Winter 2020 Newsletter Roughan & O'Donovan



ROD 2020

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I am writing this Foreword having just watched the Kilkenny camogie team win the All-Ireland with a dogged, tenacious display. Having lost the last three finals, they showed remarkable resilience to come through to win the 2020 final. We have all had to be resilient this year, adapting our home and work lives in response to

the Covid-19 pandemic. I want to pay tribute to and thank the and continuity of clients' confidence in the company. staff at ROD for the manner in which they have continued to keep This 'third generation' succession has now commenced in 2020 and our clients' projects progressing while working remotely from each an article in this newsletter records that Barry Corrigan and Eoin other. It has been a significant challenge, but our people are also O'Catháin became shareholders in the company in September dogged and tenacious. and have been appointed as Technical Directors.

It is pleasing to note the contributions that ROD is making to the I am also pleased to report that Aonghus O'Keeffe, BE, MEngSc, challenges that the country faces at the current time and articles in MBA, CEng MIEI and Lewis Feely, BEng, Dip Project Mamnt, this newsletter detail our contribution to Brexit traffic management CEng MIEI have joined Barry and Eoin as new shareholders in the measures for TII and the Dublin Port Company, and the services to company and Technical Directors since the end of November. the HSE being provided by our Buildings Team under emergency Aonghus has been with ROD since 2006. As a senior member of Covid-19 works including the delivery of ICU rooms at Connolly our bridges team, Aonghus oversees the delivery of large multi-Hospital.

disciplinary infrastructure projects, serving public and private This edition of our newsletter features an article celebrating 20 sector clients in Ireland, the UK and Europe. He also leads ROD's years of our trainee technician programme. The programme has asset information management services and BIM services, been championed down through the years by Gerry Hanney, accredited by BSI to ISO 19650 Parts 1 and 2, and he represents the sometimes against faint resistance from myself during periods of National Standards Authority of Ireland at European level in BIM recession. However, Gerry has always been persuasive, and he was standardisation. Aonghus' current project work includes the Great right. The programme has delivered many exceptional, technically Yarmouth Third River Crossing in Norfolk, enhancing Motorway gifted, and long-term employees. The programme was developed Operation Services and the A6 Dungiven to Drumahoe dualling through a relationship with St Killian's Community College in scheme in Northern Ireland. Bray and the Principal of the school, John Murphy, contributes Lewis joined ROD in 2007 and he has developed ROD's expertise in eloquently to the article outlining the value of the apprenticeship the deployment of technologies and innovative services to support model. Since the opening of our Northwood office, we have now road authorities in the operation of transport networks. He leads also established a relationship with Fingal Community College a multidisciplinary team providing clients with whole-life services and taken on our first trainee from that school. Five of our current from initial concept stage through to deployment, operation, and trainees are also profiled and outline why they opted for the ROD maintenance. programme and what they see are the benefits of it. Many thanks Lewis is currently leading the enhancing Motorway Operation to Gerry for his foresight, endeavours, and perseverance through Services programme for Transport Infrastructure Ireland as the years to establish and maintain the programme. Thanks also to Commission Manager. The programme consists of several projects Stuart Cushion who has taken on and embraced the management including the expansion and upgrade of the Motorway Operations of the programme in recent years. Control Centre (MOCC), the M50 Traffic Flow Optimisation (MTFO) ROD was first established as a partnership by Derry Roughan and Joe Civils and ITS deployment contracts and the Network Intelligence O'Donovan in 1974. A few years later, Garry Smyth and Shay Ryan Management System (NIMS) contract.

joined them as shareholders in the company. The limited company The 50th anniversary of the company will occur in 2024 and I am was first registered twenty years later in 1994 and a transition to confident that the third generation of shareholders will see ROD a second generation of shareholders commenced in 2000. This through to a 75th anniversary. transition continued through to 2008. Throughout that period (2000-2008) the first-generation shareholders remained involved with the ROD wishes all our clients, management of the business to ensure a smooth transition and colleagues, and friends a peaceful no loss of client goodwill. This included Joe O'Donovan continuing Christmas and best wishes for 2021.



as Managing Director until 2006 and as Chairman until his death in 2008. Garry Smyth was Managing Director between 2006 and 2008, and then Chairman until 2010.

Sometime ago the current shareholders developed a succession plan that envisoaes a similar process, where the second generation will gradually over a period of time reduce their shareholdings, selling to a third generation of new shareholders who are employees of the company. The second generation will remain active in the management of the company, again to ensure a smooth transition



BSc, Dip EIA Mamt, MIEMA, CEnv

Eoin Ó Catháin BE, MSc, PGDip Const Law, PGDip H&S, CEng MIEI, RConsEI, MCIArb

ROD announces new shareholders

ROD has announced that Barry Corrigan BSc, Dip EIA Barry has been with ROD since 2000. Barry leads ROD's Mamt, MIEMA, CEnv. and Eoin Ó Catháin BE, MSc, PGDip Const Law, PGDip H&S, CEng MIEI, RConsEl, MCIArb are the company's newest shareholders and they have been appointed as technical directors of the company. This leadership addition brings ROD's total shareholder group project work includes the DART+ West project, the N4 to ten and technical directors to six.

"Having a formal succession plan is important to the continuity of a strong business into the future," said ROD a desire to succeed in all aspects of the business, and we are confident that they will continue to build on the rich legacy of our founding shareholders, Derry Roughan and Joe O'Donovan, in promoting excellence and innovation in engineering. We look forward to seeing Barry and Eoin continue as key leaders in defining the future of the company and in delivering the highest quality of service to our clients in Ireland and the UK."

environmental team and has played a pivotal role in our development as an industry leader in providing environmental planning services and solutions to our growing client base in Ireland and the UK. His current Mullingar to Longford (Roosky) Road project, the Waterford City Public Infrastructure project and the N61 Ballymurray to Knockroghery Road project.

Managing Director, Harry Meighan. "Barry and Eoin share Eoin first joined ROD as a student engineer in 2003, rejoining as a graduate engineer in 2004. Eoin manages ROD's urban roads portfolio and is experienced in leading and collaborating with multidisciplinary design teams on large public and private infrastructure developments. His current project work includes the ongoing upgrade of the road, pedestrian and cycle network in Dublin Port, BusConnects, the proposed Blake's Corner Junction Improvement scheme in Ennistimon and the Clontarf to City Centre project in Dublin.

to ISO 45001



Article By Peter King

ROD is pleased to announce that, following a recent audit ROD's plans to transition our SMS from OHSAS 18001- the by the National Standards Authority of Ireland [NSAI], our former benchmark for OH&S - to ISO 45001 - began to Safety Management System [SMS] has been accredited take shape in mid-2019. With the assistance of our former to the ISO 45001 standard. This is a significant achievement Director, Richard Power, our safety team carried out a for our safety team, which not only oversaw the extension detailed gap analysis between the two standards before of the scope of our certification to include our UK office in revising our system manual, procedures, and processes to Otley, but also developed a robust COVID-19 response plan the requirements of 45001. for the company in parallel. The fact that the NSAI audit While ISO 45001 draws on OHSAS 18001, there are important was undertaken remotely, with documents and evidence differences between the two standards. The main change being shared with the auditor online, added another layer is that ISO 45001 concentrates on the interaction between of complexity to the process.

an organisation and its business environment while OHSAS ISO 45001 is the first internationally recognised standard on 18001 focused on managing OH&S hazards and other Occupational Health and Safety [OH&S] in the workplace. internal issues. In keeping with the current ISO approach to It was developed to enable organisations, regardless of its suite of accreditations, it also places greater emphasis context and size, to: on Company Management's active by-in and ongoing monitoring and improvement of its policies and practices. • provide a safe and healthy workplace for their workers, As we navigate our way through the uncertain times contractors and other visitors; created by the COVID-19 pandemic, we expect these • prevent work-related injury, ill-health; and features to assume even greater significance.

- continually improve OH&S performance.





Article by Clare Cable & Lorraine Guerin

ROD has adopted a revised Sustainability Policy to establish a framework for our ongoing corporate sustainability efforts. Written by our Sustainability Task Group and accepted by our Board of Directors last October, the policy builds on the success of our ISO 14001-accredited Environmental Management System, which complements our separate ISO 9001 and ISO 45001 accreditations. The United Nations Intergovernmental Panel on Climate Change notes that "rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems" are needed to address ongoing unsustainable development trends. ROD is committed to working towards addressing the infrastructural needs of the present without compromising the ability of future generations to meet their own needs.

There are numerous ways of visualising or conceptualising sustainability, including the "three pillars" and "intersecting circles" approaches. These provide different ways of

understanding how the three aspects of sustainability - environment, society and economy - interrelate. Our Sustainability Policy is based on the "nested circles" conceptualisation of sustainability, which acknowledges that societies and economies are entirely reliant on the proper functioning of the myriad ecosystem services provided by the natural environment for their survival.

The natural environment has biological, chemical and physical limits (or "planetary boundaries") within which environmental conditions support a "safe operating space for humanity". Corporate sustainability efforts should seek to promote a transition towards doing business safely within these planetary boundaries. ROD subscribes to the Brundtland Commission definition of sustainable development - i.e. development that meets the needs of current generations without compromising the ability of future generations to meet their own.



Celebrating 20 years of our trainee technician programme



for school leavers to pursue a career in engineering whilst planting their feet firmly in the adult world by earning their own way. The programme was initiated by <u>Techn</u>ician Associate

developed a strong

Gerry Hanney, Technician Associate Gerry Hanney, who

relationship with St. Kilian's Community School in Bray, Co. Wicklow and its then engineering teacher, Paul Connolly. Since the first school leavers from St. Kilian's CS joined ROD in 2000, many of its former students, including Eddie Poland and John Kenny, have gone on to become highly regarded members of our team. The key to the success of our programme has been in helping our trainees to pursue an engineering qualification while working on live projects with experienced and supportive colleagues.

Every year during Careers Week and Engineers Week, Bray, Co. Wicklow provided our technicians and engineers visit schools across Dublin the following insights: to talk to students about the engineering profession and our Graduate Development and Trainee Technician pupils of St Kilian's CS have programmes. We typically look for trainees who have trained as engineering John Murphy, Principal St Killians both a natural aptitude for and an interest in the role of technicians with ROD. For engineering technician. Typically, these students have many, this has been the springboard for long and successful studied design and communication graphics, engineering careers in engineering. or construction studies for their Leaving Certificate.

Once on board, ROD pays our trainees' fees to undertake a Bachelor of Engineering degree (Civil) at Technological University Dublin (TUD) on a part-time basis. After completing three years of part-time study, they earn a Higher Certificate

This year marks the in Engineering, and then transfer to the Level 7 Bachelor 20th anniversary of of Engineering Technology Ordinary Degree, which can our trainee technician be achieved with an additional two years of part-time programme at ROD. study. The trainees attend college one full day and one For the past two evening per week, with the rest of the working week spent decades, we have in one of our Dublin offices, either Sandyford or Northwood, provided an avenue depending on their placement.

> Since opening our office in Northwood, we have been keen to foster a relationship with a school on the north side of Dublin as we have done with St. Kilian's. Last year, we were delighted to have our first student from Fingal Community College, Dmitrij Sudarikov, join the programme. He will, hopefully, be the first of many to join us from Fingal Community College.

> We currently have ten trainee technicians working with us and studying at TUD, some of whom started college last September and others who are nearing the end of their five-year degree. We will continue to support them during



their career journey with us, firm in the knowledge that they have the potential become talented to design engineers and great ambassadors for our traineeship programme.

John Murphy, Principal, St. Kilian's Community School,

"For over twenty years,

In many European countries, the apprenticeship and university routes have long held equal status and respect. Contrast this with Ireland, where for academically capable students, anything other than progression to university is thought to signal a lack of ambition and/or success. Significant efforts have been made in recent years to address the decline in popularity of apprenticeships in Ireland. The variety and scope of apprenticeships is being broadened, and there is now a comprehensive range of professional apprenticeships alongside the more traditional craft trades.

The 'earn and learn' approach of apprenticeships is more attractive to many young people than the prospect of what can be a long and lonely four-year slog through college. The immediacy and energy of the work environment, the on-the-job learning, the mentorship, support, teamwork and financial independence all create a set of conditions in which young people can feel motivated to learn and grow. With experience of working on live projects, apprentices can see the real-life applications of their college work; the theory and practice are developed hand-in-hand.

The experience of young people throughout 2020 has brought into sharp focus the positives enjoyed by those in apprenticeships. Invariably, those attending university are doing so remotely, with little or no access to workshops or labs. The social side of college life is non-existent, with opportunities to join clubs and societies and form friendships much reduced. The 2020 school leavers are attending lectures and tutorials on their laptops, many for up to forty hours a week, in situations where most students have their implications for student wellbeing, and dropout rates are a major cause for concern. Contrast this with the experience of the apprentice who, while earning a decent salary, is learning, creating and being productive in a highly supported environment. Apprentices have a sense of belonging, of being valued and of contributing. They are developing and progressing and they know it.

The apprenticeship model adopted by ROD is an exemplar from which other industries and businesses could learn. To see the company's commitment to employing not just young people with proven achievements, but also those with potential and those who might benefit most from the opportunity, is reassuring. Witnessing the time and personal interest that continues to be invested in each of the apprentices after they have been employed is equally gratifying.

When I meet my former students, I can hear their pride in their chosen career and see their areat personal growth and development. For me, they are living proof of the value of apprenticeships and, in particular, of the success of the ROD programme. At St Kilian's Community School,

we are delighted and privileged to be associated with it."

Meet our trainee technicians



Alex Cwiertnek

My school principal first encouraged me to consider an apprenticeship with ROD because he thought I had the qualities you need to become a technician. He also recognised that I have always found it easier doing practical

subjects and working with my hands then reading books and trying to study on my own. When Stuart Cushion came to my school to talk about ROD, he brought Garry Short with him. Gary was finishing his first year in college at that time, and he gave his own perspective about work and college, which got me even more interested in it as a future career.

I've worked part time/full time since I was 15 years old, but thanks to this apprenticeship, I don't need to have a parttime job. This means that I have my weekends to myself, so I can study and keep on top of my college work. ROD lets us take days off for our exams and lets us finish early on Thursday at four o'clock to get to college without stressing about being late.

As a part-time student, my college experience is cameras off and mics muted. This type of scenario has different to that of a full-time student, but when I finish my apprenticeship, I will have more than five years' work experience with an engineering company, and I will only be twenty-five-years-old!



Daniel Shaw

I didn't know too much about the role of a technician until ROD's Eddie Poland and Gerry Hanney visited St. Kilian's CS and aave a presentation to my class. I enjoyed construction, engineering and maths at school, so I thought

it would be a good stepping-stone for me if I decided to pursue a career in civil/structural engineering. The opportunity to go to college and work at the same time also appealed to me.

There are times when I think it would be nice to finish my five-year part-time course in three years, and when the lecturers give assignments with deadlines on the same week, it can make part-time study challenging. However, the benefits of studying part-time while working greatly

outweigh the disadvantages. I am getting some genuine year because he thought it would be a great opportunity. work experience in the industry, and that will look good on Now that I'm here, I could not agree more. my CV, if I ever need it. I also have a mentor, Phil Cooney, I am currently in the second year of a part-time Level 7 civil who is always willing to answer any questions I may have engineering course in TUD. After 3rd year, I am hoping to whether they relate to AutoCAD, bridges or structures. ROD specialise in structural engineering because I work with the also provides study leave to apprentices and 1.5 days off bridges team here in ROD, and I feel it would be beneficial work per exam, which helps relieve the pressure during the to my work. exam period.



My school principal had been telling to me about the apprenticeship opportunity at ROD for a while, and when I heard that the company was coming to my school to deliver a talk during Careers Week, I knew it was too

Michael Gillman

good an opportunity to pass up. Listening to Stuart Cushion and the other technicians talk about the work they do every day really fired my interest. I stayed back after the talk to ask some more questions about the programme – that's how keen I was!

Istudied Engineering, Design and Communication Graphics handle the job because I took a technical drawing and an (DCG) and Construction Studies for the Leaving Certificate, engineering subject in school. so it feels only right that I have ended up in a job like this. I was a bit nervous about working at ROD and attending ROD has set up a good network between all of the trainee college at the same time, but once I started doing both, I technicians, which allows everyone to help each other. quickly got the hang of it. As long as you stay on top of the have a mentor who is available if I need help, but who also workload, things go smoothly. offers advice and make sure that I have plenty of work to My colleagues and I use Microsoft Teams to stay in touch keep busy. Now that I'm here, I can see why former students when we are remote working. Once a week, we have a of the school had nothing but good things to say about the meeting to discuss who is working on what and who can apprenticeship at ROD. help someone else out. It is a good way of ensuring that we Luke Windsor always have something to work on.



I got my first real exposure to engineering when I spent a week with a local engineering consultancy for work experience. I was assigned a mentor, who brought me around to speak to the other engineers and technicians. I

was also given a little bit of work in Revit.

At school, I enjoyed the complexity of technical drawing. I used SolidWorks for my Leaving Certificate, which was a bit of a challenge initially as it is primarily a 3D-based software package, but I took tutorials and improved my proficiency with the software. My school principal suggested that I apply for the apprenticeship programme at the beginning of 6th

For me, one of the main advantages of the part-time course is that we have the time to study the subjects in greater depth than the students of the full-time course. It also allows me to spend more time with family, relatives and my airlfriend.



Dmitrij Sudarikov

I studied in Fingal Community College where the first exposure I had to engineering was when ROD came to deliver a talk at my school. The role of technician appealed to me because I thought it would be a good place

to start in the company. I also thought I could probably



For over twenty years, pupils of St Kilian's CS have trained as engineering technicians with ROD. For many, this has been the springboard for long and successful careers in engineering.



ROD Senior Geotechnical Staff achieve RoGEP Registration



Article By Fintan Buggy

The three senior members of ROD's geotechnical staff - Fintan Buggy, Paul Kissane and Karlo Martinovic - have recently achieved RoGEP registration as ground engineering specialists. RoGEP - the Register of Ground Engineering Professionals – was established in 2012 by the Institution of Civil Engineers, the Geological Society and the Institute of Materials, Minerals and Mining in the UK. It currently has a membership of circa 700 specialist professionals. The goal of the Register is to provide clients procuring the services of geotechnical engineering and geological engineering services with a method of specifying and pre-qualifying specialists with demonstrable knowledge, competence and experience in ground engineering. The ultimate aim of registration is to increase the value and reduce the risks of ground engineering to infrastructure owners and developers as it may relate to cost, performance, programme, carbon impacts and health & safety on their projects.

In 2018, RoGEP was expanded to Ireland by agreement with Engineers Ireland and the Institute of Geologists of Ireland. All registrants must be Chartered Engineers or professional

geologists with proven experience in ground engineering. Applications must be supported by two professionallyqualified sponsors and independently reviewed and audited. Registrants qualify in one of three tiers, i.e. Professional, Specialist and Adviser, with increasing levels of experience, management and responsibility at each tier. Fintan is registered as an Adviser while Paul and Karlo are registered at Specialist grades. All three perform senior project roles on multidisciplinary teams across a range of projects at ROD, including road, rail and buildings schemes.

In 2018, ROD's geotechnical team won the Geoscience Ireland Award for Sunderland's Northern Spire Bridge at the Engineers Ireland Excellence Awards. ROD's current projects requiring significant geotechnical input include the A6 Dungiven to Drumahoe Dualling scheme in Northern Ireland, the Waterford North Quays redevelopment, which includes extensive rock stabilisation works, the Great Yarmouth Third River Crossing in Norfolk, and the N17 Knock to Collooney project (specialist geotechnical services for the route selection phase).



Article by Eddie Poland

In the past six months, great progress has been made on allowing for the demolition of the existing Burntollet bridge the construction on the A6 Dungiven to Drumahoe dualling and construction of a parallel structure. scheme in Northern Ireland, with the scheme on track for Considerable planning and effort was required not just in completion in the summer of 2022. Construction of the the fabrication of the structure's four 80 metre long 3.35m scheme's twenty-two bridges is well underway, with many deep weathering steel girders but also in the lifting/landing nearing completion. Forty-three of the scheme's seventyof the beams. This was due to the 56 degree skew of the six culverts have been completed, and the remainder are structure and the splayed arrangement of the beams under construction. ROD is delivering the detailed design for resulting from the varied width of the bridge deck. the scheme on behalf of the contractor consortium, Sacyr-Mainline/side road drainage continues to advance with the construction of filter/carrier drains and associated

Mainline/side road drainage continues to advance with the construction of filter/carrier drains and associated chambers/outfalls. Mainline alignment works are progressing, with the main bulk earthworks substantially complete in multiple areas. Finally, significant progress has been made on multiple side roads and access tracks, with the Teevan and Altagaron roads now open to the public.





Article by Aonghus O'Keeffe

Great Yarmouth Third River Crossing project secures £98m in Government Funding

The British Government has approved funding of £98 million for Norfolk's Great Yarmouth Third River Crossing, a "nationally significant infrastructure project" for the UK. This follows the Planning Inspectorate's decision in September to grant Norfolk County Council development consent for the construction, operation, and maintenance of the new opening bridge across the River Yare in Great Yarmouth. The 50m clear span twin bascule bridge and its approach roads will provide a new link across the river, alleviating congestion, reducing journey times and stimulating growth in both the port and the seaside town. The scheme is estimated to cost £121m.

The detailed design for the Norfolk County Council project is being delivered by ROD, Hardesty & Hanover

[H&H], who are global experts in moveable bridges, and Proworks, a Norfolk-based architecture firm. The design is for a construction joint venture between BAM Nuttall and Farrans Construction.

Jim Thorpe, ROD director and lead of our UK office, said: "I am delighted that the project team has achieved this significant milestone and that we have contributed our expertise in the planning and design of UK highway infrastructure". Graham Plant, deputy leader at Norfolk County Council and Great Yarmouth Borough Council, said: "This is fantastic news and means we can now make this much-needed bridge a reality. Not only will it make getting around so much easier for many people currently living and working in the borough but, crucially, it will support



This is excellent news. The Third River Crossing will be transformational for the whole of the Borough of Great Yarmouth, significantly improving traffic flows, which will help residents and visitors to get around. The improved traffic flow will also bring meaningful benefits to local businesses, especially those in the energy sector.



the town's key industries, including those linked to offshore energy and maritime sectors, tourism and manufacturing."

energy and maritime sectors, tourism and manufacturing." The complex detailed design is currently being finalised The Rt. Hon. Brandon Lewis CBE, MP for Great Yarmouth, said: "This is excellent news. The Third River Crossing will be transformational for the whole of the Borough of Great Yarmouth, significantly improving traffic flows, which will help residents and visitors to get around. The improved traffic flow will also bring meaningful benefits to local

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The Rt. Hon. Brandon Lewis CBE, MP for Great Yarmouth

businesses, especially those in the energy sector."



Work underway on Wexford bridges scheme

In December 2019, Kildare National Roads Design Office appointed ROD as consultants for the rehabilitation of a number of bridges in Co. Wexford under Transport Infrastructure Ireland's Eirspan Framework. Detailed design has now been completed for the three structures, namely Scarawalsh Bridge outside Enniscorthy, and Island Bridge and Mount Elliot Bridge, both of which are located outside New Ross. The rehabilitation works consist of strengthening and upgrade works, including parapet upgrades, new safety barriers, resurfacing and new footpaths.

Mount Elliot Bridge

Mount Elliot Bridge is a 150-year-old heritage structure. Known as a 'jack arch' bridge, this masonry arch structure consists of cast iron beams that span the bridge and support brick arches spanning between each beam. As the existing structure is no longer deemed capable of carrying heavy traffic, one aspect of its remedial works involves constructing a precast concrete 'overslab' that will sit on the existing abutments, thus preventing any future traffic

loads being transferred to the existing deck.

One of the main challenges for the design team lay in designing individual precast units that could be brought to site, landed in position, and stitched together with insitu concrete, all while keeping the road open to traffic. Ensuring the existing structure would remain stable while the contractor excavated the fill material above added further complexity.

Some additional challenges facing the design team included:

- keeping the road open to traffic whilst landing the precast units and;
- diverting services, including fibre optic cables and watermains.

Next Steps

The design package for Scarawalsh Bridge, Island Bridge and Mount Elliot Bridge went to tender in November 2020. Construction is expected to commence in January 2021.

ROD Buildings | CNU Stories





ROD was appointed by the Health Service Executive to develop REVIT models (BIM Level 2) for each of the sites. [HSE] in October 2018 for the progression of 'Community Our TA scope includes contributing to the pre-qualification Nursing Units' [CNU's] through a public Private Partnership documentation, schedules, project agreement, tender [PPP] arrangement. ROD has to date, secured planning requirements, pre-qualification of tenderers and tender permission for seven CNUs in Ardee, Athlone, Clonmel, evaluation for the proposed PPP contract. With stage one Thomastown, Midleton, Killarney and Cork City. Our team preliminary design complete and stage two procurement has progressed the civil and structural design of the CNUs well advanced, the appointment of the PPP company whilst also overseeing and managing other design team with responsibility for delivering the seven CNU schemes is activities to ensure the coordination of the design with expected to be made by the HSE at the end of the year. others being progressed across the country. ROD is also ROD has also helped the HSE and the TA auantity surveyor providing Technical Advisor [TA] services to the HSE for the to arrive at a public sector benchmark for the scheme. PPP competition.

Together with the TAs, HSE and the National Development Before submitting planning applications, our team held pre-Finance Agency, we participated in a risk workshop to planning consultations with the relevant local authorities identify suitable risk allocation and quantification. The and engaged with third parties, for example Irish Water. outputs of the workshop were used to establish inputs to the The design input also included working closely with our public sector benchmark for the scheme. design partners, MCA Architects and Semple & McKillop,



Planning permission granted for





Planning Permission Granted for 95-Bed CNU in Rathdrum

Article by Eamonn McElduff

Last September, Wicklow County Council granted planning permission for an extension to the existing hospital building at St Colman's health campus at the northwest edge of Rathdrum in Co. Wicklow. The extension consists of twoand three-storey CNU accommodation with resident wards staggered either side of a new central three-storey circulation spine containing a new main entrance, lift shafts and stair cores. The design team includes Weichert Architects, ROD (civil and structural designer), Hayes Higgins Partnership (M&E) and Turner & Townsend (QS).

The accommodation consists of ninety-five HIQA compliant single bedrooms, each with an en-suite, and arranged within 3 x 25-bed households and 2 x 10-bed dementiaspecific units. The scheme includes demolition works and significant refurbishment to the existing healthcare facilities on the campus. The site topography presented numerous engineering challenges for the design team, with the level

difference of 22 metres from the lowest to the highest point of the site chief among them.

The building superstructure will comprise a flat slab concrete frame with a variable structural grid adopted to suit internal layouts at each level. The building will be a braced structure, with the lift shaft, stair cores and isolated concrete shear walls (typically 215mm thick) providing the lateral building stability. The framed building will provide flexibility in terms of future use. With the proposed column layout adopted as a future design constraint, the removal of existing load bearing elements and their replacement with alternative superstructure and substructure structural elements will not be required.

Stage 2c detailed design is expected to begin soon. Stage 3 tender issue is expected in early 2021.



Enabling works contracts are currently being undertaken to provide access roads and site services for two new CNUs in Ardee, Co. Louth and Clonmel, Co. Tipperary. The two schemes form part of the CNU by PPP project that will deliver eleven new CNUs across Ireland.

Ardee CNU

The enabling works for the Ardee CNU will see an existing access road to St Joseph's Hospital widened to accommodate the projected increase in demand for vehicular access to the site. A segregated three-metre shared surface for pedestrians and cyclists will also be provided. Surface and foul drainage and watermains are among several services that will be provided below the road. They will service both the proposed CNU and the Ardee Ambulance Station, which is located on the grounds of St Joseph's Hospital.

Clonmel CNU

The enabling works for the Clonmel CNU include a new roundabout on the Glenconnor Road (between the entrance to the proposed CNU and the western entrance of



Last September, planning permission was granted for identified shallow rock to the north of the site) added to a new 110-bed CNU in Letterkenny, Co. Donegal. The the project complexity both in terms of access gradients proposed development is designed to cater for the needs for vehicles and pedestrians and the orientation of the of the older population in Letterkenny and its surrounding building. A full options appraisal was carried out during the areas. It is part of a national bundle of CNUs currently being preliminary design stage to determine the optimal building delivered through a PPP arrangement. location to maximise available space on-site.

As the surrounding area had been affected by previous Our buildings team worked closely with MCA Architects flood events, the sustainable drainage system [SuDS] to develop a part three-storey, part two-storey building features on-site were designed to cater for a 1 in 1000 year solution comprising a mix of long and short-stay beds, storm event. The SuDS features will also reduce the flow from including ten dementia beds, associated on-site facilities, the site to greenfield runoff rates, minimising the impact on dining rooms, kitchenettes, visitors' room, treatment room the municipal sewerage network downstream. and a hairdressing salon.

ROD is looking forward to progressing the development to Difficult topography (varying 12m from north to south) and detailed design and tender in early 2021. challenging ground conditions (a ground investigation



Enabling Works underway for Ardee



the South Tipperary General Hospital). With significant level differences on the site and access road for the proposed CNU, a combination of significant banks and various retaining walls will be required.

Numerous live services currently cross the site, and they will be diverted in multiple phases to accommodate the new CNU. Any new services required will be located in the new access road. A new ESB substation and customer switchroom have been included in the enabling works. which will require full BC(A)R inspections and reports.



Planning permission has been granted for the first phase of a new 130-bed CNU at St Vincent's Hospital in Mountmellick, Co. Laois. The project involves the redesign of the entire hospital campus and the delivery of circa 7,500m2 of modern healthcare facilities compliant with the spatial regulatory requirements of the HIQA National Standards for Residential Care Settings for Older People in Ireland. ROD is providing civil and structural engineering design services for the development to the Health Service Executive [HSE]. Our design team partners include Scott Tallon Walker Architects, Hayes Higgins Partnership, Atkins Global, FCC Fire Cert Ltd. and O'Reilly Hyland Tierney & Associates.

The proposed structure consists of a flat slab concrete frame, which provides greater flexibility in terms of services and architectural layout than other structural solutions, and therefore represents the most economical design for a two-storey CNU building. The project has been following a BIM methodology which has, by supporting greater collaboration between the project stakeholders, provided for a fully coordinated design. The federated model allows us to identify areas where conflicts between the various disciplines' designs would potentially occur, allowing us to address and resolve them at design stage.

Phase one

The key deliverables of phase one include the design of the campus masterplan and the construction of a new 50-bed. two-storey reinforced concrete framed building to the east of the existing nursing care unit. With planning permission granted, enabling works for phase one are currently underway on-site. The works will provide an upgraded parking area for the campus, replacing the parking facilities that will be displaced during the construction of phase one. A new fire-fighting water storage tank will also be built to serve the existing and future development. The design team is currently working on the detailed design stage of phase one with a view to going to tender before the end of the year.

Phases two and three

Phase two will involve the refurbishment of a large section of the existing two-storey nursing care unit to provide 30 HIQAcompliant bed spaces. Phase three will then involve the construction of a 50-bed, two-storey reinforced concrete framed building to the west of the campus. The two 50bed units delivered in phases one and three will replace the existing single-storey accommodation on the campus. It is envisaged that Phase 1 will be completed on site in the second half of 2022, with the subsequent phases to follow.

State-of-the-art CNU in South Donegal starts construction Article by Andrew Thomson

Construction has recently begun of a new 80-bed CNU on of a dual carriageway southern link road to provide a new the site of Shiel Hospital in Ballyshannon, Co. Donegal. ROD entrance to the hospital and ease local traffic congestion. is providing civil and structural engineering services for the The works will provide sixty-six single bedrooms and seven development. The wider project team includes Rhatigan twin bedrooms in a combination of long stay, short stay Architects, Varming Consulting Engineers (M&E) and Turner and specialist dementia wards. The scheme also includes & Townsend (QS). The Main Contractor is Letterkenny-based significant upgrades to the existing hospital building - such Boyle Construction Ltd. and the Employer is the Health that day hospital and other ancillary services can be provided Services Executive (North-West). to the people of south Donegal and the surrounding areas. Shiel Hospital is a 3-storey listed building dating from the 19th The steeply sloping site and the need for drainage consents to the River Erne added further complexity. To meet these challenges, our buildings team has drawn on the expertise of geotechnical.

century. Protecting and retaining the existing character of the building while complementing it with a new modern facility has been a key challenge for the project team. our colleagues in ROD, including traffic, environmental and The biggest challenge is bringing the historic building to a standard compliant with current national best practice. The The project has a 24-month construction programme and is scheme consists of a modern extension to Sheil Hospital, with due to be completed in the autumn of 2022. associated car parking and site services, and the construction



In early 2020, the HSE submitted plans for a new 60-bed experiences high traffic volumes during the morning and CNU on the grounds of Merlin Park Hospital in Galway. afternoon peak times. To manage this additional challenge, The proposed development consists of a two-storey ROD's transportation team completed network and building and includes a 10-bed dementia-specific unit and junction analyses, producing a Transportation Assessment associated residential facilities. and Mobility Management Plan to accompany the planning submission. ROD enagged MCA Architects and Semple & McKillop to

ensure the design of the proposed building and access road minimised impact on the existing hospital campus. The team faced several design constraints when developing the proposed solution, including:

protected woodland to the north of the site;

an existing building to the south of the site;

limited available space on site; and

existing services in the area.

The south of the campus is bounded by the Dublin Road, which provides a direct link to Galway city centre and



Plans for 60-bed CNU at Galway's

ROD is currently preparing an Enabling Works package in anticipation of planning permission being granted in late 2020. The enabling works include the demolition of ancillary buildings within the proposed site and the diversion of a watermain and surface water and foul sewers. These works will ultimately allow the CNU Main Contractor to work on site without impacting existing campus services.

Detailed design for the main works will begin when planning permission has been secured. Tender issue is expected in early 2021.



Article by Kieran O'Riordan

The northern wing of St Fintan's Hospital in Portlaoise is on track to be completed in early 2021. currently undergoing an extensive refurbishment project. The aim of the scheme is to enable the building, which first opened as a psychiatric hospital in 1832, to deliver 21st century healthcare. The building's original floor plan with condensed, small rooms made the task of designing a modern healthcare facility more challenging.

The design team includes RKD Architects, ROD (civil and structural engineer), RPS (building services engineer) and ORS (PSDP). The main contractor is Kelbuild Ltd. The existing masonry vaulted ceiling complicated the provision of structural openings, with the distribution of the vertical load path to the existing foundations requiring careful consideration and sequencing. The two-storey reinforced concrete extension, steel framing for the feature entrance, and the permeable paving carpark are now complete, and phase two of the construction stage of the project is

As with any refurbishment project, the design team encountered some surprises along the way, including the discovery of a broken watermain in the courtvard area that proved problematic for the new foundations. Internally, sections of the existing wall were found to have been constructed using rubble, and old chimneys were aligned at forty-five degrees. These issues were addressed through proactive and constructive collaboration with the contractor.

ROD's appointment has been extended by the HSE for emergency Covid-19 works to the southern wing of the building. This involves structural internal modifications and an upgrade to the drainage system. ROD is working to a challenging programme, with construction expected to start imminently.



Article by Gerry Hanney

New Housing Project at Cornamona Court in Ballyfermot

ROD is providing civil and structural engineering services for on the site was found to be particularly high, ground the Cornamona Court development, an estate of sixty-one anchors and contiguous perimeter piled walls were used in social houses and apartments on a site at Kylemore Road the design of the basement car park. in Ballyfermot, Dublin 10. The design team also includes The structural solution for the apartment blocks employs a combination of flat slab and beam and slab construction at ground floor/podium level. A 525mm insitu transfer slab at second floor, above the duplex units, allows for the change in the loadbearing party wall locations on plan. Precast concrete hollowcore floor slabs span between the party walls. The party/core and perimeter insitu concrete walls also support long span steel members, which in turn support the walkway and balcony precast slabs and blockwork. Complex detailing was required to allow for the required thermal bridging to comply with the building codes. The building was modelled in 3D using REVIT.

Paul Keogh Architects, Austin Reddy & Company (QS), Varming Consulting Engineers (M&E) and Cunnane Stratton Reynolds (landscape architect). The development comprises two main blocks of four and five storeys over a large undergound car park basement and a terrace of sixteen two-storey houses to the west of the site. The main blocks consist of duplex and one / two bedroom apartments. The duplex units and houses have their own private front and rear gardens. The large podium slab between the two main blocks and the houses will form the roof to the car park and will provide a shared landscaped courtyard for the residents' use above. The Construction began in May 2019, with Cunningham courtyard provides hard and soft landscaped areas, Contracts Ltd. as contractor. The construction period is including a garden area related to the community room programmed to take 90 weeks, with substantial structural and a separate children's playground. As the water table completion expected by December 2020.



National Ambulance Service Centre at Ardee



Article by Laura Fernandez Vila

In early 2020, Louth County Council granted planning permission for a new National Ambulance centre in the parkland surrounds of St Joseph's Hospital in Ardee, Co. Louth. The proposed development comprises offices and rest areas for staff, a garage for vehicles, a wash area and external covered parking for ambulances. Operating on a 24/7 basis, the base facility will provide clinically appropriate and timely pre-hospital emergency services to Counties Louth and Meath whilst also supporting the National Ambulance Service [NAS] response to any major emergency.

To ensure the facility meets the functional needs of a stateof-the-art ambulance centre, HSE Estates and the NAS have adopted a collaborative approach to the development. ROD is providing civil and structural engineering services for the development. Our design partners include Moloney

O'Beirne Architects (architects), IN2 (M&E) and McGahon Surveyors (QS). For our part, we have been working closely with our design team partners to ensure the centre complies with all NAS requirements. To this end, we have created a federated BIM model to support efficient collaboration between the various design disciplines.

The steel framed structure of the main facility building has been designed to provide the maximum internal flexibility for future use. To integrate the building with the protected parkland landscape and minimise its impact, treated larch cladding has been used in all elevations while gabion retaining structures have been used selectively.

The project is at the detailed design stage, with tender documentation currently being finalised. Construction is due to begin early next year.



Connolly Hospital Intensive Care Unit Block



Article by Andrew Thomson

Following on from the Connolly Hospital Protected two floors provided in a shell and core state to allow for Development Control Plan Project which was completed future expansion of the nearby Emergency Department in 2017, Connolly Hospital Estates appointed ROD to act as well as other ancillary services required by Connolly as both civil and structural designer to deliver a significant Hospital. extension to the existing Intensive Care Unit (ICU) with The project team consists of Cullen Payne Architects, ROD as the civil and structural Engineer, Varmings Consulting Engineers as M&E and AECOM as Quantity Surveyors. The Main Contractor is Boyle Construction Ltd based in Letterkenny, and the Employer is Connolly Hospital Estates. The project is intended to progress as quickly as feasible with planning aimed in Q1 2021.

the provision of a new block in an existing courtyard. This building is being expedited as part of the HSEs emergency Covid-19 works. The development is planned to deliver 12 full isolation ICU rooms for Connolly Hospital in a multi-storey building. It is also intended that the building shall have an additional







Article by Stephen Maher

Construction underway on new primary care centre in Newtowncunningham

Work on a new Primary Care Centre in Newtown cunningham, Co. Donegal, began on-site in September. The scheme is located at the site of an 18th century country house known locally as 'The Castle'. It is being delivered as boundary of the site. part of a network of primary care / health centres servicing the Lagan Valley Area Primary Care Team in East Donegal.

ROD has successfully delivered the scheme through preliminary design, developed design, planning, detailed design, tender, and construction and has now begun on site. Our design team partners include Peter Tracey Architects, Patrick McCaul (M&E) and Albert Strain & Associates (QS). Letterkenny-based McDermott & Trearty Construction Ltd. has been appointed by the Health Service Executive (HSE) as the main contractor. The contract sum is approximately €2.6 million.

The infill site presents challenges in accommodating the access road off Main Street in Newtowncunningham.

To achieve the required Finished Floor Level, significant removal of spoil from the site was necessary. This in turn required significant retaining structures to the west

The building itself complies with Near Zero Energy Buildings [NZEB] in the Energy Performance in Buildings Directive which requires "a very high energy performance as determined in accordance with Annex 1. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced onsite or nearby." Part L of the Building Regulations defines this requirement in legislation. The NZEB standard applies to all new buildings occupied after the 31st December 2020, and the 31st December 2018 for public sector bodies. Achieving this requirement requires close liaison between the structural and architectural detailing throughout the building at all stages in the design process.

Phase 2 of Shepheard Lodge **Development Complete**



Article by Andrew thomson

ROD is pleased to announce the completion of the second ROD worked closely with OMP and Meath County Council to ensure that the layout was fully compliant with the phase of the Shepheard Lodge housing development in Bettystown, County Meath. The first phase of the Design Manual for Urban Road and Streets [DMURS] and development was completed and handed over to Meath that shared surfaces for both pedestrians and vehicles were County Council in 2016. The second phase of the scheme provided. This passively safe arrangement mimics European best practice and is part of a progressive move away from consisted of sixteen houses and six apartments in a single block, with associated external and site development the 20th century's car dominated housing estates. As part of the scope of works, ROD produced a detailed Flood works. The project team comprised O'Mahony Pike Architects (OMP), ROD (civil and structural engineer), Risk Assessment (FRA) which was implemented on-site to Semple & McKillop Consulting Engineers (M&E) and resolve the localised flooding that occurred outside the site Mulcahy McDonagh & Partners (QS). in the recent past.





Article by Stephen Shorthall

Nazareth House refurbishment gets underway

The refurbishment of Nazareth House, a residential care facility for the elderly in Sligo, began on-site last August. Nazareth House is a protected building that was first opened in 1910 to provide accommodation for the less well-off, and in particular orphans. The purpose of the refurbishment project is to increase capacity at the facility for residents and staff. The project team includes Reddy Architecture and Urbanism, ROD (consulting engineers), McCauls (QS) and Wallace Whittle (M&E).

refurbishment of one half of the building and the provision of several new essential services and treatment rooms. This

first phase has been expedited to enable HSE North-West respond to the increasing demand placed on its services due to the COVID-19 pandemic.

The second phase of the project is designed to prepare the campus for the remaining refurbishment works. It involves adding over 140 car parking spaces to the healthcare campus, upgrading much of the road drainage on-site and constructing a large surface water infiltration tank. This works package was issued for tender last October, and the Phase one of this five-phase project involves the HSE is hoping to appoint a contractor before the end of the vear.

Case Study for UCD's 5th Year Engineering Students



Article by Eamonn McElduff

ROD's buildings team was invited to create a case study for 5th year students in University College Dublin's (UCD) School of Engineering earlier this year. This was our sixth consecutive year to do so and, on this occasion, our team was looking for structural engineering solutions for the superstructure of a large supermarket.

The challenges within the case study included:

- dealing with medium and long span solutions for the roof structure:
- identifying the vertical and lateral load paths;
- managing overall building lateral stability;
- sketching key interfaces and member end connections;
- innovation;



- identifying value engineering proposals; and
- health and safety in submitted design proposals.

We split the students into eight groups before asking each group to find a solution that would address practical issues, such as constructability, spatial constraints associated with columns being permitted in certain areas only, restrictions on bracing to glazed facades etc. The groups then presented their proposals to us via Zoom. After providing our feedback on the pros and cons of each of the student group's proposals, we presented ROD's suggested solution, explaining our rationale behind the structural concepts adopted. The ROD solution was then subject to a round table discussion with the students, whose rigorous questioning and intelligent feedback gives us great cause for optimism for the future.



Article by Aoife O'Keeffe

Dublin City Council has granted planning approval for the redevelopment of the Old Library Building in Trinity College Dublin. The project is designed to safeguard the 18thcentury building and conserve its vast collection of treasures for future generations. A new state-of-the art Research Collections Study Centre will also be provided. The scheme is being led by a 'single point' design team that includes ROD, Heneghan Peng, Lotts, FLN, WH Stephens, Arup and OLM.

As one of the most impressive libraries in the world, the Old Library attracts over one million visitors every year. Its main chamber, the Long Room, is home to many precious manuscripts, including the world-renowned Book of Kells. The Old Library also houses 200,000 of the college's oldest books, as well as historic collections including marble busts of the great philosophers and writers of the western world. The new Research Collections Study Centre, which will be provided as part of the redevelopment scheme, is designed for students and scholars both nationally and

internationally, with a Virtual Trinity Library providing digital access to its unique collections across the world.

With external pollution and dust accumulation taking their toll on the fabric of the Old Library building and its collections, the proposed scheme seeks to deliver the structural and environmental upgrades necessary to protect the structure into the future. Large quantities of mechanical plant and services will be accommodated in an underground plantroom immediately south of the Old Library building. The proposed lower level will also provide a new visitor entrance to the Old Library building through the existing Podium building. The East Pavilion to the Old Library building will be extended below ground level to provide this pedestrian linkage. Significant air handling and fire mitigation for both the building and its valuable collection require close liaison between the structure and mechanical air supply, and extraction ductwork has been designed to be sympathetically and carefully accommodated within the existing structure.

closer to realisation



The River Dodder provides a valuable linear green corridor surveyed the greenway corridor for rare and protected within urbanised south Dublin. In addition to providing plants and animals, invasive species and habitats. Of habitat to countless species, including the otter, badger and particular concern was the potential impact of the kingfisher, it provides an attractive amenity for the public greenway on light-sensitive bat species. To collect baseline to walk and cycle along, thereby facilitating more active data on the distribution of bats along the greenway, living. The Dodder Greenway Project seeks to develop an transects were walked using bat detectors that can identify, upgraded 17km premium walking and cycling route along record and georeference bat calls. Thermal imaging and the River Dodder corridor. It will ultimately extend from a radio telemetry study were also undertaken. The radio Grand Canal Dock in Dublin City to Bohernabreena in the telemetry study involved trapping bats and fitting them with foothills of the Dublin Mountains. tiny radio transmitters designed to track them to their roosts.

ROD has been involved in the development of the Dodder In October 2017, SDCC granted planning permission for Greenway project from the very beginning, having the south Dublin section of the greenway. In 2019, ROD prepared the Feasibility Study for the project on behalf was engaged to undertake a pre-construction survey and of South Dublin County Council [SDCC] and the National provide construction stage ecological monitoring for the Transport Authority in January 2013. The study found that project. the greenway was viable and consistent with planning Phase two of the greenway is nearing completion with the installation of three bridges, 2.6km of improved paths and 750 metres of new paths. The detailed design of the public lighting along the greenway has been a complex issue and will involve significant deviations from public lighting guidelines to avoid adverse impacts on bats, in particular the light-sensitive Daubenton's Bat. Following our consultations with the National Parks and Wildlife Service [NPWS], we are confident of reaching an agreement that will address both the public safety concerns and the protection of bats, allowing us to develop a 'bat-friendly' lighting system on a par with the most advanced in Europe.

policy. The proposed strategy for the construction of the greenway sought to maximise the use of the existing network of built surfaces, footpaths and footbridges and highlighted the need for careful consideration of the environmental constraints along and within the river. In 2014, ROD was engaged by SDCC to provide planning and environmental consultancy services to advance the Part VIII application for the greenway within the SDCC and Dún Laoghaire-Rathdown County Council jurisdictions. In preparing the Ecological Impact Assessment [EcIA] that accompanied the planning application, our ecologists







Article by Patrick O'Shea

Cloncurry to Ferrans Lock Greenway

The Cloncurry to Ferrans Lock Greenway is a 2.5km section of the Royal Canal Greenway straddling the Meath-Kildare border about 2km east of Enfield. Our Environmental Team is completing the overarching Ecological Impact Assessment Screening Report and an Appropriate Assessment (AA) Screening Report in support of the two separate Part VIII Planning Applications for Kildare and Meath County Councils.

While construction of the Royal Canal Greenway generally involves the resurfacing and widening of the original canal towpath, the section between Cloncury and Ferrans Lock is particularly constrained by its proximity to the Dublin-Sligo railway line and the steep exposed bank separating it from the canal. The solution was to construct a new greenway on the opposite bank to the existing towpath between Cloncury and Ferrans Lock. However, the ecological survey found evidence of the pine marten and badger in the area, which included sections of woodland, peat and meadow. These findings brought further challenges to the project, including:

- minimising damage to the woodland;
- maintaining the meadows outside the greenway footprint;
- managing the presence of protected mammals in close proximity to the route; and

• building the greenway on peat.

A range of mitigation measures was agreed with our client, Meath County Council, and included in the planning report. These included:

- a 'no dig' construction methodology in the woodland;
- reducing the total width of the greenway from five metres to three metres; and
- routing the greenway to avoid large yew trees, Scot's pines and oak trees in the area.

The project received planning consent in 2018. During the construction phase, ROD was engaged by Meath County Council to act as Ecological Clerk of Works. This involved supervising that the environmental mitigation measures described in the planning documents were implemented on site. It also involved marking out the route through the woodland with Waterways Ireland to ensure that the greenway avoided the bigger and more unusual trees, and that the final width did not exceed three metres.

Construction of the Cloncury to Ferrans Lock Greenway was completed in November 2019, with the mitigation measures delivering an interesting section of the Royal Canal Greenway that winds through beautiful woodland and provides a refreshingly different feature to the canal towpath widening provided elsewhere along the route.

A6 Randalstown to Castledawson: Second phase set to open



Article by Brian Eadie

The second phase of the A6 Randalstown and Castledawson junction at the tie-in with the M22, opened in August 2019. dualling scheme in Northern Ireland is on track to open This section has greatly improved road safety and reduced under temporary traffic management before the end of travel time for road users. It has also won several industry 2020. Work on this 7.4km section of dual carriageway to awards, including most recently Infrastructure Project of the the Castledawson roundabout is well advanced, with nine Year at the UK National Government Opportunities (GO) bridges, an underpass, 38 culverts, earthworks and surfacing Excellence in Public Procurement Awards 2020. substantially complete. Difficult ground conditions have ROD, in 50:50 design joint venture with ARUP, delivered the detailed design for the 15km dual carriageway scheme on behalf of Graham Farrans joint venture (GFJV). We currently

substantially complete. Difficult ground conditions have been successfully managed using band drains and up to four metres of surcharge in some areas. The first phase of the scheme, consisting of a 7.5km section of dual carriageway between Toome and Randalstown and including the reopening of the Randalstown West



Waterford North Quays project awarded €110.6m in State funding



Article by Christian Smith

The Government has announced funding of €110.6 million for Waterford's North Quays infrastructure project. The funding package is made up of €80.6 million from the Urban Regeneration and Development Fund (URDF) and €30 million from the Department of Transport, through the National Transport Authority. This investment will ensure the key infrastructure elements necessary to underpin the viability of the proposed north quays redevelopment are in place, including the River Suir Sustainable Transport Bridge and a sustainable transport hub in the centre of the North Quays site. These works are expected to begin in 2021.

The integrated multi-modal transport hub in the centre of the north guays site will be the first fully covered transport interchange hub between rail, bus, cars, cyclists and pedestrians in Ireland. Waterford (Plunkett) railway station will be relocated onto the site, and will be complemented by a bus set down area; short-term parking facilities; a link

with the proposed Waterford to New Ross Greenway; and the connection to the new sustainable transport bridge. This development will support a modal shift towards walking, cycling and public transport, and will act as a catalyst for more sustainable accessibility to the historic city centre on the south of the river.

The 207m five span bridge across the River Suir Special Area of Conservation (SAC) is designed to accommodate pedestrians, cyclists and public transport and will incorporate an opening centre span to allow river traffic through. The bridge will extend Waterford City Centre across the river to encompass the North Quays Strategic Development Zone (SDZ), including a new sustainable transport hub for the city.

ROD is providing planning, preliminary design, detailed design, tender, construction supervision and handover services for the infrastructure project to Waterford City and County Council.

The planned north quays redevelopment, on an eightexpressed his Department's support for the development, hectare site, will include a major shopping centre, offices, describing the entire project as "an example of apartments, leisure facilities and a hotel. It is expected to how sustainable transport can help drive economic create nearly 2,300 full time jobs by 2026. development, while also providing improvements in Minister for Transport, Environment, Climate and peoples' quality of life in our regional cities."

Communications and Green Party Leader Eamon Ryan TD



The €80*m investment in the North Quays project by the Department of Housing* represents one of the biggest government interventions in the South East region in many decades. With this fund, and the advancement of the Technical University for the South East, we are finally seeing a growing confidence in the region and a government willing to invest in what will be a counterbalance to the lop-sided expansion of the greater Dublin area.







Article by Brian Feighan

ROD was engaged by Transport Infrastructure Ireland [TII] and Dublin Port Company [DPC] to support their respective preparations for Brexit

ROD assisted TII in preparing a Brexit readiness strategy encompassing both infrastructure and communications. Resilience measures identified in the strategy are currently being installed to facilitate the management of truck traffic on the road network in the event of delays in Dublin Port causing congestion on the feeder road network, in particular the Dublin Tunnel and the M50 and M1. These measures include a turnaround facility at M50 Junction 1 (Dublin Port) and ramp metering signals on the M50 to tunnel slip road.

The deployment of lane control signals between Junctions 4 (Ballymun) and 3 (M1) on the M50 Northbound has been accelerated to provide additional information to drivers in the event of pre-planned Brexit traffic management measures being implemented. These include storage of port-bound HGV s on the M50 to tunnel free-flow loop and enhanced storage capacity on the M1 approach to Dublin Tunnel. A multi-agency Brexit Traffic Management Group has also been established to oversee the implementation

of key traffic management decisions should delays arise.

ROD's support of DPC's Brexit preparations included traffic modelling of the impact of new customs check and State Services facilities and the redesign of Dublin Port's road network to adapt to same. An extensive traffic modelling exercise was undertaken to assess the likely impact of the new Brexit related checks on traffic throughput, and the associated potential for queuing in the port road network. Various scenarios were assessed based on different operational scenarios advised by the Office of Public Works [OPW]. A revised signage strategy is being implemented to assist wayfinding to the new customs and State Services facilities.

While the best available data indicates that the measures taken within the Port to date should buffer potential adverse impacts of Brexit custom checks, the additional measures implemented on the national road approaches towards Dublin Port will provide further shock-absorbing capacity before off-network truck storage is required. In addition to the on-line measures TII are finalising arrangements for additional Emergency HGV Parking facilities at the M1 Motorway Service Areas and adjacent to the M50 corridor.

Clanbrassil Street and St. Nicholas Quarter rejuvenation scheme



Article by John Ahern

The Clanbrassil Street and St. Nicholas Quarter rejuvenation reconfiguring it as a pedestrian-friendly public realm with scheme in Dundalk town centre was officially opened by natural stone footways, kerb buildouts and traffic calming features in line with the Design Manual for Urban Roads and Cathaoirleach of Louth County Council, Councillor Dolores Streets (DMURS). These included: Minoque, in September. The €5.5m scheme included Clanbrassil Street, Church Street and part of Bridge Street provision of wider granite footpaths and asphalt up to St Nicholas' Church. ROD provided civil and structural parking bays engineering services on the scheme, with BDP acting as upgrading of public lighting lead consultant.

Speaking at the official opening, Councillor Minogue said the scheme had "been designed and constructed to the undergrounding of overhead ESB cables; and highest standards and will bring new life to the centre of refurbishment and upgrading of water services the town." Chief Executive of Louth County Council, Joan Martin, echoed these sentiments saying: "This is a great day The Church Street/Bridge Street/Linenhall Street junction for the town of Dundalk. The completed scheme is very was reconfigured to provide a public open space with welcome, and it has transformed the main spine of the planting and seating in front of St. Nicholas' Church. town, as well as making it more attractive for investment, ROD is proud of our involvement in this exemplar of and increasing visitors to the town."

regeneration design, transforming old infrastructure into The scheme transformed the historic centre of the town by renewed attractive and people-friendly urban space

- improved pedestrian crossings



Article By Conor Lehane

Contracts signed for the Realignment of the N₂6 at Cloongullane

The contract for the construction of the realignment of the N26 at Cloongullane near Swinford, Co. Mayo has been awarded to BAM Civil Ltd. The contract signing AECOM acted as consultant engineers for the planning, marks a significant milestone for ROD-AECOM. Since our detailed design and procurement stages of the project (TII appointment to provide engineering and environmental services for the project in 2015, we have supported Mayo County Council and Mayo National Roads Office [NRO] through every phase in the development of the scheme, culminating in An Bord Pleanála granting approval for the project in December 2018.

safety of road users, reduce journey times and improve access from east Mayo to the north of the county. It involves the construction of 1.8km of Type 2 single carriageway and

includes an 83 metre clear span steel composite bridge over the River Moy Special Area of Conservation [SAC]. RODphases 1 - 5). We will now continue our involvement in the project through the provision of contract administration services (TII phases 6-7).

The project is one of several major road schemes in the west of Ireland for which ROD is currently delivering engineering services. These include the N5 Westport to The proposed road development aims to improve the Turlough Road, N5 Ballaghaderreen to Scramoge Road and N61 Ballymurray to Knockcroghery Road projects. The N60 Oran Road project in Co. Roscommon was completed last September.

N60 Oran Road project reaches completion

successfully completed, eliminating a series of dangerous Mid-West region."

bends on the national road network, significantly improving The recently retired Chief Executive of Transport road safety and enhancing the connectivity of rural towns Infrastructure Ireland (TII), Michael Nolan, said: "The N60 and villages in the Mid-West region. Oran Road Project offers significant long-term safety The project was designed by the Roscommon National benefits for all road users and removes one of the most Roads Regional Office (NRRO) and cost over €14m. It notorious bends on the national road network. On behalf involved the realignment of approximately 3.4km of the of TII, I want to thank Roscommon County Council, our N60 national secondary route, including 2.1km of offline team in the National Roads Office as well as the Consulting construction and 1.3km of online single carriageway Engineers Roughan & O'Donovan and the contractor Wills widening, and the construction of four at-grade junctions Bros Ltd for a job well done!" along the route. The Chief Executive of Roscommon County Council,

provide consulting engineering services for the contract administration, construction supervision and handover of the scheme. Work began on site in May 2019, with Wills Bros Roscommon and the west region generally." Ltd. as the contractor.

Minister for Climate Action, Communication Networks, of the scheme. We look forward to continuing our and Transport, Eamon Ryan, TD, said; "Since the inception of the programme for Government it has been a core on the N5 Ballaghaderreen to Scramoge Road and the N61 objective to develop safer and more sustainable transport infrastructure in Ireland. This development is

N56 Letterilly to Kilraine Road Scheme, Donegal

Donegal County Council has engaged ROD to provide consists of 4.1km of Type 3 single carriageway, with a construction and handover stage consulting engineering 2.5m wide cycletrack and 0.6km of pavement overlay, services for the N56 Letterilly to Kilraine Road scheme. realignment of five local side roads and direct accesses, a This is the third scheme along the N56 to which ROD has new arch bridge structure and reinforced soil wing walls. It also includes part demolition of Sruhangarve Bridge. been appointed in the past three years. The appointment was made under the Transport Infrastructure Ireland [TII] The scheme involves construction close to and within both Technical Consultancy Services Framework Lot 1C.

The proposed works will upgrade the existing carriageway, which is poorly aligned and narrow with frequent junctions mussels have been recorded. and accesses. It is located just north of Glenties, at the Construction is due to begin in January 2021, and Wills Bros north west edge of the Blue Stack Mountains. The scheme Ltd. has been appointed as the Contractor.

The N60 Oran Road project in Co. Roscommon has been a significant step in the right direction on both fronts for the

ROD was engaged by Roscommon County Council to Eugene Cummins, said; "The completion of this important road project improves road safety and will benefit the industrial, economic and tourism development of County

ROD was delighted with the opportunity to support Commenting on the successful completion of the scheme, Roscommon County Council in the successful delivery association with the Roscommon NRRO through our work

Ballymurray to Knockcroghery road projects.

Article By Daire O'Riagáin

the West of Adara/Maas Road Special Area of Conservation [SAC] and the Owenea catchment where fresh water pearl

Public consultation on DART+ West route





The first phase of public consultation for DART+ West, the project which provides for the electrification of services on the Maynooth and M3 Parkway lines, was launched by the Minister for Climate Action, Communication Networks and Transport Eamon Rvan TD and held during August and September 2020. DART+ West is the first phase of the DART expansion programme, which aims to significantly increase capacity on all the rail corridors serving the Greater Dublin Area. The programme involves the electrification of services on the Maynooth, Drogheda and Celbridge lines, the purchase of new DART trains and the upgrade of the existing South/ East line to Bray/ Greystones.

Speaking at the launch, Minister Ryan said:

"DART+ West will have a hugely positive impact, not just at its terminal points in Maynooth and Dunboyne, but in areas like Glasnevin, Broombridge, Pelletstown, Ashtown, Castleknock, Coolmine, Clonsilla, and Leixlip, all of which will now be on an integrated, electrified, fast and reliable, rail network. If we are serious about reducing greenhouse gas emissions - and I know I am - this is precisely the kind of project that should be happening."

The public consultation was designed to give local communities and stakeholders an opportunity to provide feedback on the emerging preferred option. ROD, with our partners IDOM, worked closely with larnród Éireann and the National Transport Authority (NTA) to manage the preparations for the public consultation. The process was led by our Technical Director, Barry Corrigan, who ensured the successful completion of key tasks including:

- notifying the local community of the commencement of the consultation process through an information leaflet which was delivered to over 12,000 properties along the corridor
- preparing a public consultation brochure, in both the Irish and English languages, presenting the key details of the DART+ West project and the emerging preferred option
- presenting the relevant project information, together with the Preliminary Option Selection Report, on the project website www.irishrail.ie/DARTMaynooth

The Railway Order application is expected to be submitted in 2021.



R263 Fintra Bridge & Road Realignment

ROD is pleased to report that Donegal County Council has approved the Part 8 Planning Application for the R263 Fintra Bridge and Road Realignment in July 2020.

The R263 is a part of Fáilte Ireland's Wild Atlantic Way We have completed the route selection, detailed appraisal tourism route that provides access to Sliabh Liag Cliffs (with and preliminary design for the scheme. In addition, we c.200,000 visitors per annum), and it is a strategic route have prepared the Environmental Impact Assessment and serving the entire Gleann Cholm Cille / Malin Beg Peninsula. Appropriate Assessment screening reports, which assisted Donegal County Council in making its determination that The scheme involves an upgrade of the existing R263 with neither an Environmental Impact Assessment Report nor a Stage 2 Natura Impact Statement were required.

the provision of a new section of road commencing at the roundabout on the Western side of the Killybegs and extending approximately 1.4km to the west. A new 26m We are now currently progressing with the ground span bridge will be provided to the south of the old Fintragh investigation contract, Compulsory Purchase Order Bridge, which will be retained in situ for pedestrian & cycle documentation and detailed design. access. The proposed road will provide a new 1.9km

Article By John Bell

pedestrian and cycle route between the Killybegs Industrial Road and the accesses to Fintra Beach, Scoil Fhionntrá Primary School and Killybeas GAA Club.

RODIS News Update



DIRIZON (advar

The two-year t DIRIZON project r (advanced options T

for authorities in light of automation and DIgitalisation hoRIZON 2040), which was funded under the CEDR 2017 Automation call, was brought to a close at a virtual seminar last November. The event was attended by the DIRIZON consortium, which consisted of four partners, namely ROD, TNO, Albrecht Consult and AustriaTech. Also in attendance were members of the CEDR Programme Executive Board, the CEDR Working Group on Connected and Automated Driving [CAD] and relevant parties from both industry and academia.

The Digitalisation of road networks and the rapid developments being made in Automated Driving will affect the core activities National Road Authorities [NRAs] undertake in the future. In addition to providing new and more efficient ways for NRAs to achieve their goals for road safety, traffic efficiency, the environment and customer service, these advances offer new business opportunities. In the case of digitalisation, for example, NRAs may find new opportunities arising from data sharing and the improvement of traffic management and asset management processes. The extensive data collected may also be used to support

Article By Mark Tucker

the safe and efficient use of automated vehicles on their networks.

The goal of the DIRIZON project was to support NRAs in identifying how developments in Digitalisation and Automated Driving will affect their operations and their interaction with other actors. By focusing on the growing technical cooperation between NRAs, service providers and Original Equipment Manufacturers, we succeeded in providing a concept for a technical data-exchange platform with corresponding business model archetypes for its exploitation. We employed three use cases particularly affected by Digitalisation and Connected Automated Driving, namely, provision of High Definition maps for automated mobility; Distribution of Digital Traffic Regulation; and infrastructure support services for CAD.

The DIRIZON project provided a practical roadmap for the step-by-step development and transition of road operation to digitisation. A set of business models for the co-financing and operation of a suitable platform for data sharing between public and private sectors was proposed. A suitable standard for a platform at the EU-level was also proposed. Further information on the project, including project publications, can be found on the project website: www.dirizon-cedr.com/

General

ROD-IS is continuing to collaborate with Transport Infrastructure Ireland [TII], in developing a risk-based approach to improving roads afety. A model in development seeks to detect locations of high collision risk by considering the relative influence of key parameters such as operating speed, vehicle stability, stopping sight distance, alignment curvature, driver workload and pavement skid resistance. Through the implementation of this model, it is expected that TII can define the main causes of risk on its network; rank the most critical sections on the network based on risk and consistency, and use the ranking outputs to assess potential realignment projects and roadworks to develop optimal lifecycle maintenance management strategies.

ROD-IS staff members continued to disseminate our projects both at home and abroad. The Civil Engineering Research in Ireland 2020 (CERI2020) conference in Cork took place virtually in August, with the following projects presented by ROD-IS staff members;

• Developing a practical roadmap for the step by step transition towards Digitilisation and Cooperative



Automated Driving on the European Road Networks (CEDR Funded DIRIZON project, presented by Emmanouil Kakouris);

- Long-Run Traffic Simulations for Multi-Lane Road Bridges (H2020 Funded SAFE-10-T project presented by Roisin Donnelly);
- Probabilistic System Analysis Practical Examples for Railway Bridges (H2020 Funded SAFE-10-T project presented by Lorcan Connolly);

As a result of our participation in the Shift2Rail funded GoSAFE RAIL project, ROD-IS was invited to attend a Shift2Rail virtual information day in October. The event was attended by representatives from the European Commission and rail industry management. Lorcan Connolly presented some of the ROD-IS outputs at the event, including the case study application of the GoSAFE Rail Global Safety Framework. The case study illustrated the data and analysis required to perform quantitative lifecycle maintenance optimization, considering both failure probabilities and failure consequences of railway infrastructure.



New Recruits | Winter 2020

Clive Bhebhe: Clive joined ROD as a design engineer in August. He is working with our transportation team in Otley. Clive's experience extends across a broad range of schemes from drainage design for local authorities through to smart motorways, and across the full project life-cycle from concept through detailed design and site supervision. Clive enjoys football, playing music and spending time with his family.



Ioannis Tsioutsios: Ioannis joined ROD as a graduate civil engineer in August. He works with our bridges team in Otley. Joannis holds a BSc and an MSc in Civil and Structural Engineering from Democritus University of Thrace and an MSc in Structural and Construction Engineering from Universitat Politecnica de Catalunya. His career as a bridge engineer began with a bridge assessment and FEM analysis internship at Politecnico di Milano. In his spare time, Ioannis enjoys all outdoor activities, skiing and hiking in particular.



Rebekkah Kaligorsky: Rebekkah began a student placement at ROD last July. Her placement forms part of an MSc in Engineering with Business she is currently undertaking at University College Dublin (UCD). She previously completed a BSc in Structural Engineering with Architecture at UCD, graduating in 2019. In her spare time, Rebekkah enjoys painting, reading and walking her dog.



Rachel Richardson: Rachel joined ROD as a project administrator last September. She is currently working with our transportation team on the enhancing Motorway Operation Services (eMOS) project. Rachel studied event management at Technological University Dublin (TUD) and worked in conference management before joining ROD. Her interests and hobbies include horse riding, scuba diving, travelling and watching movies.



Joshua Ruston: Joshua joined ROD's student placement programme last September and is currently working with our highways team in Otley. Having completed the second year of his civil engineering degree at Leeds Beckett University, Joshua is hoping to use his 12-month placement to develop his knowledge of engineering and to learn new skills from his colleagues. In his spare time, he enjoys being in the great outdoors, discovering all of the outstanding walkways the



John Daly: John joined ROD's graduate programme last September and is currently working with our buildings team. John is a graduate of UCD, where

Yorkshire countryside has to offer.

he earned an MSc in Structural Engineering with Architecture. His interest in joining ROD was inspired by our work on the award-winning Mary McAleese Boyne Valley and Samuel Beckett bridges. At the weekend, he enjoys rock climbing, hitting a round of golf or riding his motorbike across Wicklow.

Moreno Stellini: Moreno joined ROD as a graduate engineer last September. He is currently working with our bridges team on the design of Whitegates Bridge in Athlone. Moreno earned an MSc in Structural Engineering from Politecnico di Torino in 2019, writing his thesis on the construction stage analysis of prestressed concrete bridges. In his spare time, Moreno likes to swim and play waterpolo.

Gavin Rundle: Gavin joined ROD's graduate development programme last September. He gained an MSc in Civil, Structural and Environmental Engineering from UCD this year, winning the ROD-sponsored prize for best dissertation across all Masters' programmes in civil, structural and environmental engineering and structural engineering with architecture. Gavin's hobbies include playing rugby for his local club, travelling and spending time with friends.

Peter Campbell: Peter joined ROD as a senior structural engineer last August. He is working with our bridges team in Otley. A Chartered Engineer, Peter began his career as a junior technician in 2006, working in a variety of sectors, including further education, healthcare, student accommodation, industrial, drainage and rail. Peter enjoys the outdoors and particularly loves being in the mountains. He is also a keen cyclist and fell runner.

Michael Gillman: Michael joined ROD as a trainee technician last September. He is in the first year of a part-time civil engineering degree programme at Technological University Dublin (TUD) and hopes to specialise in structural engineering. His interests including travelling and football

Keith Hughes: Keith joined ROD as a senior Intelligent Transport Systems [ITS] engineer last August. He is working with our transportation team on the Network Intelligence Management System project. Keith has worked in the ITS industry in Ireland for the past thirteen years, managing TII maintenance contracts and the installation of a Weigh in Motion systems. In his spare time, Keith enjoys running, cycling and travelling.

5 minutes with.. ..Rebekkah Kaligorsky

Describe yourself in three words Honest. Driven. Easy-going.

Where do you study?

I am a student at University College Dublin where I completed a BSc in Structural Engineering with Architecture in 2019 and am now undertaking an MSc in Engineering with Business. My placement at ROD is part of the final year of my Master's degree.

Where are you from?

I'm not sure of the rules for this question, but I'll chance my arm and go with some historical figure: With my art and design interests, I couldn't resist inviting Leonardo Da Vinci and Technically, I'm Greek (I have a Greek passport), but I arew up Michelangelo, although I know they probably wouldn't get in Ukraine. When I was fourteen, I moved to Dublin to attend along! Given where I spent my younger years, I have always had an interest in Catherine the Great. I would love to know boarding school. I've lived here ever since. what she was really like, so I'd invite her too.

When did you start in ROD?

I started my placement last July. Many of my friends had their placements cancelled, so everyone was surprised that I got to start at ROD, including me! I feel very fortunate.

What is your role in the company?

Officially, I'm in the bridges team, but I like to offer my assistance wherever I can, so I've been given the opportunity to work on some very diverse projects, including assisting with inspections on large multi-span bridges and assisting with a new signage strateav for Dublin Port's road network.

What attracted you to ROD?

As a student, I've always been familiar with the company one of my professors at UCD used to work here, and people from ROD have acted as guest judges for some of our student projects. When I was applying, I read about the graduate programme and some of the personal stories on the ROD website. The diversity of the staff here really appealed to me.

If you would like to work in any country, where would you settle?

I love Dublin, but I would also love to live in Austria or Germany for a while and use some of my dormant German. Ultimately, I









see myself returning to Ireland and settling here.

What do you do to unwind? Do you have a hobby?

I like painting and reading in my free time, but I need to give myself more time to do these things. If I need to clear my head, I take my dog for long walks.

Which three people would you most like to invite to dinner?

What type of work environment do you prefer?

I actually enjoy a quiet working environment. While I can still focus when things are busy, I am discovering the benefits of having a lot of time to think while the ROD Sandyford office is operating with a much reduced on-site staff presence. Then again, I am really looking forward to working here when it becomes a busy office again, whenever that may be.

If you were to switch careers tomorrow, what would you do?

I have always been interested in languages, so if I had to leave engineering, I would probably go into languages with business, perhaps using my Russian or German.

What has it been like to start work here during the pandemic?

I suppose this is new to all of us, so it's hard to make comparisons. The bottom line is that this experience has definitely exceeded my expectations, and the working environment, despite the circumstances, has been excellent. Everyone I have met here has gone out of their way to make me feel welcome and offer their assistance, answering any questions that I have. It's difficult to meet new people at the moment, so I'm very happy to have met many new friends and colleagues at ROD, albeit many of them online.



Roughan & O'Donovan House, Arena Road, Sandyford, D18 V8P6 el: +353 1 2940800 Fax: +353 1 2940820 Email: info@rod.ie www.rod.ie