed hydrometric weir at Rathvilly. Assessment of potential impacts of proposed river diversion and weir construction on the status of SAC Qualifying Interest habitats and species. Recommendation of mitigation measures (2012).

Carlow C.C.: Natura Impact Statements for flood defence schemes at Tullow, Leighlinbridge and Tinnahinch. Assessment of the status of SAC Qualifying Interest habitats and species at and downstream of the proposed works, potential impacts and mitigation measures (2011).

NRA: Natura Impact Statements for 2 bridge improvement works on streams flowing to the Blackwater River SAC. Survey of aquatic habitat suitability for protected species. Riparian survey for otter and kingfisher. (2011)

IDL Midleton Distillery: Natura Impact Statement for impacts of abstraction from and discharge to the Dungourney River and effluent discharge to Cork Harbour on SAC/SPA (2011).

Cork Co. Co: Natura Impact Statement for Munster Blackwater River (Fermoy) Drainage Scheme. Assessment of potential impacts on protected and habitats at and downstream of proposed flood defence works. Recommendation of mitigation measures (2011).

Cork C.C.: Natura Impact Statement for proposed repairs to the fish pass on Fermoy weir. Assessment of potential impacts on protected species and habitats at and downstream of the proposed works. Recommendation of mitigation measures (2012).

#### **Specialist Aquatic Invertebrate Identification**

NIEA Lake Samples: The processing of profundal invertebrate samples supplied by the Northern Ireland Environment Agency. This included sorting, identification to the lowest taxonomic level practicable, preparation of a specimen collection, quality control and reporting of results. 577 samples processed to date (2008 – 2014).

Aquatronics, UK: Species identification for external quality assurance. (2012-Present)

EPA Lake Samples: The processing of 898 profundal invertebrate samples supplied by the Environmental Protection Agency. This included sorting, identification to the lowest taxonomic level practicable, preparation of a specimen collection, quality control and reporting of results (2007 –

2010)

### **Terrestrial Habitat Assessment**

Native Woodland Scheme: Preparation of the ecological aspects of 82 Ecological Survey/Management Plans (2004 – Present).

Irish Distillers Ltd.: Biodiversity Action Plan for 45ha distillery site, Midleton, Co. Cork. (2016)

REPS and AEOS Environmental Reports: Surveying of lands in Natura 2000 sites, including many riverine SAC lands and preparation of Environmental Reports, with management recommendations for REPS/AEOS applicants throughout Munster. Over 650 Environmental Reports prepared for 14 REPS Planning Agencies. (1996 – 2012).

NPWS Farm Planning: Assessment and mapping of habitats and prescription of management requirements on 31 farms within designated SPA and SAC sites in Counties Cork, Kerry and Limerick. (2008 – 2010).

Commonage Framework Planning: Habitat surveying, grazing assessment and mapping of commonage blocks in North Cork, Sheep's Head Peninsula, Galtee Mountains, Blackstairs Mountains callows in Roscommon and coastal areas in Cork and Clare (1999 – 2003)

Coillte Biodiversity Plans: Surveying of potential Biodiversity Areas within Forest Management Units 301 (Waterford Uplands), 302 (Waterford Lowlands), 303 (Mid-East Cork) (2003 – 2005).

### **Lectures/Presentations/ Training Course Tutorage**

Presentations to REPS participants on the environmental aspects of the scheme at 76 courses run by agricultural consultancies. These 20 hour courses were a requirement for REPS participants.

Presentations at Four Irish Freshwater Biologists Meetings.

Tutor at two courses on invertebrate identification organised by the National Biodiversity Data Centre.

### **Additional Training**

#### **Health & Safety**

- SafePass
- Personal Survival Techniques Certificate: National Maritime College of Ireland
- National Powerboat Certificate (Level II): Irish Sailing Association

#### **Interpersonal Skills**

- In-house Public Speaking training, Roussel of Ireland Ltd. (3 days).
- In-house Communication Skills training, Roussel of Ireland Ltd. (3 days).

#### **Uncertified Identification Courses**

- Charophyte Identification. NBDC/BSBI. (2 days, 2016)
- Vertigo Identification. NBDC. (1 day, 2014)
- Water Beetles as Habitat Indicators: NBDC (1 day, 2012)
- Sphagnum Identification. NBDC (1 day, 2011)
- Identification of aquatic and semiaquatic bugs. NBDC (1 day, 2011)
- Chironomid Pupal Exuvial Technique: FBA (2 days, 2010)
- Grass Identification: NBDC (1 day, 2010)
- Fungi Identification: NBDC (1 day, 2010)
- Gastropod Identification: NBDC (1 day, 2009)
- Macrophyte Identification: University of Birmingham (2 days, 2006)

Pascal Sweeney has had on-site training from EPA staff in the Q-scheme methodology in 1999, 2003, 2013, 2014, 2015, 2016, 2017 and 2018 to standardise methodology.

### **Specialist Skills**

- Freshwater invertebrates and biological water quality assessments.
- Protected aquatic and riparian species surveys.
- Invasive aquatic species
- Appropriate Assessment reporting.

**Publications**

- Irvine, K., Allott, N., DeEyto, E., Free, G., White, J., Caronie, R. Kennelly, C., Keaney, J., Lennon, C., Kemp, A. Barry, E., Day, S., Mills, P., O'Riain, G., Quirke, B., Twomey, H., & Sweeney, P. (2001). Ecological Assessment of Irish Lakes - the development of a new methodology suited to the needs of the EU directive for surface waters. Environmental Protection Agency
- Pinder, A., Sweeney, P. and Smith, P. (2013). First confirmed record of the genus *Insulodrilus* (Benham, 1903) (Annelida: Phreodrilidae) in Europe. *Bioinvasions Records*, 2: 195-199.
- Sleeman, P., Smiddy, P. and Sweeney P. (1985). Irish mammal road casualties. *Irish Naturalists' Journal* 21: 544.
- Sweeney, N. and Sweeney, P. (2017) Expansion of the White-clawed Crayfish (*Austropotamobius pallipes* (Lereboullet)) population in the Munster Blackwater. *Irish Naturalists' Journal* 35: 94-98.
- Sweeney, P. (2005) Distribution of estuarine Naididae and Tubificidae (Oligochaeta) in Munster. *Bulletin of the Irish Biogeographical Society* 29: 245-257.
- Sweeney, P. (2005) New records of three rare Irish caddis larvae (Trichoptera). *Irish Naturalists' Journal* 28: 300-301.
- Sweeney, P. (2009) First record of Asian clam *Corbicula fluminea* (Muller) in Ireland. *Irish Naturalists' Journal* 30: 147-148.
- Sweeney, P. (2016) Current status of aquatic oligochaetes in Ireland. *Bulletin of the Irish Biogeographical Society* 40: 3-17.
- Sweeney, P., Bradley, C., Trodd, W., Little, R. and McCreesh, P. (2013) *Potamothrix heuscheri* (Bretscher), a Ponto-Caspian oligochaete worm (Oligochaeta, Tubificidae) new to Ireland. *Irish Naturalists' Journal* 32: 68-69.
- Sweeney, P. and Caroni, R. (2016). *Ripistes parasita* (Schmidt, 1847), a freshwater oligochaete worm (Haplotaxida, Naididae) new to Ireland. *Irish Naturalists' Journal* 35: 59-60.
- Sweeney, P. and Gallagher M. (2013) *Aulodrilus pigueti* (Kowalewshi), a freshwater oligochaete worm (Oligochaeta, Tubificidae) new to Ireland. *Irish Naturalists' Journal* 32: 67-68
- Sweeney, P. and Sweeney E. (2013). Greylag goose *Anser anser* (L.) nesting activity on a ruined castle. *Irish Naturalists' Journal* 32: 75-76.
- Sweeney, P., Sweeney, N. and Hurley C. (2013) Natterjack toad monitoring project, 2011 - 2012. *Irish Wildlife Manuals*, No. 67. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- Sweeney, P. and Sweeney N. (2014). *Dero obtusa* D'udekem, a freshwater oligochaete worm (Haplotaxida, Naididae) new to Ireland. *Irish Naturalists' Journal*. 33: 65-66.
- Sweeney, P. and Sweeney N. (2016). *Pristina foreli* (Piguet, 1906), a freshwater oligochaete worm (Haplotaxida, Naididae) new to Ireland. *Irish Naturalists' Journal* 35: 58-59.
- Sweeney, P., Trodd, W. and Kelly-Quinn M. (2003) Two Ponto-Caspian freshwater oligochaetes new to Irish rivers. *Irish Naturalists' Journal* 27: 319-320.
- Trodd, W.R., Kelly-Quinn, M., Sweeney, P. & Quirke, B. (2005) A review of the status and distribution of the free-living freshwater Oligochaeta of Ireland. *Biology and Environment: Proceedings of the Royal Irish Academy* 105B (1) 59-64.

**Career Summary**

- 1994-Present: Consultant Ecologist, Sweeney Consultancy. (Sweeney Consultancy is the registered business name [no. 240762] of Pascal Sweeney)
- 1982 - 1994: Medical Representative with Roussel of Irl. Ltd., 27 Hatch St Lower, Dublin 2.
- 1978 - 1982: Research Assistant, National Board for Science and Technology. Biological and chemical monitoring of Lough Leane, Killarney.

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**Ross Macklin PhD (in prep) B.Sc. (Hons) MCIEEM., MIFM, HDip GIS, PDip IPM**  
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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 EIAR 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.



# 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 theground investigation. He was also responsible for input into the Land and Soils chapter as well as other chapters andappendices 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’sworking 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 inthe 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 ofhis 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 tothe National Trust.  
Value: <€10K.



# Aaron Clarke

## Principal Geologist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

- **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,  
ENVIRONMENTAL SCIENCE  
& PLANNING

- **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 300km<sup>2</sup>. 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.



# Emily Archer

Graduate Geotechnical Engineer



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Emily is a Graduate Geotechnical Engineer at Fehily Timoney and Company working in the Infrastructure Department. She has a Bachelor of Science (BSc.) in Geology and a Masters (MSc.) in Applied Environmental Geology, both from University College Cork. Since starting with FT she has worked on various environmental monitoring and EIA projects

## Previous Experience Essentials For This Project

- **Dunkettle Interchange**  
Emily assisted with the drafting up of the Baseline Groundwater Monitoring Report. This involved reviewing the testing data collected from the groundwater monitoring wells on site and preparing a draft of the groundwater monitoring report.
- **Dublin Airport, North Runway**  
Emily drafted up sections of the environmental monitoring report and also assisted with the manipulation of groundwater data
- **Dublin Airport Stockpile Sampling**  
Emily collected environmental samples from a series of stockpiles for waste classification and assisted with the write up of the environmental report.
- **Site Supervision, Kilkenny County Council**  
Emily logged a series of trial pits for the classification of buried waste material
- **Renewable Gas Facility, Cúil na Móna, Portlaoise**  
Emily's role included drafting up the Land, Soils and Geology and the Hydrogeology chapters of the EIAR for this project. This included a site walkover, peat probing and the review of all online available data relevant to the site to complete a detailed desk study.
- **Drehid Wind Farm, Kildare**  
Emily drafted up the Land, Soils and Geology chapter of the EIAR for this project. This involved a site walkover to carry out peat probing and shear vane testing and the review of all online available data relevant to the site to complete a detailed desk study.
- **N22 Macroom – Ballyvourney Road, Access Track**  
Emily drafted up the Design report for the access track, which also included a site walkover and the logging of trial pits.
- **Central Gas Injection Facility, Mitchelstown, Co. Cork**  
Emily drafted up the Land, Soil and Geology chapter of the Environmental Report for this project. This involved a site walkover and review of all available online data.
- **Old Mill Wind Farm Extension**  
Emily drafted up a detailed desk study for this site which involved a review of all available online data for the constraints state of this ongoing EIA project.

## Key Information

### Qualifications

MSc. Applied Environmental Geology  
University College Cork, 2018

BSc. Geology  
University College Cork, 2017

### Employment History

#### July 2018- Present

Fehily Timoney & Company  
Graduate Geotechnical Engineer

#### May 2018 – July 2018

Fehily Timoney & Company  
Internship

#### August 2016

ESB International Cork  
Undergraduate Work Placement



# 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

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- **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+m<sup>3</sup> 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+m<sup>3</sup> 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. 41,000m<sup>3</sup> 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

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- **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, 1<sup>st</sup> phase and 2<sup>nd</sup> 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.

## 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 47m<sup>3</sup> 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

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- **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 47m<sup>3</sup> 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 m<sup>3</sup> 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.





<b>Cian Doughan</b>  <b>BSc - Landscape Architecture</b>  <b>MILI</b>	<b>Position:</b>	Landscape Architect
	<b>Professional Experience</b>	
	<p>Cian came to Macro Works as an honours graduate of Landscape Architecture from UCD and is now a full corporate member of the Irish Landscape Institute. He has been with Macro Works since 2016, working in a variety of roles that involve a combination of LVIA, landscape design and 3D modelling. He also worked for a leading landscape design office (Hollander Design) in New York for a year.</p> <p>Cian has exceptional graphic ability and his main field of interest in landscape Architecture is that of landscape planning and, in particular, LVIA. Cian has completed assessments for a wide range of development types across our portfolio, including important water supply projects, as well as a range of wind farm and solar farm applications.</p>	

<b>Colin McCaffrey</b>  <b>Architectural Dipl./Degree</b>	<b>Position:</b>	Specialist in 3D Modelling and Presentation
	<b>Professional Experience</b>	
	<p>Colin has worked with Macro Works since 2005 and has been personally involved with nearly all of our projects across our diverse portfolio since then. He specialises in the output of finished renders of complex architectural, industrial and civic infrastructural models to precisely match site-captured imagery. He has worked closely with the graphics team in the development of complex depth of view rendering, which serve the unique panoramic formats frequently used by Macro Works.</p> <p>Prior to working for Macro Works, Colin completed a number of high profile projects for the National Building Agency and was also a CAD lecturer at both Griffith College and Dun Laoghaire College of Further Education.</p>	



<p><b>Amy Doran</b></p> <p>BA - Digital Art</p>	<b>Position:</b>	Graphic Specialist / Health and Safety Officer
	<b>Professional Experience</b>	
	<p>Amy is Macro Works' graphics specialist and has been with the company since 2016. She is principally involved in the preparation of photomontages for LVIA. This role involves working with 3D terrain models and the subsequent integration of photorealistic 3D renders into the calibrated site photography.</p> <p>Amy also has a host of Health and Safety qualifications and is Macro Works Health and Safety Officer.</p>	

<p><b>Luis Dominguez</b></p> <p>BSc (Geography).</p> <p>Masters Degree: GIS &amp; Remote Sensing</p> <p>Masters Degree: Territorial Resource Planning (Spain)</p>	<b>Position:</b>	GIS Analyst
	<b>Professional Experience</b>	
	<p>As GIS Analyst at Macro Works, Luis' job is to manage all spatial data in order to study the visibility of new developments in the landscape. This involves the use of both Digital Terrain Model (DTM) and Digital Surface Model (DSM) data to produce Zone of Theoretical Visibility (ZTV) Maps. Luis is also responsible for the precise integration of 3D scheme models with baseline photography to ensure highly accurate verifiable views (i.e. photomontages). He is also tasked with producing most of Macro Works general map outputs and report figures.</p> <p>Luis came to Macro Works in 2015 from a range of contract positions in which he was responsible for managing complex GIS datasets within the health sector, the education sector and also in relation to archeological research projects. His current role see him dealing with infrastructure and energy projects, particularly solar and wind farms.</p>	



# Maureen Marsden

Project Acoustic Engineer



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Maureen is a Project Acoustic Engineer with Fehily Timoney & Company. She has an MEng in Acoustics and Vibration from Southampton University (Institute of Sound and Vibration Research). She is a member of the Institute of Acoustics and Engineers Ireland.

Maureen has over 20 years' experience across a broad range of acoustics & vibration. She has experience of noise and vibration measurement and assessment across a variety of sectors, including building, industrial and transportation projects.

## Previous Experience Essentials For This Project

### • **Transportation Projects 1994 -2011**

Predicted operational and construction noise for a range of railway transport projects including highspeed rail and tram projects. Measurement of noise levels post construction at Docklands Light Railway extension. Measured noise from operational Docklands Light Railway Extension post completion to determine compliance. Measured internal noise of Inter-city trains for the purpose of developing a specification for new rolling stock.

Measured in-site performance of acoustic barriers on motorways in Ireland. Predicted noise from upgrade to N19 upgrade project during the route selection stage.

Managed baseline noise survey prior to construction of Dublin Port Tunnel.

Projects include Sunderland Metro, UK, East Coast Main Line Upgrade (UK), Docklands Light Railway Extension. Dublin Port Tunnel, N19 upgrade route selection stage

### • **Building Acoustic Projects, 2002 - 2019**

Provided acoustic advice on a range of building acoustic projects including residential, hotel, school, commercial and entertainment developments. Advised on sound insulation requirements for meeting building regulations. Advised on external building envelope design to meet suitable internal acoustic criteria. Predicted mechanical services noise to meet Local Authority noise criteria. Provided advice on meeting internal acoustic absorption requirements for a range of projects including community halls, churches, sports halls. Sample projects include Travelodge hotels, Chelsea Academy and Hammersmith Academy Schools.

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

Predicted noise from a range of industrial sites including LNG facilities, dairy facilities, water works and power plants to advise on noise control measures to meet appropriate environmental legislation. Also predicted in-plant noise contours for purposes of meeting Noise at Work requirements. Sample projects include Thames Water projects, Ballyragget Glanbia site, Jazan Refinery, Saudi Arabia. Gas Networks Ireland – multiple sites, Compressed gas installation Whitegate, Kilkenny Water Projects, Thames Water Noise Impact Assessment, Bioatlantis, Kerry.

### • **Compliance Monitoring at EPA Licenced Facilities**

Measured and analysed boundary noise measurements at licenced waste facilities to determine compliance with noise conditions of the site licence.

Monitored noise at a variety of EPA licenced facilities including food and beverage processing facilities to determine compliance with licence.

## Key Information

### Qualifications

MEng. Acoustics and Vibration,  
Southampton University (ISVR), 1994

### Professional Memberships

Institute of Acoustics  
Engineers Ireland

### Employment History

#### 2019- Present

Fehily Timoney & Company  
Project Acoustic Engineer

#### 2017- 2018

Resonate Acoustics  
Acoustic Consultant

#### 2015- 2017

Soundsorba  
Sales Engineer

#### 2011- 2015

Kellogg Brown and Root  
Acoustic Engineer

#### 2011- 2011

Mott Mac Donald  
Acoustic Consultant

#### 2008- 2010

Applied Acoustic Design  
Acoustic Consultant

#### 2007- 2008

Hoare Lea Acoustics  
Acoustic Consultant

#### 2002- 2006

Sound Research laboratories  
Acoustic Consultant

#### 2001- 2002

RPS

Acoustic Consultant

#### 1998- 2001

Arup Acoustics  
Acoustic Engineer

#### 1996- 1998

Hotpoint Ltd  
Acoustic Engineer

#### 1993- 1996

British Rail Research  
Sponsored Student/Research  
Assistant



# Maureen Marsden

Project Acoustic Engineer



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- **Wind Farm Projects**

Baseline Noise Measurements and analysis to determine prevailing background noise. Compliance measurements to determine if operating windfarms meet planning conditions. Prediction and assessment of operational and construction noise from windfarms.

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

- **Solar Farm Projects**

Predicted operational noise from proposed external equipment to determine compliance with EPA criteria, and make recommendations for mitigation, if required. Predicted construction noise from works associated with to solar farm construction.

Sample projects include: Ballyvalode Solar Farm, Dunmurray Golf Course Solar Farm , Moortown Solar farm, Kilcurly Solar Farm.

- **Channel Tunnel Rail Link Project, 1996 - 1998**

Member of noise and vibration team providing noise and vibration advice. Predicted operational noise using 3-D model, during the detailed design phase of the project, determining noise barrier and bund heights to assist the project in meeting noise commitments. Liaised with design team/landscape architects to develop design incorporating bunding/noise barriers. Modelled construction noise associated with railhead operation and railway construction for the purpose of obtaining Section 61 consent for construction works.



**Colum Breslin**  
**Graduate 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 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**

### **Graduate 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.



### **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 and energy 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
- 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.

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## 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:

#### *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)
- Synchronous Compensator developments, numerous
- Hydrogen refuelling stations and electrolyser projects
- Numerous synchronous condensers (planning applications & operational noise monitoring)

#### *Generation*

- Roosecote 50 MW battery storage facility
- BESS, numerous (5 MW – 450+ MW)
- Capacity Mechanism Schemes, numerous (1 MW – 40+ MW)
- Solar Farms (centralised, decentralised and hybrid layouts)
- Co-location projects e.g., Solar Farm & BESS
- Drakelow Energy from Waste plant (EIA and PPC application)
- Great Coates Energy from Waste plant (EIA)
- Scieki Wind Farm (Poland) Due Dilligence

### 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



# Nathan Cooney

Graduate Planner



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Nathan is a Project Planner with Fehily Timoney and Company and works as part of the Energy and Environment Team.

Nathan holds a BA in Geography and History and a Masters in Regional Urban Planning both acquired from University College Dublin. Nathan has experience in Residential, Mixed-Use, Assisted and Age Friendly Living developments, Childcare and Social Infrastructure Audits and Development Plan submissions.

## Key Skills

- Presentation skills
- Policy Research
- Analytical skills
- Report Writing
- Organising Submission of Planning Applications

## Project Experience

### • Fehily Timoney and Company

#### ***Project Planner***

Preparing Desktop Site Constraint Reports for Wind Farms.

Preparing Section 5 Exempted Development Letters.

Policy Research.

Working as a team with different disciplines.

### • KPMP Future Analytics

#### ***Planning Consultant***

Preparing Supporting Statements for planning applications. Including residential, mixed-used and assisted living projects.

Preparing Feasibility Studies.

Conducting Childcare Demand Assessments and Social Infrastructure Audits.

Policy Research.

Submissions to Draft County Development Plans.

Organising Planning Newsletter

Communicating with other sub-consultants.

### **Stephen Ward Town Planning and Development Consultants Limited**

#### ***Planner***

Preparing Supporting Statements for planning applications.

Preparing 3rd Party objections.

Preparing Responses to 3rd Party Appeals.

Preparing Policy Analysis Reports for sites.

Preparing Time Extension Applications and Supporting Statements.

## Key Information

### Qualifications

Masters, Regional & Urban Planning,  
University College, Dublin, 2019

B.A. Geography and History (Hons.),  
University College, Dublin, 2017

### Employment History

#### **2022 - Present**

Fehily Timoney and Company

#### **Jan. 2021 – June 2022**

KPMG Future Analytics

#### **May 2019 – March 2020**

Stephen Ward Town Planning &  
Development Consultants Limited

**Personal Details**

<i>Nationality</i>	Scottish
<i>Date of Birth</i>	24 July 1965
<i>Education</i>	BEng (hons) Transportation Engineering, Napier University, Edinburgh
<i>Professional affiliations</i>	Member of the Chartered Institute of Highways and Transportation Member of the Institute of Engineers, Ireland
<i>Address</i>	Claran, Headford, Co Galway, Ireland
<i>Email</i>	Info@alipscombetraffic.ie
<i>Tel</i>	00353 93 34777
<i>Mobile</i>	00353 87 9308134

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**Professional Background**

Alan has over 30 years of experience in the fields of transport planning and traffic engineering. In 2007 Alan set up his own consultancy based in the west of Ireland. Prior to that Alan was employed by Colin Buchanan and Partners, with whom he was involved in numerous high profile projects throughout Ireland, the UK and overseas, varying in scale from regional Planning Land use and Transportation Studies to detailed junction design and traffic analysis for large scale development projects.

Alan has excellent written and oral communication skills and is equally adept at working as a manager of a team, or on his own. Over the years Alan has gained significant experience with many transport modelling packages (including SATURN, TRIPS, TRANSYT, Paramics, Commuter, OSCADY, ARCADY and PICADY) and highway design Software, including Autodesk AutoCad Civil 3D and Autotrack.

Alan has a BEng (hons) Degree in Transportation Engineering (Napier University, Edinburgh, 1989), is a member of Engineers Ireland and of the Institute of Highways and Transportation and is a TII accredited Road Safety Audit Team Member.

**ALAN LIPSCOMBE TRAFFIC AND TRANSPORT CONSULTANTS Ltd - SAMPLE OF OTHER WORK TO DATE**

(January 2008 to present day)

**Wind Farm Turbine delivery route assessments and EIAR (2008 to present)** - The assessment of turbine delivery routes and the preparation of the traffic sections for EIAR's for over 30 wind farm developments throughout Ireland on behalf of various Clients. The assessments included detailed modelling of the largest delivery vehicles using Autotrack, the identification of remedial measures required on the proposed delivery route, the determination of the likely traffic impact during the various construction and operational phases of each development, through to the presentation of evidence at An Bord Pleanala oral hearing.

**Design of new signalised junction and preparation of Traffic and Transport Assessment for a major new residential development (380 dwellings) located in Trim Town Centre, County Meath (2015 to 2017)** – The proposed development is located on the R154 in the east side of Trim and involved the design and junction capacity tests for the conversion of an existing priority junction to a signalised junction. A Traffic and Transport Assessment was prepared, which included an assessment of the impact of the proposed development of the existing R154 / R160 roundabout in Trim Town Centre. The development was granted planning permission by Meath County Council and subsequently An Bord Pleanala in March 2017.

**Parnell Street / O'Connell Square traffic and pedestrian assessment, Clare County Council (2016)** – Undertook an assessment of the impacts of options for this area of Ennis town centre on behalf of Clare County Council, involving various levels of pedestrianisation. The study utilised a comprehensive data set of pedestrian and traffic counts collated for the study with junction models prepared to determine the likely impacts.

**Assessment of Junctions 12 and 13 of the M18 in Ennis, Clare County Council (2016)** – Commissioned to advise Clare County Council of the likely impacts on Junctions 12 and 13 of the M18 with respect to the development of various sites on located on the east side of Ennis. The assessment formed part of a submission made by Clare County Council to Transport Infrastructure Ireland (TII).

**Ardaun Corridor, Galway City (2015 to 2016)** – Preparation of a microsimulation model to determine the impact of the development of the Ardaun Corridor on the east side of Galway, on behalf of Galway City Council's Transportation Unit. In addition to access options for the Ardaun Corridor the micro-simulation model included 2 existing linked signalised junctions in the Briar Hill / Parkmore area of Galway City.

**N59 Moycullen Bypass EIS in County Galway (2009 to 2010)** - Traffic modelling and production of traffic forecasts, including the development of a micro-simulation model using the software package Commuter, and a cost benefit analysis using COBA. Responsible for all traffic related input for the project, from model development to the presentation of evidence at an oral hearing.

**Ardderroo Wind Farm EIS and Oral Hearing, County Galway (2014 to 2015)** – Prepared the traffic and transport section of the EIS for a major Wind Farm development proposed in northwest County Galway. Assessment included detailed modelling of the geometric requirements of abnormally large loads and estimation of the impact of development generated traffic during the various construction stages. Presented evidence at An Bord Pleanala oral hearing.

**Bord na Mona Ovoid Manufacturing Facility EIS, Foynes Port, County Limerick (2014 to 2015)** – This EIS was prepared for Bord na Mona with respect to a proposed processing plant located in Foynes Port, County Limerick. Responsible for assessing the impact of the proposed development during both the construction and operational stages of the development. The application is still being considered by Limerick City and County Council at the Further Information stage, although there are no traffic or transport issues outstanding.

**Development Traffic Engineering Services** - Assisting a variety of private sector and semi-state Clients with development proposals in Counties Galway, Mayo, Clare, Limerick, Sligo, Tipperary and Cork. Services include site selection, highway design, highway capacity assessments, parking, service vehicle access analysis, and the preparation of traffic related documentation required as part of the planning process, including Traffic and Transport Assessments and Road Safety Audits.

**Travel Plans and assessments for NUI Galway** - Assisting the NUI Galway with the implementation of a Travel Plan aimed at reducing the reliance of the private car for staff and student trips to the campus. Initiatives designed and implemented include; a park & ride system, car sharing and car-pooling. Also provided transport input for the preparation of the campus Masterplan and prepared the transport assessments for various new developments on the campus.

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**COLIN BUCHANAN AND PARTNERS – Final position Associate Director and manager of Galway Office**  
(1989 to 2007)

Between 1997 and 2007 Alan was employed by Colin Buchanan and Partners as the manager of their Galway Office and head of their traffic and transport team, having moved there as the senior transportation engineer and modeller for the **Galway Land Use and Transportation Study**. After the completion of that study in 1999 Alan worked throughout the West of Ireland on a range of projects, including;

**N6 Galway City Outer Bypass** - Responsible for the development of the TRIPS and SATURN transportation models used from the initial constraints study to the preliminary design stage. Prepared traffic forecasts used in the oral hearing held by An Bord Pleanála.

**Limerick SRRII** - Prepared the detailed traffic forecasts for this proposed highway scheme, including a toll analysis for the River Shannon Tunnel

**Tuam Bypass** - Managed the development of the SATURN traffic model and the cost benefit analysis (COBA) from the constraints study to preliminary design.

**Limerick Planning Land Use and Transportation Study** – Managed the development of the transportation models for this study on behalf of 4 local authorities.

**NUI Galway Development Projects** - Managed the transport element of various planning applications and transport initiatives for the University including the traffic assessment required for a new Engineering Building and the development of a parking strategy including a P&R facility.

**Tralee Transportation Model** – Managed the development of a transportation model for Tralee and its environs.

**Ennis Traffic Model** - Managed the development of a Paramics traffic model for Ennis Town Council and utilised the model to test various highway and development scenarios.

*Before moving to Ireland Alan was involved in a wide variety of transport-related studies for CBP throughout the UK, Malta and Indonesia. A sample of the projects is as follows;*

**Tyne and Wear Metro Study** - Responsible for determining the feasibility of various metro stations in Newcastle. The assessment involved the development of a modes split LOGIT model.

**Bristol Harbourside Development** - Utilised Avon County Council's TRIPS traffic model in order to produce future year traffic flows. Assessed the impact on the surrounding road network using TRANSYT, OSCADY, ARCADY and PICADY. Assisted in the design of highway remedial measures.

**London Bus Priority Network** - Part of a small team responsible for developing bus priority measures on congested routes in South East London.

**Valletta/Floriana Transport Study, Malta** - Responsible for organising and supervising a comprehensive program of transport surveys including junction counts, parking beat and OD surveys.

**Capitol Centre Traffic Impact Assessment, Jakarta** - Updated an existing QVIEW traffic model to predict future traffic patterns in the vicinity of the proposed development. Assessment of the development impact and design and evaluation of junction modification was carried out using TRANSYT.

**Speeding Driver Research Project** - Was the author of this research project undertaken for the Scottish Office. Subsequently presented a paper to a PTRC conference and various local authorities.

**Larnaca Transportation Study, Cyprus** - Used a TRIPS model to forecast the impact of several alternative road network proposals.



# MIRIAM CARROLL

ARCHAEOLOGICAL CONSULTANT

Miriam Carroll is a partner of Tobar Archaeological Services which was established in 2003. Prior to that Miriam worked in the field of commercial archaeology for five years in University College Cork where she completed her primary and Masters degrees. Miriam has over 23 years of experience in the field of archaeology, with 20 of those as partner/director of Tobar Archaeological Services. She is a full member of the Institute of Archaeologists of Ireland (IAI) and is licensed by the National Monuments Service to carry out excavations in Ireland.

## CONTACT

-  Saleen, Midleton, Co. Cork
-  0874188994
-  miriam@tobararchaeology.ie
-  www.tobararchaeology.ie

## EDUCATION

**MA in Irish Archaeology**  
University College Cork  
1996 - 1998

**BA Archaeology & English**  
University College Cork  
1993 - 1996

## SKILLS

// Professional  
EIAR  
Project management  
Archaeological testing  
Archaeological monitoring  
Full scale archaeological resolution  
Building surveys

// Technical  
GIS - ArcGIS  
GPS survey  
Constraints mapping  
Artefact identification and reporting

## WORK EXPERIENCE

### Tobar Archaeological Services / Director

From 2003 to present

Miriam is a Senior Archaeologist with Tobar Archaeological Services. The following are a number of projects that Miriam has overseen in the last number of years.

### Ballyragget-Kilkenny 110kV Uprate / Project Archaeologist

2020

Miriam was the lead archaeologist for this project which is part of the overall Laois-Kilkenny Reinforcement Project. Miriam was responsible for the provision of archaeological monitoring and report writing services, including obtaining the necessary excavation licence from the National Monuments Service. Client: Gaeltec Utilities Ltd.

- Obtain licence from NMS in compliance with planning conditions.
- Provision of archaeological monitoring services.  
Report compilation on completion of project.

### Timahoe North Solar Project / Project Archaeologist

2017 to 2019

Miriam was responsible for the compilation of the Cultural Heritage EIAR chapter for this renewable energy project including field survey. Miriam also coordinated the archaeological monitoring of Site Investigations and constructability trials and associated reports. Client: MKO / Bord na Móna

- Constraints study
- EIAR chapter  
Monitoring of SI and constructability trials and reporting

### Derrykillew Community Wind Farm / Project Archaeologist

2018 to 2019

Miriam was responsible for the compilation of the Cultural Heritage EIAR chapter for this renewable energy project including field survey. She was responsible for preparation of constraints mapping, coordination of field survey and assessment of potential impacts in both Northern Ireland and the Republic. Client: MKO

- Constraints study
- Field survey
- EIAR chapter

## REFERENCES

Available on request

# 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 supports the Energy team in preparing feasibility reports as well as traffic and transport chapters of the EIAR for wind, solar farm, and grid infrastructure developments.

## Key Skills

Sinéad's key skills include:

- EIA
- Feasibility Studies

## Previous Experience Essentials for this Project

- **Annagh Wind Farm**  
Sinéad was responsible for the preparation of the EIAR: Chapter 13 – Traffic and Transport and the Scoping Report.
- **Kilmorna Solar Farm**  
Sinéad was responsible for preparing a feasibility study for Kilmorna Solar Farm stage 2.
- **Delgany to Greystones Greenway, Delgany Community Council, November 2020-July 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.
- **Grand Canal Greenway (Phase 1), Kildare**  
Sinéad contributed to the preparation of the works specifications report for the first phase of the Grand Canal Greenway Kildare – Phase 1 project, ensuring compliance with the TII standards. She also contributed to the preparation of the preliminary health and safety plan.
- **Great Southern Greenway (Limerick Greenway), 40km, Detailed design of works to bring the greenway in line with TII standards**  
Sinéad assisted with the preparation of a Technical Acceptance Report for two overpasses for the Great Southern Greenway project, ensuring compliance with the TII standards.
- **Cork Southern Distributor Link Road**  
Sinéad was responsible for preparing a scheme review report for the proposed Cork Southern Distributor Link Road, sourced utility information for within the study area, studied road networks and public transport within the study area as well as notable projects adjacent to the study area, looks at local and national development plans.

## Key Information

### Qualifications

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

### Employment History

#### September 2022 – Present

Fehily Timoney & Company  
Graduate Engineer

#### Summer 2022

MaREI  
Research Internship

#### 2021

Fehily Timoney & Company  
Intern

#### 2019

University College Cork  
Lab Demonstrator

#### January 2015

Malachy Walsh & Partners  
Work Placement



# Brian Cronin

Senior Project Environmental Scientist



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING

## Profile

Brian is a Senior Project Environmental Scientist with Fehily Timoney and Company. He has over 6 years of professional experience in technical positions with three years specifically in environmental roles.

## Key Skills

- Client Relations: Maintaining trusting relationships with clients through strong communication and professional attitude
- Report writing: Planning and Environmental Reports, EIA chapters (geology, hydrology, hydrogeology and wind micro-climate), contaminated land risk assessment reports, waste classification reports, environmental audits, IPC compliance reports, letter reports
- Fieldwork: Supervising drilling/digging operations, design of monitoring wells, soil logging and sampling, low-flow sampling, aquifer testing, gas monitoring and more
- Training and managing: Training and managing graduates, sub-contractors, students
- Software: Excel, Arc GIS, MS Project, Diver Office, Win Situ, SPSS, Minitab, MS Office suite

## Previous Experience Essentials for this Project

- **Drehid Wind Farm SID application, €100,000, 2022**  
Seeking consent for the development of a Wind Farm and associated 110kV substation from An Bord Pleanála (ABP) as Strategic Infrastructure Development (SID). Pre-application consultation with ABP, writing chapters of the Environmental Impact Assessment Report (EIAR) and coordinating the programme of works to get the SID application processed.
- **Annagh Wind Farm: Request for Further Information (RFI), €50,000, 2022**  
Responding to Cork County Council's RFI regarding a proposed Wind Farm development in Annagh, Co. Cork. Coordinating a multidisciplinary team to provide responses to the RFI.
- **Clondardis 110kV Substation SID application, €30,000, 2022**  
Seeking consent for the development of a 110kV substation from ABP as SID. Pre-application consultation with ABP, writing chapters of the Planning and Environmental Report and coordinating the programme of works to get the SID application processed.
- **Various Tesco Developments, €200,000, 2021**  
Writing EIAR chapters in soils, geology, land, hydrology, hydrogeology and Wind (microclimate) for developments of Tesco superstores in Fermoy, Kells and Dublin.
- **Kilteel Pole Yard Quantitative Risk Assessment, €170,000, 2020-2021**  
Assessing risks to human health and the environment from creosote contamination on a large rural site. Delineated extent of contamination as well as identifying hydrogeological pathways from contaminated groundwater to hydraulically connected surface waters. Proposed remediation strategy to reduce risks.
- **DIT Kevin Street Waste Classification and Soil Management Plan, €150,000, 2020**  
Classified soil and stone wastes across a large urban site with a 17m basement excavation. Identified alternative options to landfill disposal of the materials, including Soil Recovery Facilities and re-use of materials as a by product under Article 27 of the Waste Directive.

## Key Information

### Qualifications

MSc in Environmental Engineering,  
Trinity College Dublin, 2017

Honours BSc in Environmental  
Science, University College Cork, 2013

### Employment History

#### 2022 – Present

Fehily Timoney & Company  
Senior Project Environmental  
Scientist

#### 2021 – 2022

RSK Ireland Ltd  
Senior Environmental Consultant

#### 2020 – 2021

RSK Ireland Ltd.  
Environmental Consultant

#### 2019 – 2020

RSK Ireland Ltd.  
Graduate Environmental Consultant

#### 2018

Fugro GeoServices Ltd.  
Geo-environmental Engineer

#### 2017 - 2018

Initial Project Ltd.  
Contaminated Land Lead Technician

#### 2014-2017

Forest Research Group, Waterford IT  
Research Assistant