Summer 2020 Newsletter
Roughan & O'Donovan

CGI of Trinity Wharf

ROD 2020

Contents

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Harry Meighan

MANAGING DIRECTOR

Welcome to the ROD Summer 2020 Newsletter. I hope that you are all keeping safe during this unprecedented time.

It has always been our custom to print hard copies of the newsletter and post them to our clients. We consider the hard copy to be more personal than digital editions. They can also be more useful – I encountered one previously in use as a doorstop in a client's office. I trust you will forgive us this time publishing just a digital edition, anticipating that most of our clients are working from home.

ROD design office staff have been working from home since mid-March, although we recently commenced a phased return of up to 20% of office employees spread across the three design offices. An Association of Consulting Engineers in Ireland (ACEI) survey in early July indicates that 28% of firms have more than 75% of staff working at the office and 67% plan to have more than 50% returned by the end of August. Our plans are slightly more fluid than that and our focus to date has been on returning less experienced staff to the coaching / mentoring environment.

It is evident from the same ACEI survey that some firms have been significantly impacted by the Covid-19 emergency with 62% of firms availing of the Temporary Wage Subsidy Scheme and 33% having to lay off or make staff redundant during Q2. ROD has not had to avail of or take such measures. Nevertheless, we are grateful to those clients who have engaged with us in terms of re-scheduling milestone payments and delivery programmes.

The number of people employed in ACEI member firms in 2008 was 4,876, and this number reduced by 49% following the 2007-2008 financial recession. I hope that the new Government in Ireland will recognise the benefit of continuing with the planning and design of public infrastructure projects during the difficult economic time that we now find ourselves in, and will not repeat the mistakes of the last financial recession when planning and design was shutdown, which in turn delayed recovery of the construction industry.

Although remote working has undoubtedly impacted team working and efficiency, our project teams have continued to deliver for our clients during the lockdown period, as is evident from the articles in this newsletter. Eoin O'Cathain's article on the BusConnects project notes how the second non-statutory public consultation was progressed during March and April. Design development work is ongoing, and utility survey and ground investigation contracts across all four BusConnects regions are being administered by ROD. Barry Corrigan reports on our planning stage work for the DART Expansion: Maynooth Line and City Centre Enhancements project where the target is to submit the railway order application by Q2 2021, with procedures in place for remote public consultation events. This edition also includes articles on planning approvals granted for the Trinity Wharf development in Wexford, Dublin Mountains Visitor Centre and a 426-unit housing development for Cairn Homes in Wicklow.

The newsletter also reports our (belated) appointment of Fintan Buggy as Technical Director in the company. Fintan has been with ROD for the last 15 years, having spent his early career in the UK and USA. Fintan brought the expertise that allowed the company to develop in-house capability in the geotechnical field, and he has grown and mentored our geotechnical team since then, passing on his knowledge and experience. His expertise is widely acknowledged and reflected in multiple awards and his leadership of industry groups. We thank him not just for the technical work he has done in ROD but also for the support he has provided to the directors in developing and growing the company.

Finally, I am pleased to note the appointment of Daire O'Riagain as the newest Associate in ROD. Daire is a Chartered Engineer and a Registered Consulting Engineer who joined the company almost 10 years ago in October 2010. Daire commenced with ROD as an Assistant Resident Engineer on the Iarnród Éireann Level Crossings Replacement project and continued working in site supervision until 2017. Since then Daire has been working in our Contract Administration Group, based at our Northwood Office and undertakes the roles of Project Manager and Employer's Representative for projects at Tender and Construction stages. In 2016, Daire undertook the Post-Graduate Diploma in Construction Law & Contract Administration at Trinity College, Dublin, which he completed with Distinction. I congratulate him on his appointment and wish him every success in his new position.

Successful First Year of Operation and Expansion for ROD(UK)

Article by Jim Thorpe

We set up our new UK office in Otley, just outside Leeds in West Yorkshire, in 2019. I am delighted to report that we have had a strong first year in the UK, and I am optimistic that we can build on this positive momentum into the future. Over the past twelve months, we have recruited eight new employees, including an office manager, a principal bridge engineer, a principal highways engineer, several technicians and a graduate engineer. The office also hosted the January 2020 meeting of ROD's Board of Directors.

The decision to base our UK office in Otley is already paying dividends in terms of helping us to attract clients, partners and staff from across the wider region. We secured our first ROD UK-contracted project in early 2020 when the owner of a major bridge called on us for assistance after a significant defect was discovered in the structure. Our engineer was on site the next day, supporting our client through a complex set of repair works and subsequently through ongoing inspections and monitoring.

Our team has also been supporting projects managed from our Dublin office, including the Waterford Northern Quarter Infrastructure Scheme, the Great Yarmouth Third River Crossing and the N5 Ballaghaderreen to Scramoge scheme. Balancing our UK-focused service provision in Otley with the demands of the wider ROD business is essential, and we continue to provide direct support to clients, projects and staff in Ireland, as required. Several of our long-standing relationships with contractors in Ireland are expanding into the UK, and this year and next will see us working together on various tenders. If our tenders prove successful, they will lead to us managing and delivering major design works from Otley.

A focus on quality is a key characteristic at ROD, and this holds true in the UK as in Ireland. We recently became an Institution of Civil Engineers (ICE) approved employer. We are also establishing links with local universities, including the University of Leeds, where one of our team is lecturing on a Master's course, and Leeds Beckett University, with whom we are liaising to support the ICE Proceedings Bridge Engineering. We hope to continue to expand our numbers and service provision from Otley over the coming years.

Article by John Collins

ROD becomes an ICE-approved Employer

ROD has recently secured approval from the Institution of Civil Engineers (ICE) to operate an ICE training scheme. The scheme will enable us to support our technicians and engineers through their initial professional development and on to a professional qualification: incorporated or Chartered Engineer status-IEng or CEng MICE. The decision follows a review by the ICE of our proposed training scheme and an interview with ROD Director, Jim Thorpe, and Principal Design Engineer, John Collins, who led the application process.

ROD has long been committed to the continuing professional development of our staff and to setting high standards in support of lifelong learning. Our two-year graduate development programme, for example, offers graduate engineers the opportunity to gain experience across a range of discipline areas, including bridges, transportation and buildings, and is considered one of the most robust in the industry. As an ICE approved employer, we look forward to supporting our technicians and engineers in progressing to a professional review with the ICE.

ROD's ICE employer approval follows closely upon the extension of our Engineers Ireland CPD Accredited Employer status for the maximum reaccreditation period of three years. Benchmarking our CPD efforts against the rigorous standard set by the Institution of Civil Engineers and Engineers Ireland is important, not just in terms of helping us attract, retain and develop our people across all areas of the business, but also to achieving our strategic business objectives and preparing us for future challenges.

New (Geo) Technical Director at ROD

We are pleased to announce the appointment of Fintan Buggy as a Technical Director at ROD. Fintan spent his early career in the United Kingdom and the United States before joining ROD in 2005. The following year, he was appointed as an Associate, with responsibility for managing ROD's geotechnical engineering services.

Fintan has been to the fore in developing ROD's geotechnical capability, doubling the size of the geotechnical team and supporting ROD in several major infrastructure projects, including the Limerick Tunnel Public Private Partnership (PPP) scheme, the M7/M8 Portlaoise motorway and, more recently, the N5 Westport to Turlough Road scheme in Co. Mayo and the Coonagh-Knocknalisheen Distributor Road in Limerick. In 2018, his team won the Engineers Ireland Geoscience Award for their work on the foundation design elements of the Northern Spire Bridge in Sunderland, UK.

Highly regarded and widely experienced, Fintan served as Chair of the Geotechnical Society of Ireland between 2014 and 2016 and was active in promoting the expanding registration of geotechnical engineers in Ireland using the Register of Ground Engineering Professionals (RoGEP) scheme. He currently sits on the National Standards Authority of Ireland (NSAI) Eurocodes Consultative Committee, NSAI/TC015.

Starting a new job in a new country during the coronavirus pandemic

Victoria da Silva Pereira

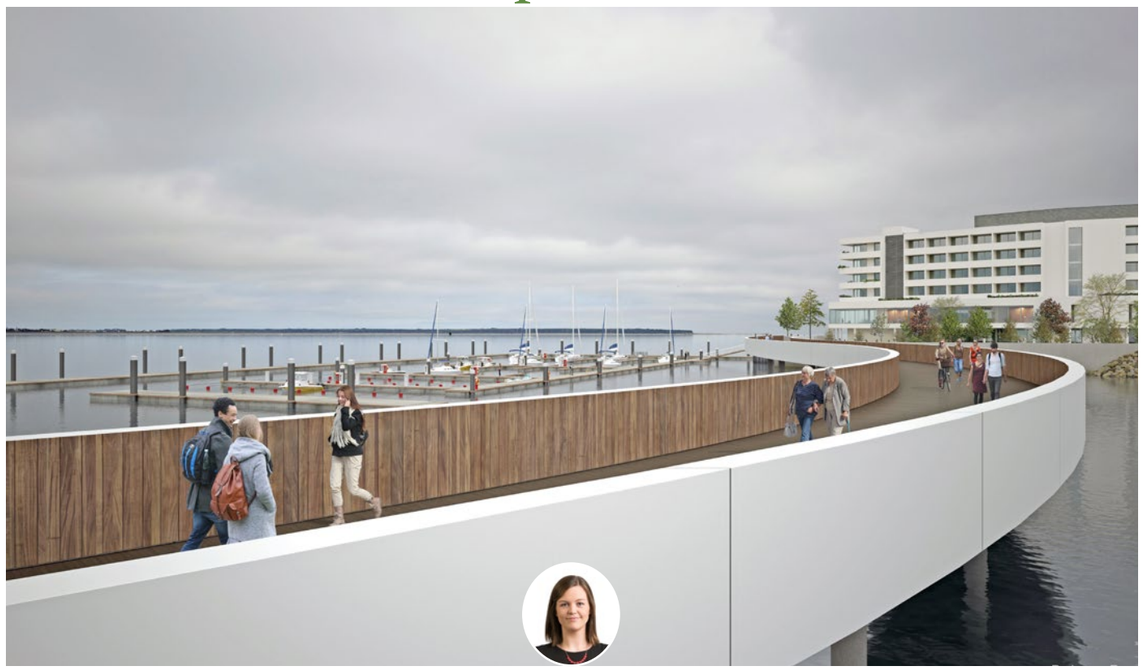
I moved to Ireland from Johannesburg in late March, arriving just as the country went into lockdown. My fiancé and I were due to travel together, but as talk of international travel restrictions grew, I decided to move my flight forward for fear of not being able to start my new job with ROD. My fiancé decided he would stay behind to tie up some loose ends before taking our scheduled flight. Unfortunately, all flights out of South Africa were grounded before he could travel, and now he is in Johannesburg while I am here alone in Dublin – our dream of starting an exciting new life together 'temporarily' on hold.

My first two weeks in Dublin were spent self-isolating in a hastily secured AirB&B. It was a strange time. Since then, I have found my own place and started working at ROD. While any new job brings with it a certain amount of anxiety - you are trying to learn quickly, to fit in and contribute, and to figure out how things work; starting a new job during a global pandemic adds another layer of complexity. I have yet to meet any of my new colleagues in person; I am remote working for the first time in my life; and the term 'social distancing' couldn't feel any more real to me. However, my new colleagues have been very welcoming, and the support I have received from ROD has been incredible. The transition to remote working has been made easy for me, and I have been interacting with my colleagues through social tea breaks. Every week we have a team bonding session, with a 'Minister of Fun' appointed to arrange an enjoyable activity for everyone. It has been a great boost to team morale.

Before relocating to Dublin, I spent nine years working as an environmental practitioner in the utilities environment, and my experience in the electricity industry extends across the entire project life cycle. I was responsible for ensuring an uninterrupted essential service in South Africa's Gauteng province, including obtaining the necessary licences to construct and maintain distribution electrical infrastructure (132kV and below). As maintenance activities on the electrical cable network often triggered environmental legislative thresholds, emergency applications had to be made on a 24/7 basis. I was also responsible for conducting environmental compliance audits on site during construction, which allowed me to develop my technical skills.

I am a qualified ISO 14001:2015 Environmental Management Systems lead auditor, with experience in overcoming social and political challenges. I have also worked closely with Non-Governmental Organisations (NGOs) to ensure the protection of wildlife by managing the refurbishment of aging infrastructure to prevent the collision and electrocution of endangered wildlife species. I secured a first honours BSc in Geography and Environmental Management at the University of Johannesburg, and subsequently completed a BSc Honours Degree in Environmental Management at the University of South Africa.

An Bord Pleanála approves Trinity Wharf Development in Wexford



Article by Gemma Rothwell

An Bord Pleanála has granted Wexford County Council planning approval for the Trinity Wharf Development in Wexford town. The decision was warmly welcomed by the Chief Executive of Wexford County Council, Tom Enright, who described the project as 'one of the most exciting and ambitious economic development projects ever proposed in Wexford'.

The project will see the redevelopment of a 5.5 hectare brownfield site in Wexford Harbour into a mixed-use urban quarter featuring several five and six-storey buildings, including a hotel, a residential apartment building, three office buildings and a multi-storey car park. The design also features a cultural/performance centre, a mixed-use restaurant and café building, a 64-berth marina and a boardwalk providing a pedestrian and cyclist connection to Paul Quay at the southern end of the quayside. The main entrance to the site from Trinity Street will be redesigned, with a level crossing providing access across the Dublin to Rosslare Railway Line into the site.

ROD, working with Scott Tallon Walker Architects, prepared the Environmental Impact Assessment Report (EIAR), Natura Impact Statement (NIS), Traffic and Transportation Report, and the Engineering Design Statement for the proposed development.

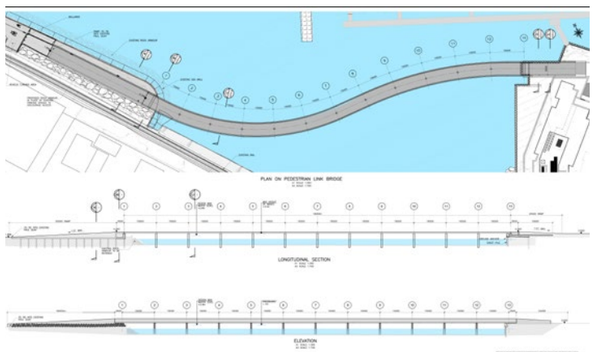
The proposed development is located on land reclaimed during the 1800s and early 1900s and extending into Wexford Harbour. The site was once home to a fishing harbour and a mix of industrial and commercial premises, including an iron works, a dock yard and a car assemblers. These businesses were the biggest employers in Wexford town at the time, but the legacy of this once thriving employment district is now wasteland contaminated with asbestos and other chemicals. The design of the proposed development provides for the importation of materials to raise the level of the site by on average 1.5m and the construction of a new sheet piled sea wall around its perimeter to contain the contamination within the site.

As part of the planning process, a Foreshore Development

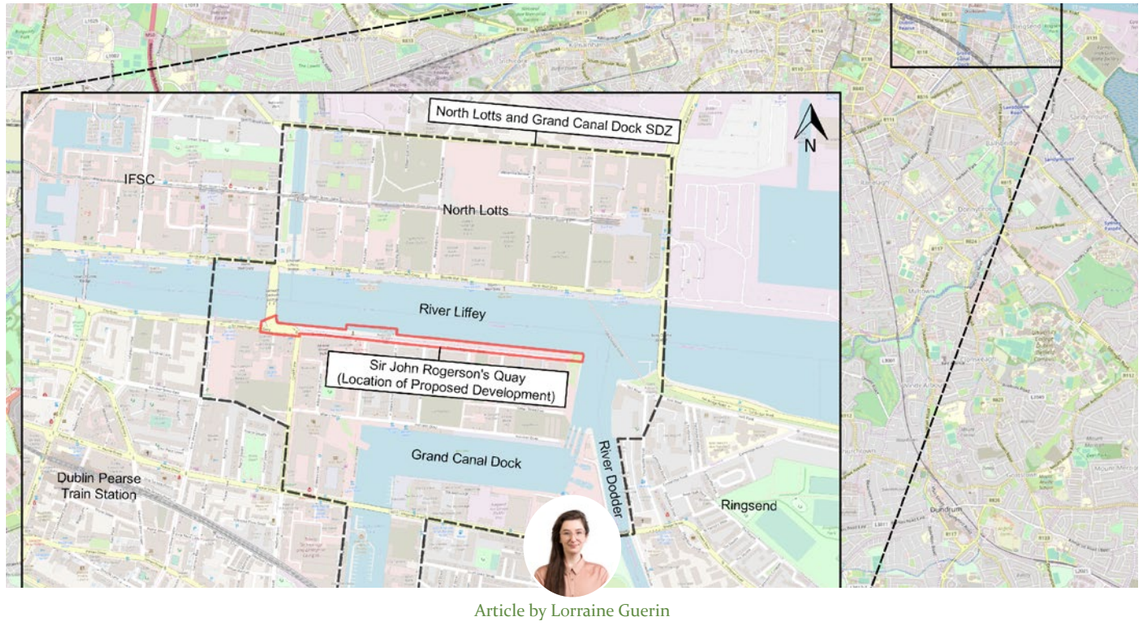
application was submitted to the Department of Housing, Planning and Local Government. The development's marina, boardwalk and sea wall, together with an area of rock armour revetment, will encroach on the area designated as the Slaney River Valley Special Area of Conservation (SAC) and the Wexford Harbour and Slobs Special Protection Area (SPA). This will result in some loss of mudflats and benthic habitats within the footprint of the SAC and SPA. The EIAR and NIS detailed a suite of mitigation measures to protect the conservation objectives for the Qualifying Interests of the SAC and SPA, and the NIS concluded that the proposed development, either individually or in combination with other plans or proposed developments, would not adversely affect the integrity of any European site.

The planning application was submitted to An Bord Pleanála in February 2019. Five months later, ABP sought additional information in relation to the NIS, traffic and transport impacts, flood risk, and water and wastewater servicing proposals. This information was submitted in October 2019 and, following six months of deliberation, approval was granted in April 2020.

The Trinity Wharf development will act as a catalyst for economic growth and socio-economic development in the area. It will enhance Wexford town's profile as an attractive environment for international companies seeking to locate in the county, or for existing companies looking to expand. It will also drive the regeneration of the wider urban area by providing a vibrant, diverse, multi-use quarter with open vistas across Wexford Harbour.



Progressing the Proposed Dublin South Campshires Development



Article by Lorraine Guerin

ROD's environmental team is currently working on behalf of Dublin City Council (DCC) to progress the screening stages of the Environmental Impact Assessment and Appropriate Assessment for the Dublin South Campshires development project. The proposed development involves the enhancement of the existing public realm area on the campshires of Sir John Rogerson's Quay east of the Samuel Beckett Bridge. The objective is to deliver a coherent, high quality, integrated public realm, in accordance with DCC's Public Realm Masterplan for the North Lotts and Grand Canal Dock Strategic Development Zone and the Dublin City Development Plan.

The 'campshires' are the stretches of cobbled paths between the quay and road on both the north and south quays in Dublin. They were so named because various British military regiments would camp there before setting off or returning from duty, making campshire a mix of 'camp' and 'shire'. In recent years, DCC and Dublin Docklands Development Authority (DDDA) have successfully redeveloped parts of the campshires as attractive amenity spaces, where locals and visitors can walk, cycle, socialise and engage in recreational activities. This current project is intended to extend and enhance this significant public amenity.

Key elements of the proposal include:

- sympathetic repaving of the campshires;
- construction of a 125 m cantilevered boardwalk;
- construction of a new two-way cycle track;
- soft landscaping, benches and outdoor exercise equipment; and
- several commercial kiosks.

A flood wall extending from the Samuel Beckett Bridge to the eastern end of Sir John Rogerson's Quay and tying in with existing flood walls along the south quays is also proposed as part of the project. It will provide enhanced flood protection to the south quays and their hinterlands for years to come.

The proposed cycle track has been designed to create a safe and attractive commuting and leisure amenity for cyclists between the city and Ringsend via the proposed Dodder Public Transportation Bridge, which will link Sir John Rogerson's Quay with the Poolbeg Peninsula. It must also align with the design of BusConnects Corridor 16 (Ringsend). ROD is separately involved in both of the above-mentioned projects.

Approval Granted for Dublin Mountains Visitor Centre

Article by Patrick O'Shea

Following a number of further information requests and an oral hearing in November 2018, An Bord Pleanála approved the Dublin Mountains Visitor Centre in June 2020. ROD provided engineering and environmental inputs to the multidisciplinary team led by Paul Keogh Architects. The project includes the development of a visitor centre in two buildings, which will contain an exhibition space, café, toilets, changing facilities, a walkers' lounge, an education centre and retail space. A canopy bridge will be constructed which will link the Hell Fire Club and Massey's Estate. The project will also provide improved trails within the site, additional parking, landscaping using native species and interpretive signage.

The Dublin Mountains Visitor Centre site is located on Montpellier Hill and Massey's Estate area of South County Dublin. Montpellier Hill is owned by Coillte and is a working commercial forest. The infamous Hell Fire Club building is located at the top of Montpellier Hill and offers panoramic views over Dublin. Massey's Estate is a mature broadleaved woodland that contains the ruins of a walled garden, ice-house, cottage and numerous stone bridges that cross the Glendoo Brook. Both the Hell Fire Club and Massey's Estate are popular with recreational users, attracting c. 100,000 visitors per year. A well established and waymarked network of trails runs around the site and connects to Cruagh Wood and the Dublin Mountains Way.

As part of the planning application, ROD prepared the chapters of the Environmental Impact Assessment Report [EIAR] relating to Biodiversity, Transport and Water, and, a Natura Impact Statement. A key concern of the project was the anticipated three-fold increase in visitors to the area as a result of the project, and the impact this could have on biodiversity within the site but also in the wider Dublin and Wicklow Mountains. To address this risk, ROD carried out an assessment of visitor behaviour at the site, using existing data on car park use which was supplemented by survey work in 2017 and 2019. The data showed that most visitor activity is concentrated between the Hell Fire car park and the Hell Fire buildings, while there is a notable fall off further away from the car park.

Merlin, a small falcon, is a European protected species and a Qualifying Interest of the Wicklow Mountains SPA, and the potential for impacts on this species was of particular concern. Merlin surveys were carried out during the breeding season in 2018 and 2019 and included over 400 hours of vantage point survey on Montpellier Hill and in the nearby Dublin Mountains. Using a combination of visitor behaviour data and the results of the Merlin surveys, it was possible to conclude that the project would not lead to a significant impact on Merlin.

ROD also carried out surveys for other species such as Red Squirrel, Badger, Pine Marten and Bats. In order to prevent negative impacts on biodiversity during the construction and operation of the project, a suite of mitigation measures was prescribed which included design based measures such as using ponds for surface water attenuation, which double up as wetland habitat, and the planting of native species throughout the site.

Article by Matthew Ryan

Full Steam Ahead on A6 Dungiven to Drumahoe Dualling Scheme

Construction on the A6 Dungiven to Drumahoe dualling scheme began in April 2018. Since then, considerable progress has been made, and the scheme is on track to be completed in spring 2022. The £220 million scheme involves the construction of 25km of dual carriageway between Dungiven and Drumahoe and includes four new grade separated junctions, three new roundabouts, 22 bridges and over 65 culverts. The construction of the scheme is being led by a joint venture comprised of Sacyr, Wills Bros Ltd. and Somague (SWS).

ROD has made significant progress in delivering the scheme's 22 bridge structures. Three bridge structures are almost complete, with soil backfilling the only major operation remaining; three bridges are over 50% complete, with construction of the bridge deck well underway; construction of foundations, abutments and piers is progressing well at six more; and construction has begun on a further four. 31 culverts have been completed, including two substantial structures, which consist of three 5m wide box culverts and a 6m wide arch culvert respectively. Six culverts are approximately 50% complete and a further 36 have initiated construction.

Drumahoe Park and Ride is almost complete. Mainline bulk earthworks are progressing well and are substantially complete at some sections. Mainline drainage is advancing, with the construction of filter/carrier drains and associated chambers and gullies progressing well. Significant progress has also been made on side roads such as Baranailt Road, Foreglen Road, Tibracken Road, Fawney Road, Ervey Road and several access tracks.

Having delivered the detailed design for the A6 Randalstown to Castledawson ECI - the first phase of which opened to motorists in August 2019 – ROD's design and site teams have the experience and the skills required to ensure the successful delivery of the A6 Dungiven to Drumahoe Dualling scheme.

Article by Matthew Ryan

A6 Randalstown to Castledawson ECI wins Infrastructure Project of the Year at GO Awards 2020

The A6 Randalstown to Castledawson ECI (Early Contractor Involvement) was named Infrastructure Project of the Year at the Government Opportunities (GO) Excellence in Public Procurement Awards Northern Ireland, which took place on 10 March 2020 at the Titanic Hotel in Belfast.

The GO awards are Northern Ireland's leading public procurement excellence awards. They celebrate the achievements of procurement teams from across the public and private sectors in areas such as leadership, innovation and social value.

The scheme, led by Graham Farrans Joint Venture, involves the on-line/off-line improvement of the A6 trunk road from single carriageway to dual two-lane carriageway (D2AP) between Randalstown and Toome and between Toome and the Castledawson roundabout. The first phase opened to motorists in August 2019. ROD, in 50:50 design joint venture with ARUP, delivered the detailed design for the scheme, and we now have a full-time designer's site team working closely with the design offices (ROD design team pictured above) and a contracting team monitoring construction of the works.

Key role for ROD in DART+ project

Article by Barry Corrigan

The DART Expansion programme is a cornerstone of the Government's National Development Plan 2018 to 2027 and its major capital investment programme, Project Ireland 2040. It aims to transform rail capacity in the Greater Dublin Area through the provision of electrified rail services from Drogheda, Maynooth and Celbridge to Dublin city centre.

Iarnród Éireann has awarded the contract for the DART Expansion: Maynooth Line and City Centre Enhancements project to Spanish company IDOM and ROD. ROD's initial appointment is to complete the design and environmental assessments necessary to submit a railway order application in Q2 2021.

The Maynooth Line and City Centre Enhancements project will introduce electrified high capacity trains on the Maynooth Line, increasing passenger capacity from the current 4,500 passengers per hour in each direction to almost 17,000 by 2027. The frequency of rail services for all stations between Maynooth/M3 Parkway to Dublin city centre will be expanded from the current 7 trains per hour in each direction to 15 trains per hour by 2027.

The project scope comprises:

- remodelling Connolly Station and Docklands Station to increase capacity;
- modifying key junctions approaching Connolly/ Docklands Station from the north and west to support increased services and flexibility;
- eliminating level crossings on the Maynooth line;
- providing new bridges, as appropriate, for pedestrians, cyclists and vehicles;
- electrification and power supply;
- signalling and telecommunications infrastructure;
- providing a new train depot;
- modifying infrastructure to facilitate the overall project;
- integrating DART Expansion with MetroLink and other public transport schemes.

ROD is delighted to support Iarnród Éireann in modernising the rail network. With passenger numbers across all services increasing by over 5 per cent annually, and Dublin's growing population expected to further grow demand in the years ahead, improving efficiency, environmental performance and the journey experience for rail users will deliver significant societal benefits.

Foynes Port

Article by Gemma Rothwell

Planning Application submitted for Foynes to Limerick Road

In December 2019, Limerick City and County Council submitted an Environmental Impact Assessment Report, Natura Impact Statement and Compulsory Purchase Order to An Bord Pleanála for the proposed Foynes to Limerick Road project. The new road development will link from Foynes to the N21 at Rathkeale, and from there it will replace the section of the existing N21 route between Rathkeale and Attyflin (Patrickswell), including a bypass of Adare.

The primary need for the proposed development stems from the European policy to provide Trans-European Transport Network (TEN-T) Core Network standard road infrastructure for access to the Shannon-Foynes Tier 1 Port at Foynes, Co. Limerick, and TEN-T Comprehensive Network standard road infrastructure on the Limerick to Kerry route, in accordance with the European Union (EU) TEN-T regulations.

The scheme will greatly improve connectivity within County Limerick and the wider Mid-West Region, boosting competitiveness for inward investment and supporting the ongoing development of the tourism sector in the area. Chief Executive of Limerick City and County Council, Dr. Pat Daly, described the submission as "an important step for the strategic development of Shannon Foynes Port, for West Limerick and the Mid-West Region overall."

Limerick City and County Council engaged ROD-AECOM to undertake the planning, design and environmental assessment of the proposed development in 2014.

With a constraints study area of over 425km², a substantial number of physical and environmental constraints needed to be considered. These included the towns and villages within the study area; the rich archaeological history of County Limerick; the biodiversity of the wider area including numerous Natura 2000 sites; the complex hydrogeological environment comprising numerous groundwater bodies and groundwater-dependent terrestrial ecosystems; and the high quality agricultural lands within the study area. A route selection report was published in 2016, and the design of the proposed development was subsequently progressed by ROD-AECOM.

The total length of the proposed road development is 35km. It comprises 15.6km of Type 2 dual carriageway from Foynes to Rathkeale, 1.9km of single carriageway road from Ballyclogh towards Askeaton, and 17.5km of motorway standard dual carriageway from Rathkeale to Attyflin. Junctions will be provided at Foynes, Ballyclogh, Askeaton, Rathkeale, Croagh and Adare, with a heavy goods vehicle service area also being provided at the Foynes terminus. The development includes five large river bridges, including a bridge in excess of 200m over the River Maigue, which is designated as part of the Lower River Shannon Special Area of Conservation (SAC).

A decision on the application is anticipated in the second half of 2020.

Article by Eoin O'Catháin

BusConnects Second Public Consultation

The second non-statutory public consultation on the BusConnects programme was successfully progressed during March and April 2020, despite the cancellation of planned public events due to the coronavirus outbreak. The relevant information was made available for review on www.busconnects.ie, and submissions were invited in either soft or hard copy. The consultation included revised design proposals for the Ballymun, Finglas, Kimmage and Ringsend core bus corridors (CBCs) devised by ROD in joint-venture with Spanish consultant, TYPSA.

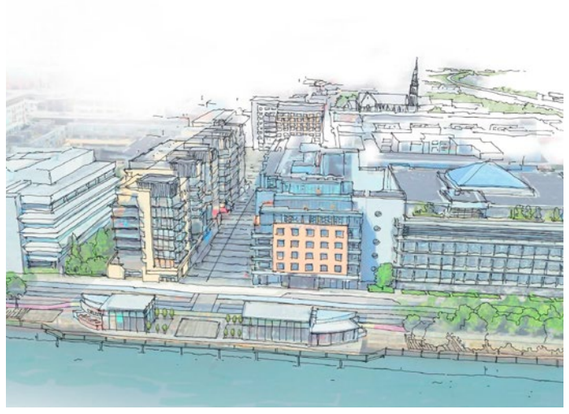
The most significant design developments between the emerging preferred route and the preferred route option public consultations are summarised below:

Ballymun CBC

- Extension at the northern end to the IKEA junction;
- Revised traffic management proposals for the St. Mobhi Road area;
- Revised proposals for improved cycling facilities at Phibsborough;
- Enhanced public realm proposals for Phibsborough Village; and
- Value engineering to reduce the number of properties impacted.

Finglas CBC

- Optimised cross section to maximise retention of landscaping where possible;
- Improved car parking arrangements for Glasnevin Cemetery; and
- Value engineering to reduce the number of properties impacted.



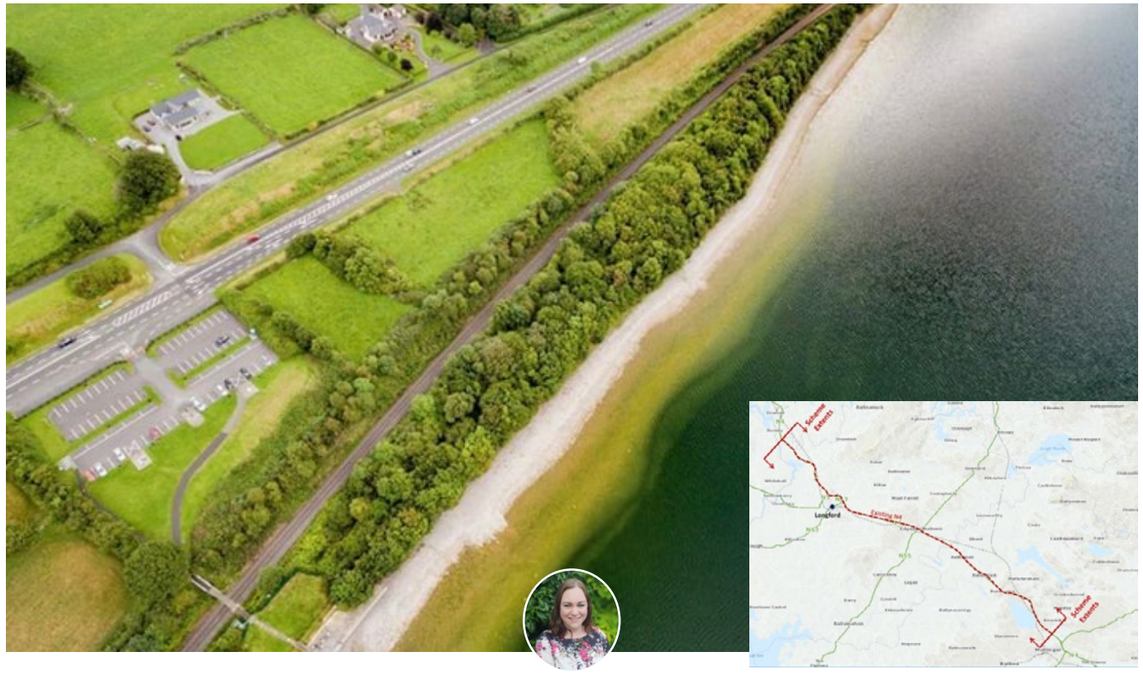
Kimmage CBC

- Significantly reduced land take by optimising the use of traffic engineering measures to provide bus priority without bus lanes;
- Urban realm enhancements at Sundrive Cross;
- Improved cycling facilities outside the canal through the provision of a greenway along the Poddle River; and
- Improved cycling facilities within the canal by re-engineering the road cross section to provide cycling facilities along the mainline.

Ringsend CBC

- Revised proposals to provide continuous two-way bus lanes on the north quays and to better align with Dublin City Council's public realm aspirations for the Liffey Campshires;
- Proposed relocation of the historic opening Scherzer Bridges on the city's north quays to better protect them and provide a feature along the campshires, whilst significantly enhancing bus priority; and
- Revised improved cycle routing to connect to the East Coast Trail and the Poolbeg Strategic Development Zone (SDZ) lands.

Public feedback is currently being reviewed to establish the acceptability or otherwise of the revised proposals. In the meantime, surveys, audits and background design development work is being undertaken with a view to completing planning applications for all routes in early 2021.



Article by Claire Cable

Work begins on the N4 Mullingar to Longford (Roosky) Road project

Roughan & O'Donovan–AECOM alliance was appointed by Westmeath County Council to provide design and planning services for the N4 Mullingar to Longford (Roosky) Road project in December 2019. The scheme will upgrade approximately 50km of the N4 national primary road between the N4 Mullingar bypass and the N4 Dromod/ Roosky bypass, a route that has been identified as a key priority under the National Planning Framework (NPF) Project Ireland 2040. It will bypass the villages and towns of Rathowen, Ballinalack, Edgeworthstown, Newtownforbes and Longford Town.

ROD-AECOM is taking the project from feasibility through to statutory consent, i.e., phases one to four of TII's Project Management Guidelines. The commission programme extends over four years. Having successfully passed the Phase One Gateway, we are currently working on the constraints study for the area, which will inform the route selection process. There are several environmentally sensitive areas along the existing N4, including Lough Owel Special Area of Conservation (SAC), Ardagullion Bog SAC, Glen Lough Special Protection Area (SPA)/Natural Heritage Area (NHA) and Lough Iron SPA/NHA, and they may prove challenging to navigate through with minimum impact as the new route is defined.

ROD-AECOM is delivering the services from a new project office in Mullingar, which will enable us to work closely with our client, Westmeath County Council, on the project.

Fintra Bridge and Road Realignment Project

Article By John Ahern

ROD is engaged by Donegal County Council for the provision of consultancy services on the R263 Fintra Bridge and Road Realignment project in Killybegs, Co. Donegal. The project comprises the realignment of a 1.2km section of Fintra Road and the development of a new bridge structure to replace the existing Fintra Bridge, a narrow two-span masonry arch. Fintra Bridge carries the R263 over the Fintra River in the townland of Fintra. It is very narrow and is reached through a series of severe bends on the Killybegs side. The project will also provide a cycle route between the Killybegs Relief Road roundabout and the entrance to Fintra Beach.

The project's location on the Wild Atlantic Way was an important consideration for our design team, who took care to ensure that the realignment route would open up views of the stunning Donegal coastline and bay. The design of the cycle route makes use of existing sections of Fintra Road, which will be truncated during the construction of the scheme and maintained for pedestrians, cyclists and local access.

When complete, the project will reduce the number of incidents on the R263 between the Killybegs Relief Road roundabout and Fintra and will improve the level of service on the route. The requirement to keep Fintra Road open throughout the construction phase adds further complexity - Fintra Road is the main road access to the entire Glencolmcille Peninsula, and the only alternative is a 50km diversion to the north via a poor-quality regional road.

The route selection process and detailed project appraisal were completed in accordance the Common Appraisal Framework. The preliminary design and planning documents prepared by ROD were submitted for Part 8 planning in late April. Construction is expected to begin in 2021 subject to planning permission.

N52 Ardee Bypass

Article by Richard Spencer

Louth County Council (LCC), with the support of Transport Infrastructure Ireland (TII), has engaged ROD to undertake a review of the design of the N52 Ardee Bypass in Co. Louth. Part 8 planning approval for the scheme was granted by Louth County Council in June 2005 and the Compulsory Purchase Order (CPO) was confirmed by An Bord Pleanála in 2006. The scheme did not progress to construction, due to funding constraints at the time.

Following the reactivation of the scheme in 2018, LCC and TII decided that a comprehensive review of the design was necessary to ensure that the scheme considered changes in the surrounding environment that have occurred in the period since planning permission was granted.

ROD is undertaking the design review, assessing the constraints within the study area and undertaking an option selection study to determine the preferred route. ROD will develop this route to optimise the junction strategy, balancing the need to cater for strategic and local traffic movements before further refining the design to incorporate mitigation measures to minimise the environmental impacts of the scheme on the surrounding environment.

When the optimal solution has been developed, ROD will take the scheme through the statutory process, developing contract documents and undertaking both the contract administration and supervision of the construction contract.

Article by Daire Ó'Riagáin

Work Advances on N11 Parallel Service Road

In April 2016, the National Transport Authority (NTA) published its Transport Strategy for the Greater Dublin Area 2016-2035, providing a framework for the planning and delivery of transport infrastructure within the region surrounding and including Dublin over the next 20 years. The strategy identified several demand and safety deficiencies along the N11-M11 corridor, between Junction 4 (M50/M11) and Junction 14 (Coyne's Cross). A needs assessment report undertaken in 2017 proposed the phased implementation of four separate schemes to address these deficiencies.

Phase one focused on the N11 Parallel Service Road at Kilmacanoge in Co. Wicklow. This scheme was expedited due to the substantial safety benefits it promised to deliver and the fact that it could be implemented as a stand-alone package. In early 2018, Wicklow County Council, through the 2015 Transport Infrastructure Ireland (TII) Road Safety Framework, engaged ROD to carry out phase one to seven of the project.

The works include construction of a 1.6km parallel service road that requires widening into the central median between Junctions 7 and 8 of the N11 in Wicklow. Two new cantilevered sign gantry structures, modifications to existing drainage and construction of traffic calming islands between the mainline and the parallel service road also form part of the Works Contract. In December 2019, SIAC Construction Ltd was appointed to construct the widening works and parallel service road. The scheme is expected to be completed before the end of the year.

ROD's responsibilities included: Project Supervisor Design Process (PSDP) services; preparation of part 8 application; surveys; detailed design; road safety audits; production of contract documents for tendering; contract administration; and full-time supervision of the construction works on site.

Phase 2 of the Royal Canal Greenway

Article by Andrew O'Connell

The Royal Canal Greenway is a key component in Dublin City Council's plan to provide a high quality pedestrian and cycle network across the city. It is one of several sections of a national cycle route that ROD has progressed through the design and construction stages.

Phase 2 of the Royal Canal Greenway will significantly enhance the linkage between the burgeoning Docklands and the rest of north Dublin and westward as far as Cloondara in Longford. It will create an orbital walking and cycling route intersecting all of the main radial routes into the north city centre. It will also connect southwards to the previously completed first phase at Spencer Dock and onward across the River Liffey via the Samuel Beckett Bridge to the Grand Canal Cycleway, thus providing a ring route around the eastern side of the city centre.

As well as reopening and landscaping 500m of the canal bank between Sheriff Street and North Strand road, the scheme includes upgrade works at the junctions at each end; construction of a new viewing plaza adjacent to Sheriff Street Bridge; retaining wall works; and construction of a new 112m long seven-span box girder viaduct to cross the Spencer Dock railway line. The bridge has been designed as a simple, sculptured sinuous structure to sit in harmony with its surrounding streetscape and infrastructure. The bridge deck is monolithic with six tapering steel piers and is supported on a concrete pier at the support closest to North Strand Road and on a concrete abutment at its eastern end. A new pontoon is also being installed on the canal to facilitate the mooring of both pleasure craft and canoes.

Grafton Architects, CSR Planning and Design, Kevin Cleary Associates and Blackwood Associates Architects worked on the design with ROD, which was developed in conjunction with Dublin City Council Transportation, Parks and Public Lighting Departments. The project is being constructed by Jons Civil Engineering and is due to open this summer.

Article by Giovanni Battista Ragusa

Royal Canal Phase 4A - Broombridge Transport Interchange Access Improvements

In August 2018, Dublin City Council engaged Roughan & O'Donovan-AECOM alliance to develop a high-quality cycle route for the fourth phase of the Royal Canal Premium Cycleway, which extends along the banks of Dublin's Royal Canal from Phibsborough to Ashtown. Our client divided the works into four sub-phases to ensure their orderly completion, and the detailed design and tendering of phase 4A has recently been completed. It includes a revision of the cycling and public transport connection to Broombridge Luas stop, which will make access to the tram and railway interchange easier for those travelling from the northern and north-western suburbs.

Broome Bridge provided our main challenge in terms of designing the new layout. The historical masonry arch structure spans over the Royal Canal and the Maynooth rail line. The narrow bridge width of 6.6m between parapets currently accommodates a single footpath and a narrow road one-way road carriageway, with no provision for cyclists. The issues posed by the width restriction are exacerbated by an accentuated crest as part of the road profile and a kinked alignment, which reduce forward visibility.

The design team assessed several options to enhance the existing layout and provide a contra-flow bus lane across Broombridge while retaining access for northbound traffic. The proposed design incorporates improvements to pedestrian and cycle facilities; new traffic signalling; the full renewal of public lighting infrastructure along Broombridge Road; and retaining wall remedial works.

GMC Utilities Group Ltd. was appointed to construct the works, which will be completed in the second half of 2020. ROD-AECOM alliance will act as Employer's Representative and provide design support and resident engineering staff during construction.

It is hoped that the next phase of the wider project will follow in quick succession, with tenders for Phase 4B – the upgrade of 4.5km of the towpath – to be sought over the summer with a view to construction starting in the late autumn.

Juliana Vasconcelos featured in Irish Times

My advice to any girl who finds herself on a difficult path in life is to never, ever, give up!"

To mark International Women's Day 2020, Juliana Vasconcelos shared the incredible story of her journey to become an engineer. Juliana's story was retold in the Irish Times on 8 April.

I grew up in Brazil, in a family with very little money. The youngest of four children, I got my first job while still in high school. In my senior year, a group of my friends decided to go to a careers fair at the Universidade Federal de Minas Gerais (UFMG), the most prestigious university in my hometown of Belo Horizonte. None of my family or relatives had gone to university, so I was curious and went along too.

I loved maths and physics in school, so I decided to attend a presentation given by the Department of Civil Engineering. After an interesting discussion about civil engineering projects around the world, the lecturer explained that the top performing student in the final year of the programme would be given the opportunity to complete a double degree with a university in France. From that moment on, I dreamed of becoming an engineer.

UFMG had one of most competitive and selective admission processes in the country, so the odds were stacked against me. I was determined to succeed, however, and I dedicated the next 12 months to studying for the entrance exam. To prepare for the exam, I needed private tuition, so I worked from 6.00pm to midnight each evening taking pizza orders at a restaurant to help pay for my classes. My routine involved waking up at 5:30 am, attending classes in the morning, spending the afternoon in the library and then going to work. It was an intense year. I got only three to four hours sleep a night, and I had no social life. Many people advised me to give up because they thought it was too much effort without any guarantee of success. But I always believed in miracles, and when I was accepted into the class of 2008, I understood why.

I got high grades across all my subjects in my first semester at university, so I knew I had a real chance of competing for the college place in France. Over the next three years, I built up my portfolio while at the same time studying hard to keep up my grades, undertaking research work and attending classes. I used my research scholarship to pay for French lessons. Once again, my hard work paid off, and I was accepted by the École des Ponts ParisTech - one of only five students from the university to do so. With a scholarship from the French organization, Campus France, I was on my way.

During my three years at École des Ponts ParisTech, all my subjects were taught through French. To validate the degree, however, students had to pass an English exam. Unfortunately for me, I couldn't speak a word of English. During the academic year, I spent my weekends and holidays with a family in England trying to improve, but it wasn't enough, and I failed the exam. Desperate to re-sit the exam and graduate, I decided to use the last eight thousand euros from my Campus France scholarship to come to Ireland to study English. Thankfully, I eventually passed the exam and graduated with my class in June 2015. Now I was ready to look for my first job as an engineer.

Brazil was going through an economic crisis in 2015, so I applied for jobs across the EU, but mainly in Ireland. I naively thought that, with my qualifications, the doors would open for me. But without a work permit, it was next to impossible. While applying for jobs and attending interviews, I accepted whatever work I could find, including working as a cleaner in UCD's student accommodation and taking care of the elderly. I even worked as an extra on the TV show 'Vikings'.

After many unsuccessful job applications, and with time running out on my student visa, I had no choice but to apply for unpaid internships. I thought that if I had to return to Brazil, I had better to get some industry experience behind me. I secured an internship at another engineering consultancy in Dublin, which led to a graduate position, and my journey to become a professional engineer began in earnest.

Three years later, I saw an advert for a bridge design engineer at ROD. I had always admired the company for its bridge projects, the Samuel Beckett Bridge in particular, so when I got the job, I was thrilled. At ROD, I have received great support from my team in terms of developing my skills. I have also been given the opportunity to work on a wide variety of projects. I'm now looking forward to seeing my first bridge being built and, one day, I hope to design a bridge like the Samuel Beckett Bridge.

My advice to any girl who finds herself on a difficult path in life is to never, ever, give up! Even if at first you fail, and everyone is advising you to give up – keep going. Who knows what unexpected opportunities may come your way?

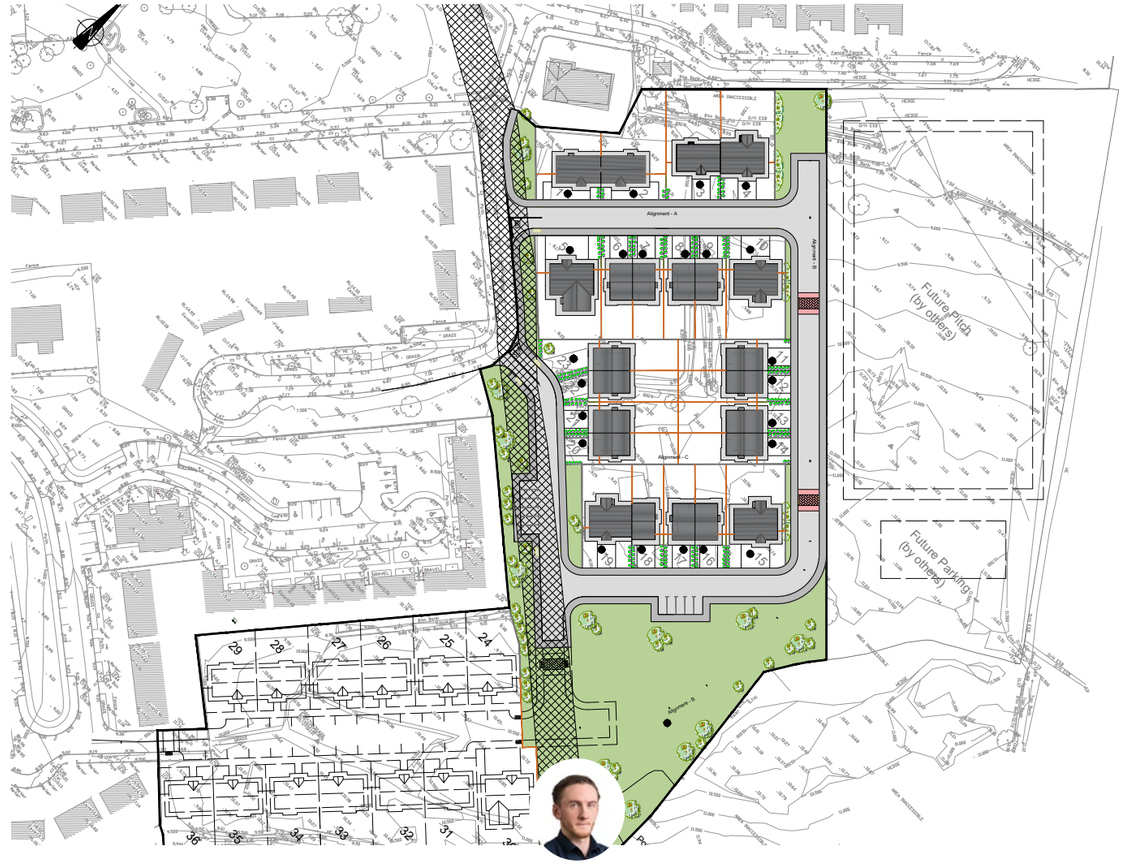
Article by Andrew Thomson

Planning permission granted for 426-unit development in Farrenkelly, Co. Wicklow

In January 2020, An Bord Pleanála granted Cairn Homes planning permission for a 426-unit housing development in Farrenkelly, Co Wicklow. The development comprises 245 houses, 93 apartments and 88 duplex units within an overall site of 52 acres. ROD provided full civil and structural engineering services for the development, including drainage, road design, traffic analysis, flood modelling and preliminary structural design. The project team included Metropolitan Workshop (architect), John Spain Associates (planning consultant), Waterman Moylan (mechanical and electrical) and Kevin Fitzpatrick Landscape Architects (landscape consultant).

Balancing the higher densities required under the fast-track strategic housing development planning regulations with the need for sustainable and workable traffic and drainage strategies was one of the main challenges facing the design team. The integration of effective open spaces and public realm zones was critical to the overall design concept. The development's amenities include a sports pitch, a tennis court, an all-weather multi-use pitch, a children's play area, an informal kick-about area and a 650m pedestrian and cycle greenway along the Three Trouts River, which runs alongside the site. A detailed flood risk assessment for the river, which has a history of flooding, was undertaken to ensure there were no impacts on parties along the river in any direction arising from the works.

The team is looking forward to seeing this ambitious scheme progress to construction in the near future.



Article by Sean Kennedy

New Housing Development in Rosslare

ROD has been appointed by Wexford County Council to provide civil and structural engineering services for a new 36-unit housing development at Rosetown in Rosslare, Co. Wexford. The first phase of the proposed development comprises 15 three-bedroom semi-detached units, four three-bedroom bungalows, three two-bedroom bungalows and one three-bedroom special needs bungalow.

The works will include a new estate road to provide access to the development. Parts of the site will be landscaped and will include a new playing field accessible to all residents in the area.

The proposed development incorporates several sustainable elements, including landscaped areas to hold runoff and underground attenuation in the form of oversized pipes and a stormwater tank. Incorporating these SuDS features into the design will ensure the development does not increase the flows downstream. A full drainage model of both the existing and the proposed surface water system was prepared in order to confirm the positive impact of these proposals.

It is hoped that the first phase of the development will commence construction in early 2021.

Article by Stephen Shorthall

Work advances on the National Children's Hospital Satellite Centre at Tallaght Hospital

Work is continuing on the National Children's Hospital satellite centre at Tallaght Hospital in Dublin, with completion expected in 2020. The centre will provide urgent care and secondary acute outpatient services, including a rapid access general paediatric clinic. All the works are being carried out within a live hospital campus.

ROD was engaged by the National Paediatric Hospital Development Board (NPHDB) to provide civil and structural engineering services for the development of this satellite centre and a second satellite centre at Connolly Hospital in Blanchardstown, west Dublin, in 2014. The design team includes Coady Architects, Ethos Engineering (mechanical and electrical consultants) and BAM as contractor.

Our team is utilising a BIM-centric approach for the satellite centre at Tallaght Hospital as they did for the Connolly Hospital satellite centre. The development comprises a three-storey concrete frame building, with concrete flat slabs spanning between beams and columns on pad foundations. Intricate steels frames have been designed to connect the new building to the existing hospital and provide additional treatment space within the original hospital.

Article by Kieran O'Riordan

Convent Lands, Portlaoise

ROD has been engaged by Sophia Housing to provide civil and structural engineering services for the redevelopment of the Presentation Convent and Sacred Heart National School lands in Portlaoise. Our design partners are O'Brien Finucane Architects, Reddy Architecture + Urbanism, Lotts Architecture and Varming Consulting Engineers. As the development will provide a substantial public realm upgrade in Portlaoise, Laois County Council is a key stakeholder in the project.

The Presentation Convent is situated in Portlaoise town centre and forms part of a larger complex of community buildings on Church Avenue. The convent was established in 1824 and was later extended into adjoining buildings, including a historic stone tower that dates from 1548. Several further extensions were added in the late nineteenth century and the twentieth century. The Sacred Heart National School is one of a group of buildings to the south of the convent building. The original national school dates from c.1880, and a new block and wing were added c.1930. The convent and school buildings are currently vacant.

The proposed development comprises the construction of a 50-unit residential development at the site of the Sacred Heart Primary School and adjacent grounds and buildings. It involves the alteration and refurbishment of the school and convent buildings and the demolition of ancillary buildings and prefabs. To the south-west of the site, a new three-storey apartment block will replace the ancillary buildings, while to the north of the convent, the prefabs will be replaced by a five-unit terrace and a three-storey apartment block. The stage one cost plan and Part 8 planning application were submitted in Q1 2020.

The stage one and stage two flood risk assessments identified that portions of the site are within flood zones A and B (one-in-a-100-year and one-in-1000-year flood events). ROD's water team then undertook a stage three detailed flood risk assessment, including a 1D/2D hydraulic model of the River Triogue catchment within Portlaoise to confirm the effects of extreme fluvial flood events in the existing and post-development scenarios. As a result of our analysis, the preliminary layout of the building was amended to ensure minimal impact on flow paths and flood water displacement within the floodplain. This resulted in a structural solution for the building wherein the finished floor level is supported 1.5m above ground level by a series of concrete fins that will allow water to pass under the building during a one-in-a-1000-year event.

The ecology report and traffic and transport impact assessment for the planning application were prepared by ROD's ecology and transportation teams respectively. Stage three enabling works are planned for late 2020 / early 2021. The existing convent building must be made safe to allow a conservation and geometric survey to take place. The results of this survey will have a significant bearing on the final design.

ROD-IS News Update

Article by Mark Tucker

Midland Great Western Railway (MGWR) retaining walls

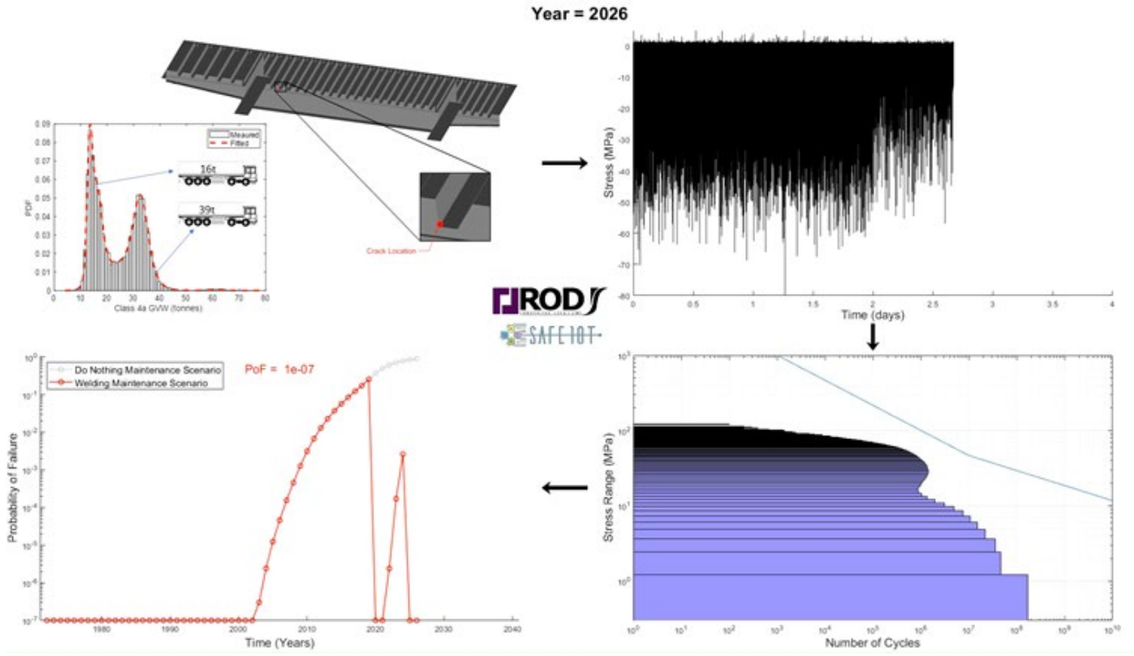
ROD-IS is in the baseline phase of the structural monitoring of the retaining walls at the Phibsborough Luas stop in Dublin city. The stone retaining walls, which are up to 7.5 metres in height, are located in the former Midland Great Western Railway (MGWR) branch line corridor between Broombridge and Broadstone.

The monitoring system at the site was designed by ROD-IS and installed in October 2019. It consists of over 40 sensor channels, including accelerometers, tilt meters, piezometers and still imaging. Transport Infrastructure Ireland (TII) is using the data collected by the sensors to provide warnings and advanced alerts for varying degrees of lateral movement, based on predefined thresholds. The baseline phase will continue until the wall and monitoring system have experienced a full envelope of environmental movements. This will ensure the alarm thresholds are accurately defined.

Safe-10-T

ROD-IS recently oversaw the successful completion of the three-year EU-funded research project, SAFE-10-T. The main output of the project was an online decision support tool to support decision-making in the management of multi-modal transport infrastructure on the Trans-European Transport Network (TEN-T). The final conference was due to take place in Brussels, but travel restrictions led to the decision to hold a virtual conference instead.

ROD-IS Research Engineer, Lorcan Connolly, delivered a presentation on the bridge reliability model at the conference. Lorcan presented the software developed to perform reliability analysis at the fatigue limit state of a bridge in Europe's largest port, Rotterdam, calculating failure probabilities for the bridge throughout its design life and considering different management scenarios and various levels of future traffic growth.



Conferences and Presentations

The ROD-IS team is continuing to disseminate its projects both at home and abroad.

Publications and/or presentations accepted for the TRA2020 and CERI conferences include:

- Data needs, requirements and providers to create a concept for a data-sharing platform to support road operators' efforts to realize digitalization and support cooperative automated driving (CEDR funded DIRIZON project)
- A Decision Support Tool for strategic asset management of infrastructure on the TEN-T network (H2020 Funded SAFE-10-T project)
- Developing a practical roadmap for the step by step transition towards Digitilisation and Cooperative Automated Driving on the European Road Network (CEDR funded DIRIZON project)
- Long Run Traffic Simulations for Multi-Lane Road Bridges (H2020 Funded SAFE-10-T project)
- Probabilistic System Analysis – Practical Examples for Railway Bridges (H2020 Funded SAFE-10-T project)
- Virtual Bridge Monitoring (H2020 Funded SAFE-10-T project)
- Probability-Based Formulation of Skid Resistance for Identifying Optimal Management Strategies for the Road Network, as part of the TII commissioned Network Safety Assessment project.

Sharing our experience and knowledge of bridge maintenance

Article by John Collins

ROD Principal Engineer, John Collins, and Adrian Bown, a senior lecturer from Leeds Beckett University, recently co-edited a special issue on bridge maintenance for the Proceedings of the Institution of Civil Engineers (ICE), Bridge Engineering.

- The issue features papers on Bridge design for inspection and maintenance;
- Hybrid corrosion protection to bridges in New Zealand;
- Planning painting on the Auckland Harbour Bridge;
- Maintaining reinforced concrete bridges in Aberdeenshire;
- Maintenance on the Tamar Bridge between 2010 and 2020;
- Refurbishing a masonry arch bridge in the Scottish Borders;
- Strengthening a tubular steel girder rail bridge.

The papers illustrate how relatively simple activities, such as regular bridge inspections, cleaning and considering access during the design process, can be highly effective in extending the service life of bridges. They also highlight how sophisticated, research-driven and risk-based contemporary approaches, such as deterioration modelling and whole-life cost considerations, can help inform long-term decision-making on bridge maintenance. The issue is available to view here: www.icevirtuallibrary.com/toc/jbren/172/4

John also spoke at the Bridges 2020 conference, which took place in Coventry on 12th March 2020. In discussing the topic of bridge maintenance, John drew on ROD's extensive experience in the assessment and maintenance of bridges, highlighting our work on well-known structures such as the Samuel Beckett Bridge in Dublin and St Patrick's Bridge in Cork. ROD is committed to sharing our knowledge within the engineering and construction communities. By publishing technical papers, lecturing at universities and speaking at conferences, our team plays an important part in fostering innovation and creativity within the industry.

ROD-AECOM Involvement in Galway to Dublin Cycleway Continues

Article by Stephen Harper

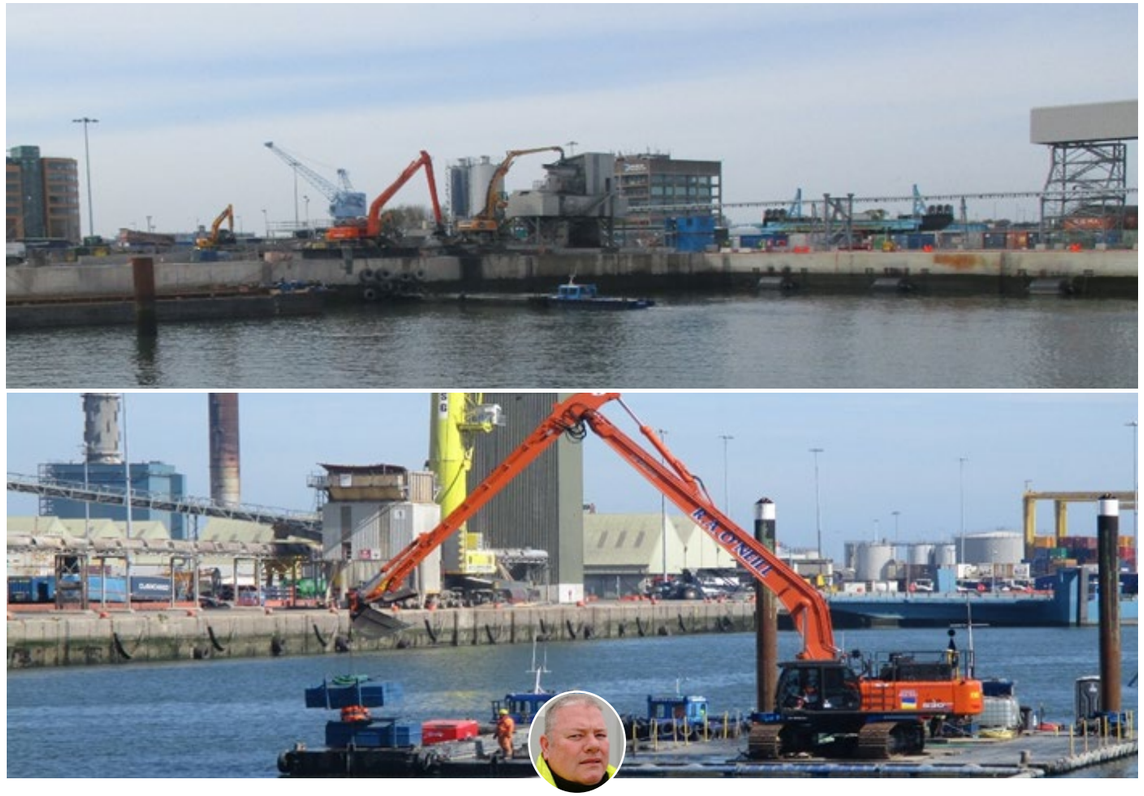
Westmeath County Council (WCC) has appointed ROD-AECOM alliance to provide detailed design services for the Whitegates to Athlone Castle section of the Galway to Dublin greenway, Ireland's first ever dedicated inter-city route for cyclists and walkers.

The appointment marks a continuation of ROD-AECOM's involvement in the Galway to Dublin greenway, which began in 2008 when we were engaged by TII to plan and design this dedicated coast-to-coast greenway stretching 276km across the country. Since then, several sections of the route have been taken through to construction and are now in operation while others are currently at the design stage.

The Whitegates to Athlone Castle section of the scheme connects the east and west sections of the greenway with a new dedicated 100m long, two-span bridge over the River Shannon. It will link to the rest of the greenway along the former Athlone to Mullingar railway line via the Athlone Marina and a new 1.6km greenway.

An Bord Pleanála granted planning permission for the scheme's slender, low-level, elliptical, two-span arch bridge in November 2017. ROD worked closely with Sean Harrington Architects to develop the preliminary design, and our team is now preparing a construction design. Our main challenge lies in designing a structure that will sit elegantly and simply within its surrounds but will also bring definition to an urbanscape with landmarks such as the Church of Saints Peter and Paul, the LUAN Gallery, and the other bridges over the Shannon.

To achieve the necessary aesthetic elegance, the bridge will comprise a steel orthotropic deck, varying in width and depth to create an apex at the centre and flattening out at its ends to create a slimline appearance. Issues such as dynamic instability from users and wind will be given close consideration by our designers. The constrained nature of the site within Athlone's town centre adds another layer of complexity to the project, and careful planning of construction logistics and execution is needed.



Article by Peter Kennedy

Dredging, Stabilisation and Demolition Works at Alexandra Basin, Dublin Port

In 2012, Dublin Port Company (DPC) produced a masterplan setting out its plans for development of the port and its entrance channel. The Alexandra Basin Redevelopment is a significant element of the masterplan. As part of that project, DPC is dredging the basin, with sands, gravels, clays, fill and bed material contaminated with tributyltin (TBT), zinc, lead and rock among the materials to be removed.

Dredged bed material is being brought ashore to a batch treatment facility where large broken stone and concrete rubble are separated out and washed. Cement and powder activated carbon (PAC) are then added to the residual finer sands and clay material for stabilisation and solidification purposes. This treated material is being used to infill the old Graving Dry Dock, which was previously used for ship repairs. Any concrete rubble is removed off-site, with the contractor taking the material to a processing facility.

The works also include the demolition of Ramp 4, which had served the P&O Ferries roll on - roll off facility, and its associated link spans and support structures. The abutment is then being reconstructed to facilitate a new berthing ramp structure. The demolition of Tara Mines bulk conveyor, building and jetty also formed part of the project works. This element of the work is already completed. Substantial completion of the wider project is expected in late 2020.

The work is being undertaken by L&M Keating – Roadbridge, and is being overseen for DPC by ROD and Doran Consulting Engineers.

Engineers Week 2020: opening a window to the world of engineering

Article by Roberta Keaney

During Engineers Week 2020, ten of our engineers, scientists and technicians visited over 270 students in primary and secondary schools across Dublin and Meath. Their aim was to help students connect what they learn in the classroom with the world around them and the opportunities offered by a career in engineering. Nicholas McCann, Walter Malavolta and Martin Donegan visited St. Aidan's C.B.S. in Whitehall, Dublin 9, where they hosted an engineering workshop for the transition-year students.

Nicholas McCann, Walter Malavolta and Martin Donegan began by describing how the work of engineers has helped shape our everyday lives –from the cities we live in, to the smartphones we use and the clothes we wear. They also discussed the diverse projects that engineers are involved in, including wirelessly-charged electric buses, bioengineering and nanotechnology.

Our engineers then set the students a bridge building challenge that involved splitting the class into four teams of five, and providing each team with 15 straws and some blu tack. Each team was given 30 minutes to create a two 'straw-span' long bridge capable of resisting a small rice bag loading. The students threw themselves into the task, enjoying the testing phase in particular. Although only two of the four bridges passed the loading test, all four teams worked well together, sharing ideas and developing interesting bridge designs. Afterwards, the ROD team spoke to the class about their own paths into engineering and encouraged everyone to think hard about what they wanted from their future careers before making their Leaving Certificate subject choices. It was a great day and one we look forward to repeating next year.

Yana Bersunukayeva and Erik Giesen Loo visited Our Lady of Victories Infants and Girls National School in Ballymun, Dublin 9, where they met with the nine and ten-year-olds in third class. They started the morning with a fun game that involved showing the students an image related to a specific field of engineering and asking them to guess the field. It opened up some really interesting discussions, including how designers can make foldable smartphones that don't break!

As the class had recently been reading about Greta Thunberg, the Swedish girl who inspired the school climate strike movement, the ROD team decided to make environmental science the main focus of their talk. The girls were surprised to learn that the fields of engineering and environmental science work so closely together and that the most favourable design for a project is often influenced by its surroundings.

Then it was back to more games, as the girls were asked to prove their engineering skills by making paper planes, with the planes that could fly the furthest awarded a special prize.

Our teams enjoyed returning to the classroom to meet students and discuss the positive impact engineering has on the world. Hopefully, at the end of their school visits, they left behind a queue of budding engineers and scientists asking "how?", "what?" and "why?".

Article by Roberta Keaney

Building a diverse and inclusive workplace at ROD

At ROD, we believe that recruiting staff with differing perspectives, backgrounds and cultures is important to creating well-rounded teams, developing innovative ideas and challenging the status quo. A good mix of talents and skills will ultimately make for a stronger, more collaborative company and bring more effective results to our clients.

The shortage of engineers graduating from universities and the fact that relatively few women and minorities pursue STEM (Science, Technology, Engineering, and Mathematics) careers makes the task of attracting diverse talent difficult, however. To address this challenge, we are increasing our international recruitment efforts, working harder to attract women into the company and investing considerable resources in schools initiatives aimed at encouraging more male and female students into engineering, including Engineers Ireland's STEPS programme.

Our graduate development programme builds upon the core of diversity—diverse talent, experiences, connections, and training. As our graduates move through four six-month-long rotations designed to develop their technical knowledge across multiple discipline areas, they are encouraged to forge their own career paths and networks within the company.

We take an active role in industry-wide initiatives aimed at raising the profile of the engineering profession, including Engineers Week, and we are committed to ensuring the highest consideration towards the community, the environment and our workforce in all our Irish and UK-based projects. In 2017, we won CEEQUAL's highest award for our first major road scheme in Northern Ireland, the A2 Shore Road to Greenisland, in recognition of its significant contribution to improving the sustainability of the community it serves.

In May 2019, ROD was the first consulting engineering firm in Ireland to become a registered professional the Considerate Constructors Scheme, an initiative established by the construction industry to promote a positive culture of safety and respect on construction sites, within the local community and the environment impacted by construction activity. Our membership of the scheme was recently renewed for a further 12 months, with the auditor affirming that "the scheme's values align with ROD's own ethos and outlook."

Our efforts at creating a more diverse team and a more inclusive workplace were recently acknowledged by Michelle Harvey, office manager at our head office in Sandyford, in her website article to celebrate International Women's Day 2020.

Reflecting on her 21 years with the company, Michelle commented:

> *With over 200 people now working with us, one of the biggest changes I have seen is in the number of female staff members at ROD. Where once I was one of 5 females, I am now one of 44 - 10 of whom work in administration and support and 34 of whom are technical.*
>
> *We have also become more diverse in terms of the nationalities within our team. I now boast of having colleagues from Italy, Spain, Poland, Brazil, China. South Africa, New Zealand, India and France, to name just a few.*
>
> Michelle Harvey, Office Manager

Arsalan Sayed, Graduate Engineer

I joined ROD as a graduate engineer in October 2019. I studied Civil and Structural Engineering at University of Bradford before undertaking a Master's in Structural Engineering at University of Leeds. I am working with the team in our Otley office, where I have been involved in the Waterford North Quays SDZ and the N5 Ballaghaderreen to Scramoge Road projects. Both projects have provided plenty to test my skills and knowledge, and I am learning a lot by contributing to the detailed design and drawings of retaining structures and gathering information on the structures that are part of the N5 scheme. The senior staff at ROD are always open to answering my questions, and they have encouraged me to develop my skills through CPD courses and attending in-house lectures and presentations. I am learning something new every day.

Elena San Juan, Senior Engineer

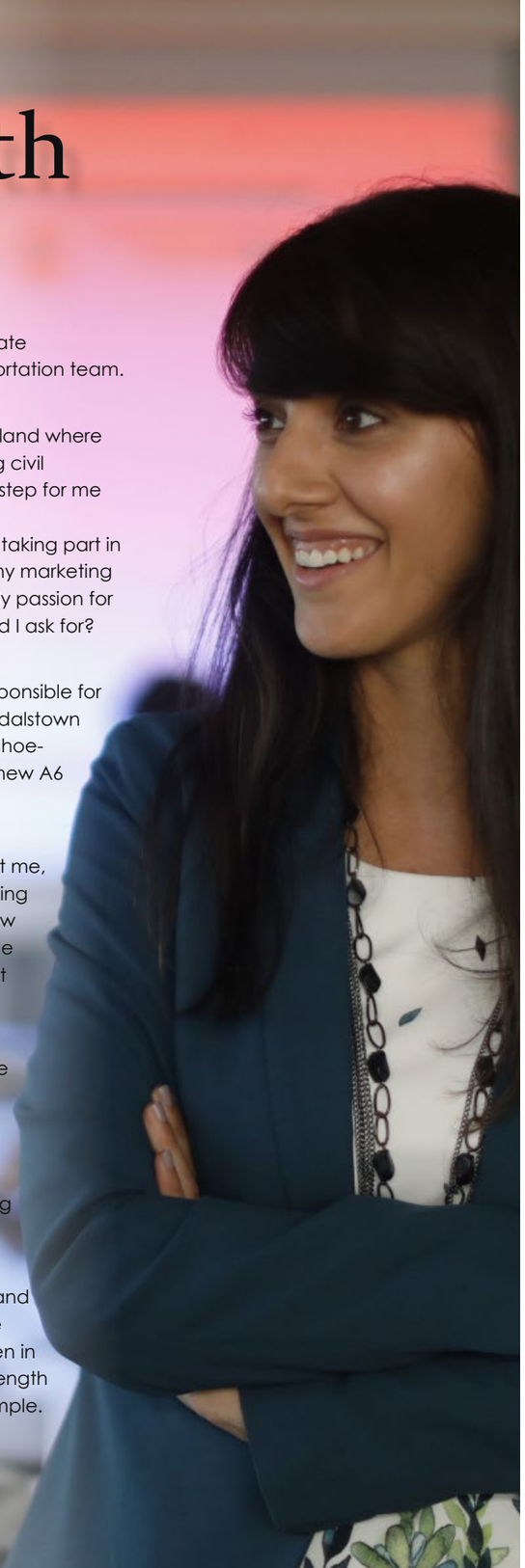
I graduated with a Master's in Chemical Engineering from Universitat Ramon LIull - IQS School of Engineering in Barcelona. I spent 11 years working as a process engineer and project manager in the water industry before joining ROD's water team in October 2019. It was my desire to learn more about storm water management, integrated catchment management and SuDS that led me to ROD, and I am really enjoying being part of its big, multidisciplinary team. Working here has allowed me to improve not just my understanding of the civil engineering aspect of water management, but also the bigger picture of how water is managed in Ireland and how this management is evolving as new institutions and working groups are created. ROD's water team is quite international, and it is well connected to leading European research teams, including the River Restoration Centre in the UK. We are also working on several infrastructure projects in the UK, including the drainage for Great Yarmouth Third River Crossing in Norfolk.

Inês Roque Dominguez, Bridge Design Engineer

I studied Civil Engineering at Instituto Superior Técnico in Lisbon, before completing a double Master's degree in Structural Engineering with Lisbon University and Politecnico di Milano in Italy. I was drawn to structural engineering in particular because it is a constantly evolving field, with new materials, tools and technical knowledge being used to push contemporary structures to new limits.

After graduating, I spent a year working with the engineering consulting firm, Trimétrica Engineering, in Lisbon, where I was encouraged to embrace a wide range of structures, materials and construction techniques. I joined ROD's bridges team in January 2019. I am currently working on the Great Yarmouth Third River Crossing in Norfolk and the cable-stayed bridge swing bridge over the River Clyde in Glasgow. I could never have expected to be involved in such unique projects at this stage in my career. ROD has really fired my ambitions for the future.

Five minutes with Elisa Longo



When did you join ROD and what is your role with the company?
I joined ROD three years ago when I was offered a place on the graduate programme. I am now working as a design engineer with ROD's transportation team.

Why did you choose to study civil engineering?
I attended a scientific-based secondary school in Sicily - the beautiful island where I was born. I was fascinated by maths and physics at school so studying civil engineering at the University of Messina in Sicily felt like the logical next step for me although, quietly, I dreamed of becoming a fashion model.
When I joined ROD as a graduate engineer, I never thought I would be taking part in photoshoots – with a professional make-up artist – in support of company marketing campaigns. The experience has given me the chance to bring my early passion for fashion and modelling into my career as an engineer. What more could I ask for?

Has there been any stand-out project for you since you joined ROD?
The A6 in Northern Ireland; I don't even need to think about it! I was responsible for a broad range of transportation tasks, at different levels, on the A6 Randalstown detailed design, the A6 Drumahoe-Dungiven tender and the A6 Drumahoe-Dungiven detailed design. I like to say that I worked on the old A6, the new A6 and, who knows, maybe one day I will work on a future one!

What has been your biggest challenge to date?
Proving myself in a foreign country, without family and friends to support me, has been my greatest challenge. My first experience of living and working abroad was as a student researcher in Sweden- it was tough!. I see now that it was an important step in my development as a person, as it made me hungry for new experiences. I would not be here at ROD were it not for it.

What are your hobbies?
I like to travel and discover new places. I have visited several impressive attractions, including the Eiffel Tower in Paris, the National Gallery, London and the ancient city of Pompei in Italy's Campania region.
Art is another one of my hobbies. I find inspiration everywhere, even in engineering tasks. In fact, I have created a painting inspired by one of my early traffic models! I have some great ideas in mind for empowering women, and I am looking forward to sharing them, so stay tuned!

Do you have any goals for the future??
My dream is to be able to contribute to the advancement of women, and I would love to be able to help my younger female colleagues achieve their career ambitions. In 2018, I attended an incredible two-day Women in Construction conference in Amsterdam, where I was inspired by the strength and kindness of the guest speakers. I try to live my life now by their example.

Meet the New Recruits..

Victoria da Silva Pereira
Victoria joined ROD's environmental team in March 2020. Prior to joining ROD, she spent nine years working as an environmental practitioner in the utilities environment in South Africa. She is a qualified ISO 14001: 2015 Environmental Management Systems lead auditor. Victoria has a BSc in Geography and Environmental Management from the University of Johannesburg and a BSc (Hons) degree in Environmental Management at the University of South Africa. Victoria's hobbies include reading, going to the gym and spending time with friends and family.

Michael McDonnell
Michael joined ROD as an Assistant Resident Engineer on the N5 Westport to Turlough Road scheme last January. He has over six years' experience in civil/site engineering. Michael holds a degree in civil engineering and recently completed an MSc (Hons) in Sustainable Building Technology from Galway-Mayo Institute of Technology (GMIT). His hobbies include travelling and playing hurling and football.

Lars Schneider
After spending four years working as a project developer in Sri Lanka, Lars moved to Ireland last February to join ROD's water team. Lars has more than 18 years' experience in the water and constructions sectors, including working as a director of international cooperation projects as well as privately financed projects in developing countries. A Chartered Engineer (MIEI), Lars holds an MSc in civil engineering. Lars hobbies are cycling and swimming.

Sean O'Reilly
Sean joined ROD as a HR Administrator last December. He is currently undertaking a Master's in Human Resource Management at the National College of Ireland. A Tipperary native, Sean's hobbies include football, hurling, travelling and socialising.

Paul Lafferty
Paul joined ROD as a Resident Engineer last January. His experience encompasses the construction of bridges, roads, water treatment works, wastewater works, marine works and water reservoirs. Paul graduated from Queen's University Belfast with a degree in civil engineering in 2005. He became a chartered member of Engineers Ireland in 2018. His hobbies include playing golf, swimming and restoring vintage tractors.

Alex Cwiertniak
Alex joined ROD as a Trainee Technician last January. He will be starting a part-time course in civil engineering at Technological University Dublin (TUD) in September. His hobbies include going to the gym and travelling.

Claire Cable
Claire joined ROD as a Senior Environmental Consultant last March. She is currently working on the planning and design of the N4 Mullingar to Roosky (Longford) Road project. Claire has over twelve years' experience in environmental and energy engineering, including the coordination of Environmental Impact Assessment Reports (EIARs) for major infrastructure projects. She previously worked for ROD in 2008 and again in 2011. Her interests include swimming, yoga, live music and outings with her young family.

Madalin Bunda
Madalin joined ROD in January 2020. He is a Principal Engineer with our transportation team in Otley. A Chartered Engineer, Madalin has worked in Romania, Portugal and the United Kingdom. His experience extends across a broad range of schemes from parking areas to smart motorways and across the full project life cycle from concept and detail design through to site supervision. Madalin enjoys football, cycling and spending time with his family.

Seán Bartlett
Seán joined our transportation team on a student placement in January 2020. He studied structural engineering with architecture at University College Dublin (UCD). Seán plans to return to college in September to complete the final year of his master's degree. In his free time, he enjoys karate and hiking.

Michael Naughton
Michael joined ROD as a Senior Resident Engineer on the N5 Westport to Turlough Road scheme last February. He previously worked for ROD as a Resident Engineer on the N4 Dromod–Roosky Bypass scheme (2006 to 2007). A Chartered Engineer, Michael has over 17 years' experience working on road projects. In his spare time, he volunteers with local community development groups, including the community sports centre and Tidy Towns.

John Dooley
John joined ROD as a Resident Engineer on the N5 Ballaghaderreen to Scramoge Road project in December 2019. John has almost 25 years' experience working on major motorway and single carriageway projects. He holds a BSc (Hons) degree in civil engineering. An avid hurling fan, John plays for his local GAA club and coaches the underage team. He also enjoys an occasional long walk after a golf ball.

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