



EFCA
FUTURE LEADER OF THE YEAR
2020

Personal details / Entry Form

Full name: Marie-Claire Daly

Nationality: Irish

Birthday: 19th April 1991

Age as of 31/03/2020: 28

Company: PUNCH Consulting Engineers

Location: Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland

Member Association: The Association of Consulting Engineers of Ireland (ACEI)

Contact details

E-mail address: mcdaly@punchconsulting.com

Office phone number: +353 1 271 2200

Cell phone number: +353 87 134 0876

Instructions for completing this form



Note to candidates

Each section and sub-section may be expanded as required. The completed entry form should be no longer than **16 pages in total**. Section A is to be completed by your employer, and Section C by the client.

All entries should be submitted in English. Any annexes in other languages should be accompanied by an English translation or will not be taken into account.

The form should be returned to your national association. They will forward it to the EFCA Secretariat.

You will be informed of the results of the competition at end of April 2020.

Good luck!

For those participating in the FIDIC FL competition

The requirements stipulated in the respective EFCA and FIDIC FL competitions coincide largely for 75%. The following three FIDIC competition requirements are entirely covered in the EFCA application:

- Technical achievements (see Section B in this template) (50%)
What is 30% for EFCA
- Leadership achievements (see Section C in this template) (15%)
What is 40% for EFCA
- Social and community contributions (see Section B in this template) (10%)
What is 30% for EFCA

However, EFCA FLs interested in submitting an application for the FIDIC FL competition should complement their EFCA application with the following two extra requirements.

Applicants should demonstrate:

- Contributions to consulting engineering industry (15%)
- Contribution to consulting engineering associations (10%)

Section A. EMPLOYER'S RECOMMENDATION

Motivation for nominating the candidate: for example: the candidate's personal qualities; their contribution to the specific project; their communication skills with the client/end user; their management potential.

Marie-Claire joined PUNCH Consulting Engineers in 2013 as a Graduate Civil Engineer. Since then Marie-Claire has made rapid progress from Graduate Engineer to Design Engineer to Project Engineer to her current level of Senior Engineer. I expect this career progression to continue and I fully expect to see Marie-Claire assuming the role of Managing Director of PUNCH in the not too distant future. As a personal rule, I never make bold predictions as specific as this about the expected career path of any of our Engineers. After all, as they say, "we all get promoted to our level of incompetence" and there is great wisdom in that statement. However, in Marie-Claire's case I make this prediction with complete confidence, such is my confidence in her ability and potential as a future leader of not only our company, but our Industry.

Marie-Claire has outstanding and proven technical ability as a Civil Engineer. Additionally, she has incredible levels of emotional intelligence and empathy. These qualities make Marie-Claire an outstanding communicator to both technical and non-technical audiences, which ensures a positive impact on projects, coupled with her ability to lead and influence others. This combination of gifts, fuelled by an unparalleled work ethic and great vision, leads in only one direction in my experience and that is to the top of organizations and industries.

Marie-Claire is excelling in her professional career technically, managerially and in a leadership role. She has been the Technical Civil Engineering lead for PUNCH on the large scale €100m+ National Forensic Hospital project since 2017. She had only four years post graduate experience when she took on this role. Considering this was the largest and most important project in our company at the time, confirms the level of ability Marie-Claire has and the faith we put in her, even at such a young age. The project itself consists of ten different buildings on a very large 13-hectare site with many Civil Engineering challenges as described in detail by Marie-Claire elsewhere in this document. She has done a fabulous job, which has been acknowledged widely by the public sector HSE client, the design team, contractor and all stakeholders.

Marie-Claire has been very active with her professional Engineering body, Engineers Ireland with the Young Engineers Society and more recently with the Civils Division. She now also intends to become involved with the Association of Consulting Engineers of Ireland. Involvement and taking a leadership role in these bodies demonstrates Marie-Claire's great passion for Engineering and her uber enthusiasm, so that she can influence the direction of the profession and industry. These are qualities that make Marie-Claire much admired both within PUNCH and in the wider industry and I most highly recommend Marie-Claire for this prestigious EFCA – FIDIC Future Leader of the Year 2020.

Name: Tim Murnane 

Job title: Managing Director

Managerial relationship to candidate: Employer and Manager

Section B. THE PROJECT

B.1 Project description:

Overview of the project, including description of the product/service, client, project partners, timing, specific challenges etc. Supporting documents (which may include photos, drawings or publications) may be included.



PUNCH Consulting Engineers are providing civil and structural consulting engineers services for the development of the National Forensic Mental Health Service (NFMHS) facility within St. Ita's Demesne in Portrane, Dublin, Ireland. The contract value for the works is circa €130 million. This high-secure facility, which is deemed to be critical infrastructure for the Republic of Ireland, will replace the Central Mental Hospital in Dundrum, which is to be decommissioned.

My role in the project is lead Civil Consulting Engineer. I lead the civils design team and make key decisions on civil design elements. I am responsible for design items that include the foul and surface water drainage networks, sustainable drainage systems, watermain networks, the internal road network, paving and associated siteworks.

The 170-bed NFMHS hospital is located on a 13-hectare site and consists of several treatment units housed separately within nine single-storey buildings and one two-storey building, totalling approx. 25,324m² gross floor space. These units include:

- 1) A 130-bedroom National Forensic Hospital comprising the High Secure Unit, Medium Secure Unit, Mental Health and Intellectual Disability Unit, Female Unit, Pre-Discharge Unit, Reception Building, Village Centre and Energy Centre.
- 2) A 10-bedroom Forensic Child and Adolescent Mental Health Unit.
- 3) A 30-bedroom Intensive Care Rehabilitation Unit.

The project is now at construction stage. The site is temporarily being repurposed to aid in tackling the COVID-19 pandemic. The facility will be used by the Health Service Executive (the national health service in Ireland) to house patients that require isolation facilities. Once the emergency phase is complete, the facility will be completed for its final use and the National Forensic Mental Health Service (NFMHS) facility.

My current responsibilities include; inspecting civil and structural works to fulfil PUNCH's Building Control Amendment Regulations (BCAR) responsibilities and thus certifying the building is fit for purpose, witnessing testing, reviewing and commenting on material submittals, responding to the contractor's requests for further information, attending high-level client meetings and attending site meetings and workshops. The intensity of these works has increased in the last number of months to ensure this facility was fit for purpose to temporarily house COVID-19 patients.

Please follow the following link for drone footage from the site taken on 3rd April 2020, as presented on vimeo.com: <https://vimeo.com/404648534/c30385182c>

Please refer to the following link to Google Maps for the site location and an aerial view of the site: <https://goo.gl/maps/5u56RKuHc3twLWGx7>



Figure 1: Aerial view of the National Forensic Mental Service Facility looking east. Image taken on 03-04-2020.



Figure 2: Aerial view of the National Forensic Mental Service Facility looking south west. Image taken on 03-04-2020.



Figure 3: Aerial view of the internal Village Green within the National Forensic Mental Service Facility. Image taken on 03-04-2020



Figure 4: Aerial view of the National Forensic Mental Service Facility looking west. Image taken on 03-04-2020.

B.2 Innovative characteristics of the project:

As this development will be a state-of-the-art high secure mental health facility, the entire project has been built on innovation. In terms of the client's brief, there were two stand-out client requirements that has steered the overall design of this secure healthcare facility. These were:

- 1) The security of the NFMHS and safety of the patients and staff is paramount.
- 2) Opportunities for mental wellness are to be promoted at every possible opportunity.

The complexities of the project stemming from the high-secure nature of the NFMHS led to a complex design brief from the client. I was successful in meeting the client's brief through attention to detail and significant coordination efforts with the full design team involved in the project, statutory bodies and the client.

For example, due to the high-secure nature of the facility I liaised closely with the Health Service Executive's (HSE) security experts for high-security mental health facilities to determine what above normal design practice would be required for the site. In doing so I made many alterations to the civil design. An example of where I increased the specification on a design element is the inclusion of anti-tamper bolts on manhole cover lids to avoid unwanted access to the drainage networks, and hinged covers for fire hydrants ensuring the cover cannot be picked up and used as a weapon. I ensured pipes laid underneath the boundary's security fencing were not greater than 225mm in diameter, as larger pipes could compromise the site's security leading to unwanted access into the site or egress from the site. I designed paving in high-secure patient areas so paving blocks cannot be lifted and used as weapons.

Opportunities for mental wellness were provided in the civil design through use of arisings to create a horticulture area. Optimum sun light was achieved by manipulating the levels on a north facing slope, producing plateaus where patients will be able to plant, grow and nurture their own vegetables and flowers. In addition to this, SuDS were implemented wherever it was deemed suitable. The amenity and biodiversity aspects of SuDS are strong promoters of mental wellness.



Figure 5: Horticulture area created using arisings from the works to optimise vertical orientation for capturing higher levels of sunlight

B.3 The FL's role in, and specific contribution to, the project:

My role in this project is the lead civil engineering consultant. I have led and managed a team of engineers and technicians to complete the civil design and monitor the works as they progressed. I was responsible for making key decisions on the civil elements, and I was the main PUNCH representative and point of contact in PUNCH for the client, design team and contractor throughout the works.

I achieved excellence in design, innovation and sustainability throughout the project for the client. For example, to reduce maintenance requirements for the surface water network, and through liaison with the ecologist on the project, I designed a surface water network for the proposed development that was unattenuated within the site boundary. Instead, surface water will be freely discharged to wetlands that lie directly north of the site, which will revitalise the wetlands, greatly benefiting the ecology in the area. As well as complying with the sustainable drainage requirements for the scheme, it provides environmental benefits for the wetlands. Other sustainable drainage measures include permeable paving for the car park area.

A temporary construction access road, circa 1km in length, was required to separate construction traffic to the site from traffic accessing St. Ita's Hospital and to generally reduce construction traffic impacts on the surrounding areas during the construction phase of the works. The land the road was to be built on has a CBR of between 1% and 2%. To reduce requirements for importing fill material, I proposed a design that reused crushed concrete material from buildings



Figure 6: Permeable paving carpark serving the proposed facility providing 255no. parking spaces for staff and visitors.

that were being demolished during the enabling works for the NFMHS project. To keep the road depth at a minimum and maximise use of the fill, I included a geogrid layer for structural performance. This proposal was accepted by the client and resulted in significant savings to the contract and positively impacted the sustainability of the construction phase.

The site is steeply sloping, and extensive earthworks were required to create usable spaces. I led the calculation of volumes of cut material from the site and liaised with the client, the architect, the landscape architect, the ecologist, the arborist and the archaeologist to determine suitable locations where sub-soil arising from cut material could be reused, ultimately benefitting the proposed biodiversity plan for the overall St. Ita's Campus. This resulted in a significant decrease in the quantity of construction traffic to and from the site and therefore less impact on the local road network. This also led to a positive impact on the sustainability of the construction works and significant savings to the contact.



Figure 7: Subsoil arisings spread throughout the St. Ita's campus, to be planted with wildflower that will greatly rejuvenate and promote biodiversity in the area.

B.4 Communication with the client/end user:

The judges will positively evaluate evidence of good communication skills which contributed towards selling the project to the client.

Communication has been a critical part of this project. The location and scale of the project necessitated the client to appoint an extensive design team. This involved an architect, landscape architect, security consultant, fire consultant, arborist, archaeologist, ecologist, conservation engineer, waste management consultant etc in addition to the appointment of PUNCH as the civil and structural engineers. In addition to liaising with the client and the end user, it was of paramount importance that I communicated effectively with the full design team to ensure the project was executed to the highest standard in order to exceed the client's expectations. I continue to liaise with the client, design team, contractor, and representatives of statutory bodies via email, phone calls and meetings regularly. I strive to achieve clear, concise and unambiguous communication at all times.

One particular aspect of the project that required me to execute careful, considered communication was in liaising with the Portrane community and with statutory bodies in order to ease their concerns with the siting of the facility on the Portrane peninsula in north Dublin. I

was able to alleviate their concerns over traffic and drainage implications, which ultimately ensured that planning for the proposed development was granted. I was able to utilise my communication skills to enable the client to trust in me during the planning process, a trust that was strengthened when I delivered on eliminating significant planning concerns over the project and securing a grant of planning for the proposed development.

Throughout the works I have been particularly strict on health and safety through my designs, how the contractor is implementing the works and how the completed development will serve its vulnerable end users. I prepared and updated my designers risk assessment throughout the design stage of the project, and I updated it continuously if/when design items changed during the construction stage. This enabled me to communicate risks I have identified and have been unable to design out. During the construction stage I have identified and commented on poor and sometimes unsafe construction by the contractor, instructing solutions and inspecting remedial works. For proposed materials to be installed on site, a rigorous programme of destructive testing was undertaken to ensure that all items are fit for purpose in a secure facility, where the risk of self-harm is high. For example, I reviewed samples of proposed Aco channels, ensuring there were no easily removable covers that could be used as a weapon.

B.5 Describe the project end results and the benefits to the client/end user:

The NFMHS is a truly significant construction project. It will deliver critical infrastructure that will accommodate some of the most vulnerable in our society. The project has been a success to date, to the credit of the client, design team and the contractor working in unison. I personally feel a sense of great achievement to say that I have been the lead civil engineering consultant and I have carried out my role to the best of my ability contributing to the success of the project.

Currently the project is being temporarily handed over to the national health service to be used as a facility to cater for patients with COVID-19 that require self-isolation. It will provide 170no. beds. Once the emergency phase is over, the works to complete the facility for its end use as the National Forensic Mental Health Service Facility will be finalised. The benefits to the end user will be significant, as this is a purpose-built facility for those with the most severe mental health issues, some of the most vulnerable in our community.



Figure 8: Aerial view of the National Forensic Mental Service Facility looking west. Image taken on 03-04-2020.

Section C. CLIENT'S APPRECIATION OF THE CANDIDATE

Describe your working relationship with the candidate during the project, and evaluate their performance, including their communication skills.



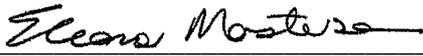
As Project Lead for the Health Service Executive I have worked closely with Marie-Claire in delivering the National Forensic Mental Health Service (NFMHS) Hospital in Portrane, Co Dublin over the last five years. This strategic infrastructure project of national importance will provide 170no. beds (split over 10no. building units) within a secure & therapeutic care environment. This pioneering facility is considered critical for the delivery of essential services for patients with mental health conditions of the highest severity nationally.

Marie-Claire has been a leading design team member throughout this project. It was clear from the outset that she fully understood our brief and connected with the importance of this project and our need for this project to be completed with upmost efficiency, care and attention to detail. Marie-Claire has demonstrated a wealth of knowledge in her field and has represented PUNCH Consulting Engineers with exemplary professionalism.

Marie-Claire led in key roles throughout the planning, detailed design, tender and construction phases of the project. We found that she was instrumental in working to address concerns raised by members of the public and statutory bodies in the siting of the proposed development on a Dublin peninsula with limited road access. and therefore, in securing agreement with public agencies to grant the necessary approvals for the development. Marie-Claire found solutions to complex issues during the detailed design stage and where unexpected issues arose during the construction phase of the project. We have found it a pleasure to work with Marie-Claire throughout this project due to her positive, professional, can-do attitude and her excellent communication skills. Most importantly, Marie-Claire gained our trust very early in this project owing to her leadership abilities.

Most recently Marie-Claire has gone above and beyond for the Health Service Executive when it was decided that prior to completion of the NFMHS facility, it would be temporarily repurposed and used as emergency accommodation in tackling the COVID-19 crisis. This involved significant effort from Marie-Claire and her team to ensure the buildings were ready to be temporarily occupied within a very short period of time.

When the COVID-19 emergency use phase is over, this facility will ultimately be opened to serve some of the most vulnerable of our community. Due to Marie-Claire's performance throughout this project I wholeheartedly endorse Marie-Claire for the European Federation of Engineering Consultancy Associations' Future Leader of the Year Award 2020.

Name and signature  Eleanor Masterson

Job title: Deputy Chief Architectural Advisor

Company: Health Service Executive

Section D. CV OF THE CANDIDATE



Curriculum Vitae



Personal Information

First name(s) / Family name(s)	Marie-Claire Daly	
Business Address	PUNCH Consulting Engineers, Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland	
Phone number(s)	+353 1 271 2200	Cell: +353 87 134 0876
E-mail address	mcdaly@punchconsulting.com	
Nationality	Irish	
Date of birth	19-Apr-1991	

Work Experience

Dates	January 2019 - Present
Occupation or position held	Senior Engineer
Main activities and responsibilities	<ol style="list-style-type: none"> 1) Managing the Market Discovery Fund awarded to PUNCH by Enterprise Ireland and project managing the opening of an office in Australia to improve PUNCH's global resilience. 2) Planning and coordinating the civil and structural engineering design on projects to ensure work is completed to agreed deadlines and to exceed client expectations. 3) Preparing tenders for potential work and agreeing fees with clients. 4) Profitability tracking on projects. 5) Preparation and issuing invoices for completed work in accordance with fee agreements. 6) Preparation of and presenting lunchtime seminars for in-house training. 7) Training and mentoring junior staff. 8) Business development and retention of existing clients. 9) Developing the business area of carrying out Surface Water Audits for largescale projects. 10) Preparation of tender packages, including drawings, specifications, pricing and contract documents. 11) Management of engineer and technician resources to ensure projects are delivered efficiently, profitably and on programme. 12) Representing PUNCH at client, design team and at construction stage meetings. 13) Undertaking site inspections and responding to site issues during the construction stage. 14) Ensuring projects are carried out in accordance with the PUNCH Quality Management System. 15) Managing and improving PUNCH's marketing material, including launching a new website.
Name and address of employer	PUNCH Consulting Engineers, Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland



Type of business or sector	Civil & Structural Engineering Consultancy Services
Work Experience Continued	
Dates	January 2017 - December 2018
Occupation or position held	Project Engineer
Main activities and responsibilities	<ol style="list-style-type: none"> 1) Detailed design of Civil Engineering elements for preliminary, planning, tender, and construction stage. 2) Preparation of detailed engineering reports for planning or as required by the client. 3) Undertaking Surface Water Audits for largescale projects. 4) Preparation of tender packages, including drawings, specifications, pricing and contract documents. 5) Management of engineer and technician resources to ensure projects are delivered efficiently, profitably and on programme. 6) Resource planning. 7) Representing PUNCH at client, design team and at construction stage meetings. 8) Undertaking site inspections and dealing with site issues during the construction stage. 9) Site monitoring. 10) Snagging civils works on completion. 11) Ensuring a project is carried out in accordance with the PUNCH Quality Management System (QMS). 12) Preparation of Designer's Risk Assessments. 13) Value engineering. 14) Preparation of fee proposals.
Name and address of employer	PUNCH Consulting Engineers, Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland
Type of business or sector	Civil & Structural Engineering Consultancy Services
Dates	May 2015- December 2016
Occupation or position held	Design Engineer
Main activities and responsibilities	<ol style="list-style-type: none"> 1) Detailed design of civil elements including watermain, foul drainage and surface water networks, sustainable drainage systems and road networks. 2) Preparation of engineering packages to accompany planning submissions and responses to local authority or An Bord Pleanála requests for further information. 3) Preparation of tender packages, including drawings, specifications, pricing and contract documents for both public and private projects. 4) Management of engineer and technician resources to ensure projects are delivered to the agreed timeframe. 5) Liaison with clients, design team members and contractors. 6) Undertaking site inspections and dealing with site issues during the construction stage of a project. 7) Representing PUNCH at design team meetings and at site construction stage meetings. 8) Quality management, acting as an internal office auditor working to ISO 9001:2015. 9) Compilation of designer's risk assessments and Preliminary Safety and Health Plans.
Name and address of employer	PUNCH Consulting Engineers, Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland
Type of business or sector	Civil & Structural Engineering Consultancy Services



Work Experience Continued	
Dates	October 2013- April 2015
Occupation or position held	Graduate Engineer
Main activities and responsibilities	<ol style="list-style-type: none">1) Designing and modelling surface water networks and foul water networks, sustainable drainage systems, watermain networks in accordance with the GSDSDS, local authority and Irish Water requirements.2) Design of pavement works in accordance with the National Roads Authority's (NRA) Specification for Works.3) Use of TRICS and PICADY software with traffic surveys to prepare traffic and transport assessments.4) Commissioning and assessing site surveys (topographical, CCTV, site investigation and ground penetration radar).5) Compilation of Designer's Risk Assessments (DRA).6) Undertaking site visits to assess proposed sites and during construction stage.
Name and address of employer	PUNCH Consulting Engineers, Carnegie House, Library Road, Dun Laoghaire, Co Dublin, A96 C7W7, Ireland
Type of business or sector	Civil & Structural Engineering Consultancy Services
Dates	June 2013- October 2013
Occupation or position held	Junior Site Engineer
Main activities and responsibilities	<ol style="list-style-type: none">1) Setting out and checking reinforcement for structural elements using reinforced concrete (RC) drawings and schedules.2) Setting out drainage, watermain, mechanical and electrical (M&E) services.3) Organising testing of services when constructed.4) Surveying and preparation of as-built drawings.5) Performing quality control checks.6) Sampling materials for testing, e.g. concrete cubes and concrete slump tests.7) Monitoring, implementing and enforcing strict safety protocols onsite.8) Performing regular safety audits onsite.9) Procurement of material and monitoring their use.10) Managing resources and liaising with subcontractors.
Name and address of employer	P.J. Hegarty & Sons, Carroll's Quay, Cork, T23 DH67, Ireland
Type of business or sector	Construction, Building & Engineering Services

Education and Training	
Dates	2019
Title of qualification awarded	Title of Chartered Engineer
Name and type of organisation providing education and training	Engineers Ireland, the professional body representing the engineering profession as a whole in Ireland
Additional notes	I received a nomination for the <i>Chartered Engineer of the Year Award</i> in 2019 by the Engineers Ireland Chartership interview panel.



Education and Training Continued	
Dates	September 2016 – August 2017
Title of qualification awarded	Higher Diploma in Science in Data Analytics (Grade: First Class Honours)
Principal subjects/occupational skills covered	<ol style="list-style-type: none"> 1) Introduction to Data Analytics 2) Business Analysis and Communication 3) Business Data Analysis 4) Programming for Big Data 5) Data and Web Mining 6) Advanced Business Data Analysis 7) Data Visualisation 8) Project: Creation of a Machine Learning Prediction Tool to Predict Instances of Poor Bathing Water Quality Along the Galway Coastline
Name and type of organisation providing education and training	National College of Ireland, a third level institution based in Dublin City.
Level in national or international classification	The Higher Diploma in Science in Data Analytics is awarded by Quality and Qualifications Ireland (QQI) at level 8 on the National Framework of Qualifications
Dates	September 2009 – June 2013
Title of qualification awarded	BEng (Hons) Civil Engineering (Grade: First Class Honours)
Principal subjects/occupational skills covered	<ol style="list-style-type: none"> 1) The Engineer in Society, Law, Architecture and Planning 2) Computed Aided Design IV (Reinforced Concrete) 3) Civil Engineering Systems 4) Geotechnical Engineering 5) Water and Wastewater Treatment 6) Traffic and Highways 7) Computer Aided Design VI (Environmental) 8) Environmental Hydraulics 9) Biomedical Design 10) Work Placement 11) Final Year Project: <i>Life Cycle Assessment of Wave Technologies</i>
Name and type of organisation providing education and training	University College Cork
Level in national or international classification	The BEng (Hons) Civil Engineering is awarded by Quality and Qualifications Ireland (QQI) at level 8 on the National Framework of Qualifications
Awards	<p>Awarded title of College Scholar at University College Cork for academic excellence in each year of my degree program; 2010, 2011, 2012 and 2013</p> <p>Awarded Best Project Award in the European 'EUREC 2013 Awards' for project entitled '<i>Life Cycle Assessment of Wave Technologies</i>'</p>

Personal Skills and Competences																																									
Mother tongue(s)	English																																								
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Personal Skills and Competences Continued

Social skills and competences

- 1) **Verbal Communication:** I use verbal communication with various levels of formality and assertiveness to build professional relationships with everyone I interact with both internally at PUNCH and externally. I represent PUNCH at site, design team and client meetings.
- 2) **Written Communication:** I believe in clear, unambiguous written communication. I use written communication through many forms including drawings, sketches, reports, risk assessments, memos, emails and letters.
- 3) **Nonverbal Communication and Empathy:** I always endeavour to carry out my responsibilities as an engineer in a professional and respectful manner. I am particularly aware of how I conduct myself when dealing with people and I place great importance in how I manage my own demeanour. I continuously practice empathy.
- 4) **Cooperation and Teamwork:** I consider myself to be a strong team player, both within PUNCH and externally on project teams. I strongly believe successful projects can only be delivered through well executed cooperation and teamwork. In order to encourage a strong community spirit in PUNCH I am actively involved in the PUNCH Dublin Sports and Social Committee. I organise events, including a yearly social event attended by all staff of PUNCH.

Organisational skills and competences

- 1) **Project Management:** I am a Project Manager on several projects for PUNCH. As part of this role I prepare fee proposals, tender submissions, invoices and finalise accounts on completion of a project. I track spending, manage programmes and resource requirements to ensure projects are completed to agreed deadlines and within budget.
- 2) **Resource Management:** I attend weekly resource meetings in my office to discuss the resourcing requirements of the projects for which I am appointed project manager and/or lead civil engineer. I ensure my projects are adequately resourced to meet agreed deadlines.
- 3) **Delegation:** I delegate work to my team. I ensure each member of my team is adequately resourced, has the support they require and is gaining experience through carrying out a variety of work.
- 4) **Team Leadership and Management:** As Project Manager and Lead Civil Engineer on a project I lead and manage teams of civil engineers, structural engineers, civil and structural technicians and BIM technicians.
- 5) **Productivity and 'Lean Thinking':** I continuously try to increase my team's productivity by increasing our efficiency using the principles of Lean and eliminating abortive work.

Technical skills and competences

- 1) **Sustainable Drainage Systems (SuDS):** I prepare detailed design of pioneering sustainable drainage systems. I am a leading engineer in the Dublin area in surface water design. I have been appointed as an independent auditor by other consultants on over 50no. projects to carry out audits on their designs to ensure best practice is being employed.
- 2) **Flood Risk Assessments:** I have prepared flood risk assessments, which include hydraulic modelling to ensure proposed development is not sited within a flood zone and will not cause flooding to property downstream of the proposed development site.
- 3) **Civils Design:** I am experience in modelling and designing drainage networks, pavement works, watermain networks and other civil works to satisfy technical specifications.
- 4) **Design Package Preparation:** I am experienced in preparation of design packages for planning submissions to local authorities, and tender and construction stage engineering design packages
- 5) **Inspecting Construction Works:** I regularly attend site where I make key decisions on design items to ensure the contractor's progression on site is not impeded. I inspect the works and raise any issues with poor workmanship that I identify.



<p>Personal Skills and Competences Continued</p>	
<p>Computer skills and competences</p>	<ol style="list-style-type: none"> 1) Causeway Flow & WinDes: Experienced using these programs to create and model detailed, complex drainage systems. 2) TRICS & PICADY: competent with the use of the TRICS and PICADY programs for traffic assessments. 3) AutoCAD: Proficient in the use of AutoCAD to create engineering drawings. 4) Revit & Civil3D: Experienced using these 3D design packages for engineering projects. 5) Microsoft Office: Excellent MS Office skills for Word, Excel, PowerPoint and MS Project. 6) SQL, Python, RStudio: Carried out programming tasks as part of the Higher Diploma in Science in Data Analytics to complete assessments to a high standard. Gained experience in database creation and management.
<p>Other skills and competences</p>	<ol style="list-style-type: none"> 1) Strategic Thinking & Implementing Strategy: I am centrally involved in strategic thinking and implementing PUNCH's strategy to attain global resilience. I am the project manager for PUNCH entrusted with the project to open a new office for PUNCH in Australia. 2) Quality Management: I am a trained internal auditor for PUNCH. I audit projects to ensure they are in accordance with our quality management system, which is accredited to ISO 9001:2015. 3) Mentoring & Training: I mentor students and graduates in the PUNCH Dublin office. I ensure their development and training is rounded and in line with our Graduate Training Program. I complied the PUNCH Graduate Training Programme for civil engineers. 4) Marketing: I have marketing experience with PUNCH. I am responsible for keeping our marketing material up to date and I am leading the team in PUNCH that is currently creating a new website.
<p>Hobbies and activities</p>	<ol style="list-style-type: none"> 1) Travelling: I thoroughly enjoy researching and visiting different countries and experiencing diverse cultures. 2) Swimming & running: I swim and run regularly to keep fit. I had hoped to complete a number of half marathons in 2020, which have since been postponed due to COVID-19. In the future I'd like to complete an adventure race or triathlon. 3) Hiking: I enjoy the outdoors and hiking in my free time. 4) Learning: I consider myself to be on a never-ending quest to attain more knowledge.
<p>Papers published</p>	<p>Title: Life cycle assessment of the Wavestar. Publication: 2014 ninth international conference on ecological vehicles and renewable energies (EVER). IEEE, Monte Carlo. pp 1–9 Co-Authors: Dalton G, Madden D, Daly MC</p>
<p>Public speaking experience</p>	<ol style="list-style-type: none"> 1) Engineers Ireland: As a committee member of the Young Engineers Society with Engineers Ireland I have organised and ran several events for fellow engineers, many with a focus on Women in Engineering. I have been invited to speak at events with Engineers Ireland also, including a Round Table discussion with Professor Tim Broyd, President of the Institution of Civil Engineers (UK) at the time. I have represented the Young Engineers Society on the Engineers Ireland Liaison Committee, which enabled communication and coordination between committees and societies within Engineers Ireland. I am also a member of the Civil Division with Engineers Ireland, and I organise events with a focus on civil engineering. 2) Training Seminars: I have prepared and given in-house seminars in PUNCH on drainage networks, sustainable drainage systems, watermain networks, paving design and technical report writing. I have also prepared and given external seminars to other companies on behalf of PUNCH on these topics. 3) Promotion of Engineering to the Youth: I have given talks and run events to promote engineering to school children.
<p>Membership of professional organisations</p>	<p>Chartered Engineer (CEng MIEI) member of Engineers Ireland, the professional body representing engineers in Ireland. Member of the following committees in Engineers Ireland:</p> <ol style="list-style-type: none"> 1) The Young Engineers Society 2) The Civil Division