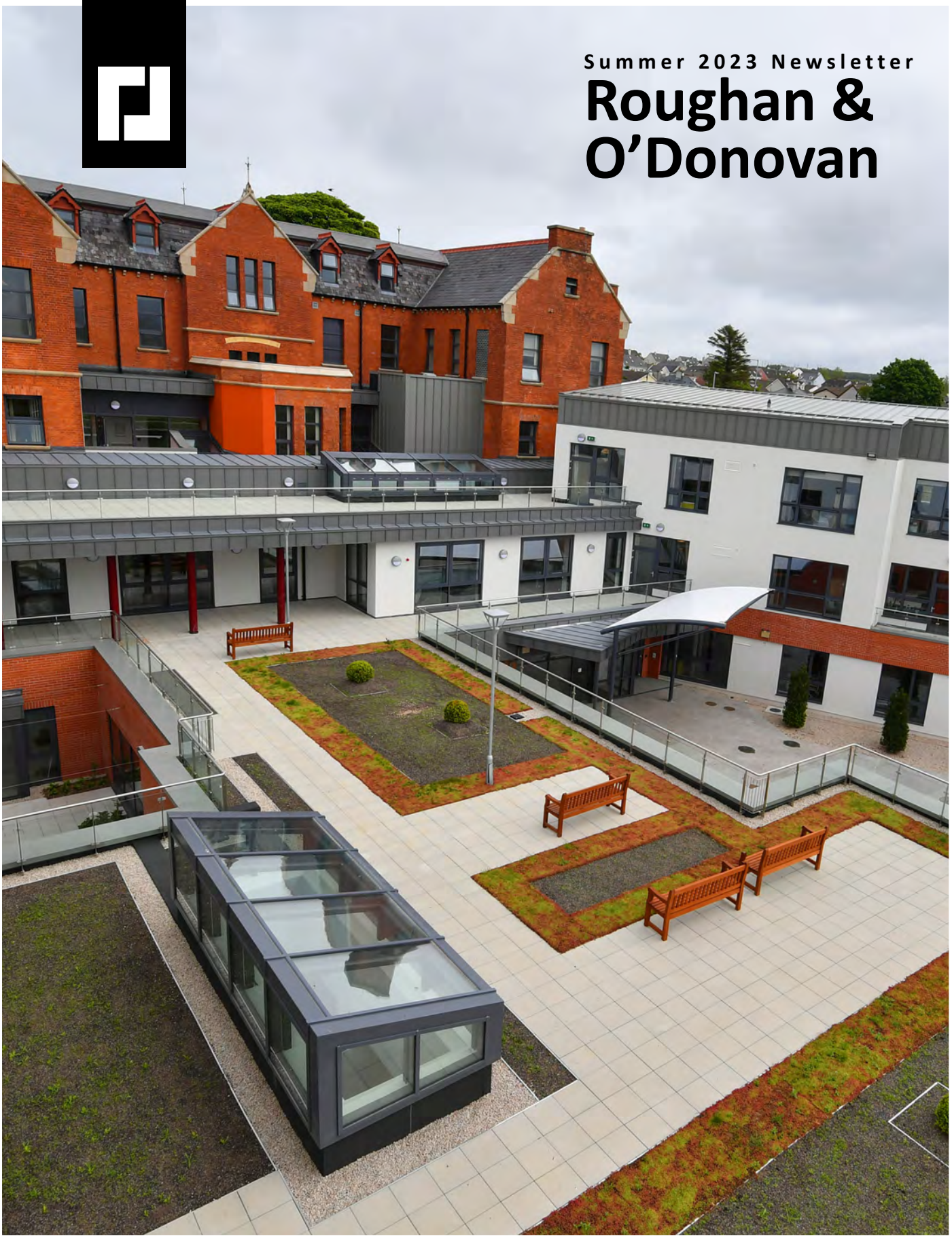
Summer 2023 Newsletter

Roughan & O'Donovan



Foreword

By Jim Thorpe

Welcome to our Summer 2023 Newsletter. When looking through this edition, what stands out to me, starting with the front cover, is the many ways in which ROD is helping to make community. South Donegal Community Nursing Unit (CNU) on the front cover says it in its title, creating the facilities for those in need of nursing support to stay in and connected to their local communities by drawing on the multidisciplinary community of skilled individuals within ROD and our various project partners. This is repeated for the seven CNUs being delivered in partnership with the PPP company EquiSisk, where I am pleased to see provision for visiting families as well as those giving and in need of nursing care.

While the CNUs primarily serve the older members of our communities, the new Child and Adolescent Mental Health Services centres in Limerick and Portlaoise provide much needed community support to young people. Similarly, the completion of Cornamona Court and the various projects where we are supporting Co-op Housing Ireland are making a very real impact on their local communities, with a range of solutions that enable people to rent or take part ownership in affordable housing.

Our environment team has contributed to the development of the National Roads 2040 Strategy which sets out a path to provide enhanced regional and rural connectivity and mobility of people and goods in urban areas, while taking actions to decarbonise road transport and protect and renew our existing road network in ways that protect and enhance the surrounding environment. The objective of balanced regional development is core to Project Ireland 2040 - to enable all of our communities to thrive. This relies on upgrading the missing links in our road networks. To that end, it gives me great pleasure to see our 20+ year engagement with the community in Mayo lead to the opening of the N5 Westport to Turlough road scheme. Much was said at the opening event about the vital contribution these new links make to regional accessibility and road safety, together with the community benefits in Westport and Castlebar, for whom the scheme brings relief from congestion and the associated environmental impacts. Particular recognition was rightly given to the 250 affected landowners, each of whom became known individually to the ROD team over the years, as we sought to deliver the maximum benefit for the wider community while understanding and minimising the impacts on individuals. Similarly, the opening of the A6 Dungiven to Drumahoe scheme addresses historic connectivity and road safety issues between Derry and Belfast, and brings congestion relief to the community in Dungiven. Similarly, the N73 Clogher Cross to Waterdyke scheme addresses the road safety concerns of the local community by providing proper visibility to the high volumes of heavy good vehicles and segregated facilities for local vulnerable users along the national secondary route between Mallow and Mitchelstown in County Cork. All three of these schemes involved working closely with the surrounding agricultural communities to understand the effects of the proposals on their operations and make suitable access provisions, including numerous agricultural underpasses.

The completion of the Baldoyle Cycle network is giving new life to its surrounding community, providing safe access to undertake local journeys through active travel, encouraging people out of the isolation of their cars and into the health and sustainability benefits of local activity, with a particular target of providing safe active access to schools in order to imbue life-long sustainable transport habits. Similarly planning approval for the Breaffy Active Travel and Safety Measures responds to the safety concerns of the local community and seeks to encourage active travel to the school, GAA club and other local community facilities. The Kinvara Active Travel Scheme is a great example of ROD's work with a local community group to promote a facility that we are now supporting Galway County Council to deliver.

Our involvement in BusConnects Cork is all about working with the community to provide better public and active travel access into and around the city, while understanding and addressing the individual and community concerns that inevitably arise from the proposed changes. Similar community engagement is ongoing for the West Clare Railway Greenway, which aims to create a world class amenity for locals and tourists, thereby bringing sustainable economic stimulus to rural communities, but can only do so with local landowner and community understanding and support.

The specialist traffic data analytics and INFRALINC research that we are undertaking might seem less community focussed. However, by using data and technology we are providing individual drivers with the information and understanding to encourage a communal response to congestion and weather events ahead to improve flows for everyone. INFRALINC is about understanding the interdependencies of different elements of our infrastructure and how climate change risks could lead to cascading hazards. In other words, it will enable all of the different agencies involved to work together as one community serving the wider community. Similarly, the heavy engineering at Great Yarmouth Third River Crossing is technically complex, but is being delivered to provide access to allow expansion of the port facilities to meet offshore wind demands; to open up active travel opportunities for the local community; and to address congestion associated with leisure access to the beach and seaside facilities - three different but equally important communities.

The last few pages of this edition highlight the many ways in which individual members of the ROD team support and interact with different communities. Our activity in the wider engineering community is highlighted through our involvement at events like Bridges 2023, the ITS Europe Congress, Daire Ó Riagáin's and Mark Kilcullen's involvement with Engineers Ireland and Ines Domingues' presentation to the Institution of Civil Engineers. Tim Sullivan and Joe Kelly are shown feeding back into higher level education, while John Daly and team are doing the same at primary level. Frances O'Kelly is spearheading delivery of our Sustainability Plan throughout the ROD community, while Nataliia Shcherbyna reminds us that we are all part of a global community that needs to look out for each other. And of course, community is about having fun together, as highlighted by the hillwalking, running, cycling and skiing activities that different members of staff have engaged in together recently.

Wishing you all a pleasant summer.

Contents

ROD Summer 2023

Buildings

Transportation

Research

Energy and Environmental

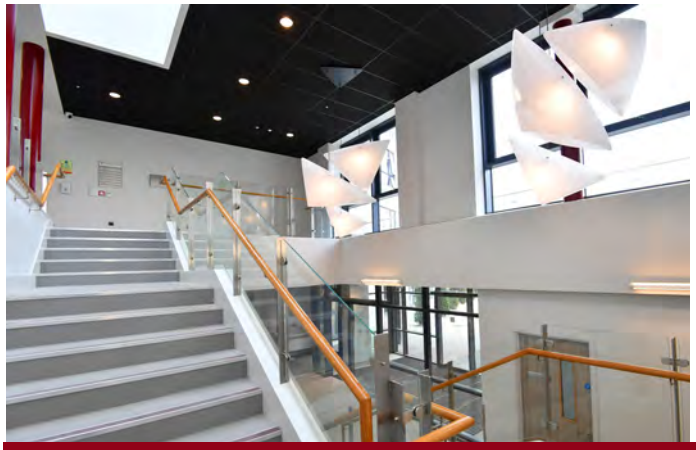
News

Bridges

Editor: Eoin Ó Catháin Design: Claire Lambert, Conor Reilly Cover Photo: South Donegal Community Nursing Unit

80-bed CNU in South Donegal reaches Substantial Completion

By Andrew Thomson



The new extension to the Sheil Hospital in Ballyshannon, Co. Donegal, has been designed to minimise impact on the existing protected building.

A state-of-the-art, 80-bed Community Nursing Unit (CNU) has recently been completed on the site of the Sheil hospital in Ballyshannon, Co. Donegal. The €28.5m project comprises 66 single bedrooms and seven twin bedrooms in a combination of long-stay, short-stay and specialist dementia wards.

Significant upgrades to the existing hospital building were also undertaken to facilitate day hospital and other ancillary services. Works included car parking and site services imrpovements, the construction of a dual carriageway southern link road to provide a new entrance to the hospital and ease local traffic congestion, and SuDS measures, including surface water attenuation and a green roof construction, to improve the building's sustainability.

ROD provided civil and structural engineering services for the development, with Rhatigan Architects, Varming Consulting Engineers (M&E) and Turner & Townsend (QS) The main contractor was Letterkenny-based Boyle Construction Ltd.

Protecting and retaining the character of the existing hospital, a three-storey listed building dating from the 19th century, while complementing it with a new modern facility compliant with national standards for health services posed a key challenge for the project team. The steeply sloping site and the requirement for drainage consents to the River Erne added further complexity. To meet these challenges, we drew heavily upon the wider ROD team's traffic, water, environmental and geotechnical expertise, making this a truly multidisciplinary project.

The HSE will complete the HIQA processes in the coming months, paving the way for residents to move into the new facility.

HSE to develop two new CAMHS facilities in Limerick and Portlaoise

By Sean Kennedy

Artist's impression of the new CAMHS facility in Limerick. Image courtesy of Coady Architects.

The Health Service Executive (HSE) has engaged ROD to provide civil and structural engineering services for two new Child and Adolescent Mental Health Services (CAMHS) facilities in Ireland; one in Limerick and the other in Portlaoise.

The new facility on the grounds of St Fintan's Hospital in Portlaoise will provide additional consultation rooms, office space and ancillary support services for the existing CAMHS teams serving Laois and Offaly. The proposed development involves the refurbishment of several existing buildings and the reconfiguration and upgrade of unoccupied space within the hospital. Building alterations include widening of existing doorways, widening and relocation of windows and reconfiguration of existing internal walls.

The facility in Limerick is designed to accommodate CAMHS teams based in the West and to cater for the expanding needs of the medical, nursing and professional staff based in the city. The purpose-built, two-storey building will feature a north-facing central atrium connecting two linked blocks either side of a central courtyard space to the south. Its orientation will enable therapy rooms to be positioned away from the public-facing side of the building.

The associated civils works will include sustainable urban drainage systems (SuDS) measures, such as bio-retention areas and soft landscaping features to slow the flow of surface water from footway and parking areas and provide an attractive external environment for residents and visitors alike.

ROD is currently providing structural design and supervision services for the works being undertaken at St. Fintan's Hospital, and we are looking forward to submitting the planning package for CAMHS Limerick in Q3 2023.

EquiSisk appointed PPP Company for HSE CNU scheme

By Andrew Thomson

Ardee CNU under Construction.

EquiSisk Community Care Partnership Ltd. has been appointed Public Private Partnership (PPP) company for the Health Service Executive's (HSE) Community Nursing Unit (CNU) scheme. The project provides for the design and construction of 530 nursing beds, on seven sites, in communities across Ireland. The sites are located in counties Cork (2), Kerry, Tipperary, Kilkenny, Westmeath and Louth. All seven CNUs have commenced on site and are due to be completed in mid to late 2024.

ROD was engaged by the HSE as civil and structural technical advisor on the scheme in July 2019. Our design partners are MCA Architects; Semple McKillop (M&E); Aecom (Cost Consultants); FCC Fire Cert Ltd. and ORS (Health and Safety). Our buildings team worked closely with the HSE and our design partners throughout the initial design, tender and review periods to address the challenges presented by the COVID-19 pandemic and fluctuating construction costs. With the CNUs now at the implementation and construction stages, ROD's focus has shifted to delivering the schemes for the HSE in accordance with the standards and schedules.

Each CNU is made up of several 25-bed households, including single and twin bedrooms en-suite. Each household includes a dayroom and sunroom, dining area, break out spaces, activity spaces, quiet rooms, external spaces and staff and nursing areas. Shared areas and therapy spaces are also included, with facilities consisting of a family overnight stay room, clinical treatment rooms, physiotherapy and occupational therapy rooms and hairdressers' rooms. Dementia specific beds are provided in Kerry (three ten-bed households in Killarney); Cork (three ten-bed households in St. Finbarr's); and Kilkenny (two ten-bed households in Thomastown); as well as a day centre in Athlone.

€21 million Dublin Housing Project reaches Substantial Completion

By Andrew Thomson

Cornamona Court is part of Dublin City Council's delivery of new housing under the Housing Strategy 2020.

Cornamona Court, an estate of 61 social houses and apartments in Ballyfermot, Dublin 10, reached substantial completion in April 2023. The €21 million development was constructed by Dublin City Council as part of its Housing Strategy 2020, which aims to deliver new social housing for both general needs and senior citizen homes. ROD provided civil and structural engineering services for the development, with Paul Keogh Architects, Austin Reddy & Company (QS), Varming Consulting Engineers (M&E) and CSR (Landscape Architect) making up the other members of the design team. The main contractor was Cunningham Contracts Limited (CCL).

The new estate is located on the site of an old complex of single-storey senior citizens' housing that was demolished by the Council in 2007 to make way for the new development. Situated close to Ballyfermot's busy main street, with its shops, library, sports and community buildings, it will provide residents with a vibrant community to live and work in.

The estate comprises four and five-storey over basement apartment blocks and a terrace of 16 two-storey dwellings to the west of the site. The buildings are punctuated externally by an attractive mix of brick and brick-expression facades which, together with the detailing of the private balconies, enhance the overall attractiveness of the development.

Designed to achieve an 'A' rated Building Energy Rating, as well as full Near Zero-Energy Building (NZEB) compliance, the development features solar panels, heat recovery systems, and uses its thermal mass and a highly insulated building fabric. ROD worked closely with the main contractor during the construction stage to ensure the buildings, which were modelled in 3D using REVIT, were delivered to the highest standard.

ROD supports Co-op Housing Ireland's social homes delivery

By Kieran O'Riordan

ROD is providing surveying and inspection services to Co-operative Housing Ireland (CHI), an approved housing body that works closely with stakeholders in the housing sector, including government, local authorities, aspiring homeowners, tenants and developers, to provide high quality social-rented homes and home ownership cooperative homes across the country.

CHI has engaged ROD on several sites around Ireland, including a legacy, seven-house development at Vicar's Choral in Tuam, Co. Galway, which was delivered in April 2023, and a mixed development at St. Germaine, Killiney, Co. Dublin, comprising 31 apartments and duplexes units, which is scheduled for handover in November 2023.

We have also been engaged on a two-phase development, comprising 38 units, at Moongate in Wexford. Phase one, consisting of 17 two-storey houses, in a mid and end terrace layout, was handed over in April 2023. Phase two, consisting of 11 two-storey houses, in a mid and end terrace layout, and 10 apartments, is due for handover in Q3 2023.

Mixed development at St. Germaine, Killiney, Co. Dublin. Image courtesy of CPD Architecture.

Completion of Baldoyle Cycle Network Improvement Project

By Giovanni Battista Ragusa

New cycle facilities on Howth Road.

Our project to improve the pedestrian and cycling network around Baldoyle and extending to Howth in Fingal, Co. Dublin, has been successfully completed. The completed works provide a safer, more accessible and more convenient cycle network for people living in the towns and villages in the area while also addressing deficiencies in the footpath networks.

ROD was engaged on a Design and Build basis by GMC Utilities Group (GMC), providing consulting engineering services through the design and construction phases of the project and working collaboratively with Fingal County Council throughout. The project focused on four routes: Grange Road, Warrenhouse Road, Howth Road, and Dublin Road.

ROD's design provides a dedicated and safe space for cyclists, separate from vehicular traffic, while minimising hazards to other road users and impacts on road drainage. Physical separators, including bollards and clear road markings were used to create a clear distinction between the cycle path and the roadway. Gullies along the routes were also converted into cyclist-friendly gullies. The segregation design took the safety of all road users, including pedestrians and drivers, into consideration, with the physical separators strategically placed to minimize hazards and conflicts. We had a particular focus on ensuring that the new cycling facilities and enhanced pedestrian facilities were clearly legible and safe for children and the elderly.

By encouraging more people to choose cycling as an alternative to private car use, the upgraded cycling infrastructure aims to promote a healthier and more sustainable way of commuting, reduce traffic congestion and air pollution and improve the quality of life of residents. In creating a network that is safe for children to use, we hope to imbue lifelong sustainable transport habits that will help in creating a wider cultural change.


A6 Dungiven to Drumahoe scheme in Northern Ireland opens to traffic

By Roberta Keaney & Martin Brown

Image courtesy of Sacyr - Wills - Somague JV.

After 5 years, and through a difficult period of Covid measures, the £220 million upgrade of the A6 Dungiven to Drumahoe Dualling was officially opened to traffic on Friday 7th April with cars, lorries and buses taking to the new trunk road shortly after 9:00am local time. This marks yet another successful milestone in the history of ROD, who has now delivered its third major infrastructure project in Northern Ireland, following the opening of the A2 Shore Road in 2015 and the A6 Castledawson to Randalstown Scheme in 2021.

The scheme will improve the strategic road network in the north-west of the province, reducing journey times and improving reliability, road safety and the environment for local communities such as Dungiven, by the design and construction of a bypass. Locally the scheme has been welcomed by all, with up to 60% reduction in traffic through Dungiven.

The A6 Dungiven to Drumahoe Dualling scheme is one of our more significant projects comprising 25.5km of high standard dual carriageway between Drumahoe on the outskirts of Derry and Dungiven. The design includes:

- 25.5km dual carriageway trunk road
- 2 park and rides sites with a total of 341 car spaces, cycle parking, pedestrian facilities, ticketing facilities and security measures
- a bypass of Dungiven,
- four new compact grade separated junctions,
- 17km of side roads,
- 20km of access tracks,
- 87km of drainage,
- 30 SuDs pond
- 123km of fencing,
- 22 Structures,
- 79 culverts,
- 21 permanent watermain diversions and numerous temporary diversions,
- Countless utility diversions,
- active travel routes,
- landscaping with approximately 500,000 plants, 900,000m^2 of grass and 200,000m^2 of wildflower
- ecological enhancement works including 18 mammal underpasses, 26km of badger fencing and 11km of otter fencing
- ITS and lighting
- Low noise Pavement, and
- Accommodation works for over 200 landowners

The opening of the scheme is a significant achievement for ROD as it is the longest road project which we have designed without a JV partner. In total 116 ROD staff worked on the scheme at various stages, with resources ramped up to meet programme milestones, and to ensure the appropriate levels of checks were carried out.

ROD acted as designer for Sacyr, Wills Brothers and Somague, who worked together in a joint venture (SWS JV) to deliver this strategically important scheme for the Department for Infrastructure. Our dedicated design and supervision teams deserve special mention for their hard work over the last few years. Many thanks also to our principal sub-consultant Prointec for their dedication and hard work, to Buro-

Burntollet River Crossing and Ardmore Road

Feeny Junction

Drumahoe P+R

S13 Munreery Road Overbridge

Happold, who completed Cat 3 checking on several structures, and our other supply chain partners.

With climate resilience being to the fore in all our design work, we have endeavoured to ensure mitigation of environmental impact and delivery of sustainable infrastructure were core A6 project values. The design maximised the sustainable reuse of locally won materials and included provision of fish passable culverts and river enhancement works. For instance, the existing culvert at Muldonagh was a prime location for river enhancement works opening the catchment to suitable habitat upstream. The existing culvert was a barrier to upstream migrating salmon and sea trout, and in-stream movements of brown trout. Works to provide baffles in the existing culvert, which was constructed in the 1960s, provided a low flow channel within the existing culvert contributing to a significant potential increase in recruitment of salmon and trout to the River Faughan. In addition, our design included ecological SuDs ponds, a landscape design to cater for bats (including reportedly the largest bat roost in Northern Ireland with over 1000 bats, including Soprano Pipistrelle (Pipistrellus pygmaeus) and Common Pipistrelle (Pipistrellus pipistrellus) and to provide screening for local communities, mammal underpasses, provision of over half a million wildflowers, trees and shrubs through a landscape design which seeks to enhance the local ecology for the future with provision of bird and bat boxes at key locations along the route.

At the commencement of the scheme, ROD assisted in the development of the Construction Environment Management Plan (CEMP), aiming to minimise the impact on SACs, and the environment. ROD authored various elements such as how to manage invasive species (in accordance with the Wildlife (Northern Ireland) Order 1985 (as amended). As part of this process ROD gave tool-box talks to the Contractor's staff providing professional advice on workzones, fencing, decontamination and cleaning.

For the pavement design, a low noise surfacing was designed, utilising a performance foundation maximising the use of locally won material providing significant carbon saving by reducing haulage trips, thus minimising the impact on local communities and the environment.

The A6 site signed up to the "Considerate Constructors Scheme", with both ROD site staff and office staff contributing to assist the Contractor. By signing up to the CCS, the scheme aims to abide by the Code of Considerate Practice, designed to encourage best practice beyond statutory requirements with a focus on respect for the community, care for the environment and value for the workforce. By developing a considerate design which minimises the impact on the community and the environment, ROD proactively contributed to this collaborative exercise to maximise its success.

This scheme along with the Randalstown to Castledawson scheme completed in 2021 represents an investment of around £440 million by the Department for Infrastructure to upgrade the roads infrastructure between Derry and Belfast with significant lengths of the route now dual. Our design and supervision teams are proud to have contributed to the delivery of these transformational infrastructure projects.

N5 Westport to Turlough Road opens to traffic

By Edward Warren

An aerial view of the N5 Westport to Turlough Road Scheme, County Mayo.

ROD was delighted to welcome the completion of the N5 Westport to Turlough Road Scheme, which was officially opened by An Taoiseach Leo Varadkar on 15th June, 2023. ROD has been supporting Mayo County Council and Mayo National Roads Office in the delivery of the scheme for more than 20 years. During that time, the progression and completion of the scheme has been impacted by the vagaries of Celtic tigers, foot and mouth restrictions, financial recession, changes in government (and priorities), pandemic, war and invasion.

Following an initial engagement in 2000 for bridge feasibility and environmental impact advice on the section between Westport and Castlebar, ROD in consortium with AECOM was appointed in 2007 as consulting engineers to MCC, working closely with the MNRO, to develop an extended scheme from north of Westport to east of Castlebar. This was progressed through Transport Infrastructure Ireland's phases 1-4 planning and design stages, culminating in the granting of statutory approval by An Bord Pleanála in July 2014. Thereafter, in 2017, ROD was appointed by MCC to undertake phases 5-7 of the project, including an adjoining section of the N59 through development of detailed works requirements, procurement, contract administration and construction supervision.

The construction contract was procured by novel means as a TII 'pilot' under a design-build form using technical merit and price as the award criteria. The price criterion was based on three elements including median price (delivery risk), rather than lowest price only. The technical merit section required tenderers to demonstrate their understanding and approach to the particular geotechnical challenges among other things. Four contractors (all consortiums of 2 or more contracting companies) tendered for the construction contract. The works contract was subsequently awarded to the Wills-BAM JV, and construction on site commenced in January 2020.

The works now completed include: -

- 20km of Type 2 dual carriageway and approximately 7.5km of single carriageway (Type 1, 2 and 3 national Roads), including the upgrade of a 2.5km section of the N59 Westport to Mulranny national secondary road at Barleyhill
- 20km of Local and other roads
- 7km of Active Travel provision including 3 Active Travel underpasses
- 2 compact grade separated junctions and 6 at-grade roundabouts
- 2 rail bridges over the Dublin to Westport rail line
- 24 other bridge structures
- 49km of hedging and 95,000 trees planted.

A first section of the road comprising 10km of dual carriageway from the N5 roundabout at Turlough to the N5 roundabout at Pheasanthill on the Westport Road was opened to traffic on 26th April 2023. The left in/left out interchanges at the N60 Breaffy Road and N84 Ballinrobe Road were also opened at that time.

We congratulate Will-BAM JV and their design consultants RPS on

Sitting L-R: Peter Walsh Chief Executive TII, Kevin Kelly Chief Executive Mayo CC, Cllr Séamus Weir, Cathaoirleach Mayo CC, Leo Varadkar TD An Taoiseach
Standing L-R: Michael Naughton SRE ROD, Christina Ward Site Admin ROD, John Duggan SRE ROD, Jim Thorpe MD ROD, Luke Duffy PRE ROD, John Murray COW ROD, Alejandra Pena RE ROD, Michael McDonnell RE ROD, Brian Madden COW ROD.

their completion of the works, which involved many challenges including site closures due to the Covid-19 pandemic and thank them for their positive engagement with the Office of Government Procurement's Covid Co-operation Framework and the Inflation / Supply Chain Delay framework.

During the construction stage Patrick Grennan (Technical Director) undertook the role of Employer's Representative for ROD under the PW-CF4 public works contract conditions and we also provided a full-time resident engineering team working on site to monitor the works and to liaise with both our technical team led by Ed Warren (Technical Director) and council representatives. Our site team was led by Luke Duffy (Project Resident Engineer).

The N5 scheme is part of the Government's Project Ireland 2040 |National Development Plan 2021-2030 and meets many of the National Strategic Objectives including Enhanced Regional Accessibility, Strengthened Rural Economies and Communities, and Sustainable Mobility. The N5 scheme is the largest infrastructure project ever completed in county Mayo.

At the project opening, Mr Varadkar remarked that the N5 Westport to Turlough Road Project will,

> "improve road safety and enhance the quality of life in the area, by improving accessibility and journey times for people commuting to work and other activities. It will enhance economic development through efficient transport of goods and services. It will also open new possibilities for people to visit this wonderful county and see new views of the lakes and mountains that make Mayo so special".

Chief Executive of Mayo County Council, Kevin Kelly, echoed these sentiments, describing the completion of the project as

> "a momentous occasion for the county and the culmination of years of dedicated effort" and noted that "the benefits of this project will be extensive and will have a profound and positive impact on both local communities and the economy".

ROD Managing Director, Jim Thorpe, who was the ROD-AECOM Project Director for the scheme during Phases 1-4 expressed his thanks to all in ROD and AECOM who had worked on the project since 2000 to see it realised from conception through to final delivery. He also thanked the project team in Mayo County Council's National Roads Office (NRO) for their professionalism and 'One-Team' approach, saying:

> "The commitment and collaborative approach demonstrated by Senior Engineer, Paul Hyland, Senior Executive Engineer, Marian McHugh, and their colleagues in the NRO was crucial to the project's successful delivery."

Jim also paid testament to the support and guidance provided by TII personnel, notably Peter Walsh and Tom Carr during the initial stages, and Kieran Kelly and Virginia Kangley since then.

BusConnects Cork

By Eoin O'Catháin

Western Road, Cork - part of Strategic Transport Corridor F from Bishopstown to the City Centre.

ROD, in joint venture with TYPSA, has recently been awarded Contract B for BusConnects Cork. Contract B comprises the following routes: Ballincollig to City Centre, Bishopstown to City Centre, and Togher to City Centre. Taken together, these routes form a key sustainable and active travel mode network for the southwest of the city. The routes will link numerous large employment and educational facilities with the city centre and the wider suburbs while serving key destinations, including the city centre; University College Cork (UCC); Munster Technological University (MTU); Cork University Hospital (CUH); Wilton Shopping Centre; and Ballincollig Town Centre. Several key arteries will be reconfigured on the east side of the city centre to improve bus, cycle and pedestrian facilities.

ROD hit the ground running on the project, holding public consultations in UCC and Nemo Rangers GAA Club within weeks of our appointment. This gave us an early understanding of the public's primary concerns. The National Transport Authority (NTA), Cork City Council, and the consultants who worked on the earlier stages of the project deserve significant credit for addressing many of the issues raised by the public during previous consultations on the three routes.

Following this most recent round of public consultations, our project team held several community forum meetings, and online consultations were arranged with landowners potentially affected by the schemes. Traffic survey data for the city has already been collated, and topographical survey data for all three routes is expected in late summer. This will allow us to delve deeper into the design process and allay, where possible, any of the public's remaining concerns with the scheme designs.

We look forward to working with the NTA, Cork City Council and other key stakeholders in finalising the preferred option and progressing the design and assessment phases. Our target for completing and submitting planning applications for the three routes is late 2024.

Green light for N60 Breaffy Active Travel and Safety Measures Scheme

By Mădălin Bundă

Image of Breaffy village, Castlebar, Co. Mayo.

In January 2023, the Part 8 planning application for the N60 Breaffy Active Travel and Safety Measures Scheme was approved by Castlebar Municipal District Council. The decision brings the Council a step closer to achieving its objective of promoting healthier, more sustainable ways of travel through the provision of safe, well designed, and well-connected pedestrian/cycle networks.

The news was warmly welcomed by our project team, who have been involved in the project since 2012, when we were engaged by Mayo County Council to undertake a safety assessment on the bypass section of the N60 beside Breaffy Village. The detailed design and Compulsory Purchase Order (CPO) phases are currently being progressed, and a target of late 2023 has been set for construction tender invitation.

Active travel

The scheme is one of six sections of a 24km long, linear cycleway/walkway route from Castlebar to Claremorris. ROD's scheme commences at the IDA roundabout in Castlebar, from which it will pass through Kilkenny Cross roundabout and along the N60, through Breaffy Village, before terminating just beyond Breaffy Post Office at the junction with the L5760.

A single file plus overtaking cycle facility, with footpaths on either side of the N60, will be provided for approximately 1.5km from the IDA roundabout up to the new compact grade-separated junction between the N60 and the new N5 Westport to Turlough Road. This section of the existing N60 will be reclassified as R308, with a proposed reduced speed limit of 60km/h.

A shared-use facility for two-way cycling and pedestrians will continue for approximately 2.8km along the N60, where the speed limit will increase from 60km/h to 80km/h up to east of Breaffy village. There it will change again to 100km/h in accordance with the National Speed Limit Review.

Safety measures

One of the issues identified in the 2012 safety assessment was hard shoulder parking at Breaffy National School at drop-off and pick-up times. To mitigate this issue, the design provides for the elimination of hard shoulder parking at Breaffy village and a periodic 60km/h zone at school drop-off and pick-up times. Three new uncontrolled pedestrian crossings, two new bus bays in the village, an update of Kilkenny Cross roundabout, and a new jug handle crossing form part of the proposed design.

When complete, it is hoped that the scheme will serve as a template for other rural councils seeking to promote and facilitate cycling and walking as more sustainable travel modes than private car use, while offering similar attractiveness and safety to the car.

Render of a single file plus overtaking cycle facility with footpaths on either side of the N60.

Render of a shared-use two-way cycle facility with pedestrians.

Realignment of the N73 between Clogher Cross and Waterdyke complete

By Conor Lehane

The N73 Clogher to Waterdyke scheme. The cross section is a type 2 single carriageway.

The N73 road realignment between Clogher Cross and Waterdyke in Co. Cork opened to the public on 15th March 2023, four months ahead of schedule. The €12m infrastructure project will provide significant long-term safety benefits for all road users, improve journey time reliability and enhance connectivity in the region.

ROD was engaged by Cork County Council to provide engineering consultancy services on the scheme, including undertaking the detailed design of the road realignment and active travel facilities; compiling the Compulsory Purchase Order (CPO) documentation; assisting with the main construction contract procurement; and providing design office support during construction. We also provided Project Supervisor Design Process (PSDP) services on the scheme.

This section of the N73 (which runs from the N72 east of Mallow to the M8 at Mitchelstown) carries a high volume of heavy goods vehicles (HGVs). The N73 provides a shortcut between the N72 from Killorglin to the M8 north at Mitchelstown, while the N72 continues eastward to Fermoy and onto Dungarvan. Prior to the road realignment works, it comprised a narrow carriageway, closely bounded by hedgerows, with limited or no verges. The road had sub-standard horizontal and vertical alignment and inadequate forward visibility for its 100km/h speed limit.

The road realignment included the provision of approximately 3km of Type 2 single carriageway road and a further 0.5km of local road improvements. The design provides enhanced forward visibility, horizontal and vertical alignments in accordance with TII design standards and incorporates the principles of forgiving roadsides to further improve road safety. The scheme includes a variety of sustainable drainage measures, including the adoption of grassed surface water channels along the entire length of road realignment. A farm underpass crossing has been provided beneath the realigned road, improving safety for N73 users and agricultural connectivity for landowners by reducing agricultural vehicle movements across the road. In addition, the inclusion of a new 2.5m wide shared cycle track/pedestrian footway, located adjacent to the realigned road, will provide the local community with a safe walking and cycling route.

The main construction contract was awarded to Sorensen Civil Engineering Ltd. in July 2022. While the planned construction timeline was 12 months, the road realignment was completed four months ahead of schedule.

Public consultation for West Clare Railway Greenway – Ennis to Ennistymon

By Brian Feighan

River Inagh Waterfall, Ennistymon.

The second public consultation for Section 2 of the West Clare Railway Greenway was held last February, with feasible route corridor options between Ennis and Ennistymon presented for public comment. This followed the presentation of the scheme study area at the first public consultation in October 2022. Possible route options in Ennis were also included in the display.

Drawings illustrating the route corridor options for approximately 25km of greenway were made available at Clare County Council's office in Ennis, Corofin Public Library and Ennistymon Library for the duration of the public consultation period. An information brochure, comment form and a Frequently Asked Questions (FAQ) form were also made available to the public. The council made this information, together with the constraints report, accessible on its website www.clarecoco.ie. The public was invited to make submissions in either hard or soft copy.

Four members of ROD's team attended three in-person public consultation sessions in Ennis, Corofin and Ennistymon. These sessions provided an opportunity for us to engage with local communities and landowners, provide answers to queries and record any comments or useful information shared by locals in relation to the route corridor options. The attendees were highly engaged with the project, with landowners in particular keen to discuss both the positive and negative aspects of the scheme, and our team eager to address their concerns, where possible.

The public was encouraged to make formal written submissions to the process, in addition to the engagement with our team on site at the public information sessions. The submission period has now closed and our design team is reviewing the feedback received during the consultation period. This will feed into the option selection process to determine a preferred route corridor that minimises, where possible, the impacts of the project on the surrounding environment and communities.

A third public consultation, at which the preferred route corridor will be displayed, will take place later this year. The design and environmental assessment of the preferred route will progress thereafter. It is hoped that the planning application for the scheme can be made to An Bord Pleanála in the next 12-18 months.

N56 Letterilly to Kilraine Phase 1 Opens to the Public

By Paul Kissane

Aerial photograph of N56 Letterilly to Kilraine Phase 1, soil-nailing and rock excavations were needed for steepened slopes avoiding a national monument.

We are pleased to report that the N56 Letterilly to Kilraine Phase 1 project reached substantial completion on 10th March 2023 and is fully open for use. The scheme is located just north of Glenties in county Donegal, at the north-west edge of the Blue Stack Mountains.

The project is the third such scheme on the N56 that ROD has been involved with in recent years following the earlier completions of the N56 Mountcharles to Drumbeigh in August 2019 and the N56 Drumbeigh to Inver in March 2021. The contractor for the works was Wills Bros. Ltd who was also the contractor for the two earlier schemes. The project was managed by Donegal National Roads Office and was led by Fergus Towey with Jamie Corry.

The project works required the construction of: -

- 4.1km of Type 3 single carriageway which included 2.5km of surcharged embankment
- 2.5m wide cycletrack
- 0.6km of pavement overlay
- realignment of five local side roads and direct accesses
- a new arch bridge structure
- reinforced soil wing walls
- part demolition of the Sruhangarve Bridge

ROD was appointed by DCC in August 2020 to provide contract administration and site supervision services for the construction and handover stages of the project, together with design review services particularly relating to the Earthworks surcharging design. Patrick Grennan (Technical Director) undertook the role of Employer's Representative and Gerard Ward (Senior Resident Engineer) led our site supervision team. The scheme is located within both the west of Ardara / Maas Road SAC and the Owenea Freshwater Pearl Mussel catchment, and our environmental team

The northern end of N56 Letterilly to Kilraine Phase 1 project. A separate cycle track connects to the old road, passing the attenuation pond, realigned watercourse and culvert crossings for landowners accesses.

provided specialist oversight of compliance with the specified environmental protection measures.

As reported in our Winter'22 Newsletter, several innovations were required for the multi-stage geotechnical construction solutions and has resulted in the project being shortlisted for International Project of the Year at the Ground Engineering Awards 2023. In addition, Fintan Buggy (Technical Director) who assisted Paul Kissane (Associate) on the project has been nominated for the Lifetime Achievement Award.

We congratulate our own team, all in DCC and Wills Bros Ltd on the completion of the scheme, for conducting their roles so diligently in the interests of the project and stakeholders. They achieved exceptional objectives building embankments up to 6m high on peat, maintaining critical temporary diversion routes and installing steepened slopes close to national monuments without impacts to the sensitive river catchments. The works were also undertaken during a challenging period impacted by the Covid-19 pandemic and construction inflation arising from the war in Ukraine.

ROD are now assisting University of Galway on an ICRAG Research Project titled "The effect of surcharging on secondary settlement in peat" where the surcharged embankment and monitoring instrumentation installed as part of the N56 Letterilly to Kilraine Road Scheme has provided a unique opportunity to monitor surcharge performance on a major road constructed on a surcharged peat foundation, both during construction and in the long-term.

Finally, ROD have recently carried out a due diligence review on the N56 Letterilly Kilraine Phase 2 Road Scheme tender documentation for DCC and will provide Phase 5-7 services for this project over the next 18 months.

Traffic Data Analytics Tools to Inform Operational Decision Making on the M50

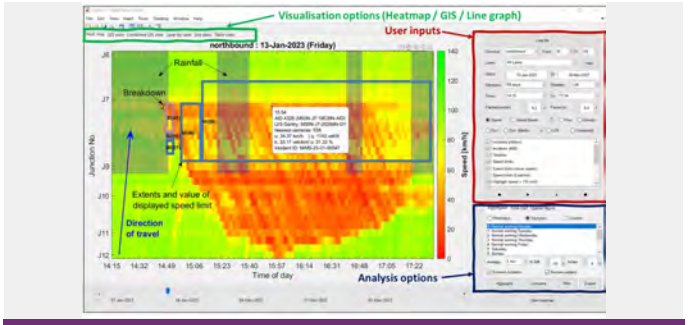
By Robert Corbally

As part of our work on Transport Infrastructure Ireland's (TII) enhancing Motorway Operation Services (eMOS) programme, ROD is providing TII with advanced data analytics services to enhance its understanding of the complexities of the motorway network and enable it to provide a more integrated road management service to road users.

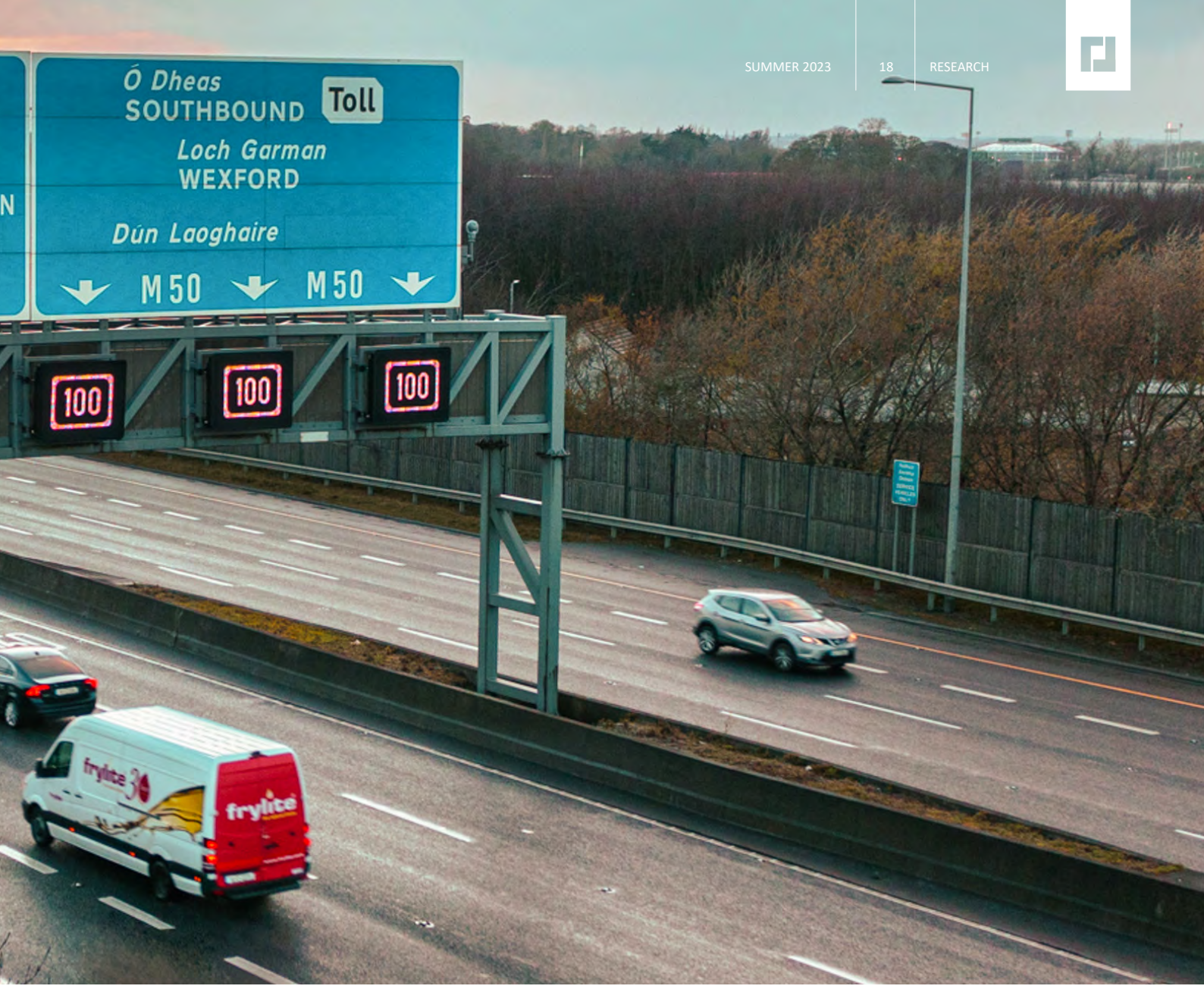
The roll out of variable speed limits (VSL) and lane control signalling (LCS) technology across the M50 is adding substantially to the traffic speed, traffic flow and journey time information being collected through intelligent transport systems (ITS) equipment already installed on the motorway. Leveraging this data is key to providing TII with a deeper understanding of daily traffic conditions on the M50 and enabling it to develop suitable operational response procedures such that speed limits and warning messages reflective of real-time conditions on the motorway can be displayed to road users, for example during periods of heavy congestion or when incidents occur on the network.

New software tool

ROD has developed a software tool, with a customised user interface, to visualise large traffic speed datasets, revealing congestion patterns and allowing post-incident reviews of delays and queue lengths to be undertaken. The image below shows the interface displaying traffic data recorded at 20s intervals every 500m along the M50. The visualisation can display in heatmap format, showing both time and location, or on a GIS map, showing the development of congestion over time.



Software interface for the visualisation and analysis of M50 traffic data.



The software allows different data sources to be amalgamated or analysed in parallel. For example, weather data from TII's weather stations can be overlaid on the traffic data to examine the influence of rainfall or other extreme weather on traffic conditions. Details of motorway incidents or the speeds displayed on the overhead digital signs can also be overlaid to allow the impact on traffic to be visualised. The software has been particularly useful in identifying the source of congestion at various locations along the motorway, examining the impact VSL is having on traffic flows and analysing the impact of different incident types on the network.

Probabilistic methods

The team has also been leveraging its expertise in probabilistic methods to examine the relationship between speed and flow at all locations on the M50. These methods can be employed to predict the onset of congestion levels that will trigger the switching on of variable speed limits. They can also assist with the calibration of the algorithms that automate the setting of speed limits and variable message signs.

Benefits

The software developed by our team uses real, measured traffic data collected from sensors in the road to calibrate the theoretical relationships governing traffic flow. This allows the team to recognise the conditions that cause traffic flow to move from a free-flowing state to a congested state and identify the appropriate point at which speeds should change in response to real-time traffic conditions on the motorway. The data will be used to examine the impact introducing VSL and LCS has on the performance of the M50. The use of VSL during periods of heavy flow is, for example, expected to limit shockwave behaviour, improving road user safety and journey time reliability. The data will allow the benefits to be measured and quantified, and if the desired level of benefit is not being delivered it will inform changes to operational response procedures.

Climate Change Risks for Critical Infrastructure

By Mark Tucker

Pictured (L-R): Members of the Research team Mark Tucker, Marko Duranovic and Ilaria Bernardini.

In March 2022, ROD began work on INFRALINC, a one-year project aimed at developing a design for a full-scale study to assess climate change risks for Critical Infrastructure (CI) in Ireland. Our consortium partners were Dublin City Council, Irish Rail and OpenEir. Funded under Ireland's Environmental Protection Agency (EPA) Research Programme 2021-2030, the primary focus of the project was risk calculation.

The project examined different types of infrastructure and their interdependencies in terms of both the likelihood and potential consequences of one infrastructure failure on another. It also considered cascading hazards wherein extreme events increase significantly over time and generate unexpected, secondary events of strong impact.

Engagement with stakeholders was identified as key to achieving the objectives of INFRALINC. A series of workshops examining 'Critical Infrastructure and Extreme Weather Events', 'Data Availability and Requirements', and 'Data: Ongoing Monitoring and Security' were attended by representatives from the transport, energy, waste, water, defence and telecommunications sectors. The workshops provided useful information on the issues facing CI owners/managers/operators as they confront the potential impacts of extreme weather events and climate change on their infrastructure.

An inventory of CI and associated climatic-related events was developed, highlighting the impacts and consequences of past events, including cascading failures, on elements of infrastructure. While predominantly focused on the Irish context, the inventory included European-wide events which, in the context of climate change - including its impacts and mitigation strategies, may be of significant relevance to Ireland. Existing and implemented frameworks were reviewed to provide context and background on the recommended framework and methodologies to be used in the Irish context. Interdependencies, cascading events, cross sectoral impacts, cumulative impacts and vulnerabilities in the current and future scenarios were examined.

Data requirements, data availability and data sharing issues are an essential component of any risk assessment methodology. The project team therefore undertook an in-depth investigation into these issues, and a monitoring regime for infrastructure was subsequently proposed to ensure that adequate and accurate data could be obtained for the recommended risk assessment methodology. Finally, general recommendations were made on the most appropriate approach for developing a design for a full-scale case study.

ROD launches Sustainability Plan

By Joe Kelly

Sustainability has always been at the heart of our work at ROD. As engineers, designers and scientists, we recognise our role in shaping society and tackling global challenges, including climate change, biodiversity, water security, population and energy security. We embrace the use of new technologies and techniques to reduce material consumption and embedded carbon, increase flexibility of use, and extend the lifespan of our solutions. We are particularly proud of our involvement in several nationally significant public transport and active travel initiatives, including Ireland's first bus lanes, cycle lanes and light rail systems; the Greater Dublin Area Cycle Network Plan; Dublin's suburban rail system; numerous greenways, and BusConnects in both Dublin and Cork. Our expanding environmental team has over the past 20 years broadened from assessment of engineering projects to lead projects in their own right, as well as providing specialist perspectives on a much wider range of environmentally and ecologically sensitive projects.

This was formalised in March, with the launch of our Sustainability Plan. The Plan sets out how it will underpin our credentials as a sustainability leader by continuing to deliver design and environmental solutions that support the transition to climate resilient, biodiversity rich and climate neutral economies. Our Plan affirms our commitment to maximising our sustainability performance and reducing our carbon emissions, not just in our own operations and supply chain, but in the way we advise and support our clients in developing solutions that are environmentally, economically and socially sustainable. It identifies a range of sustainability targets (including our emissions reduction targets); the actions required to reach them; and a timeline for their delivery across the short, medium and longer-term (to 2050).

Commenting at the launch of the plan, Managing Director, Jim Thorpe, said, "Our plan provides a blueprint for action and a monitoring framework that will be used to measure our progress towards achieving our sustainability goals – the results of which will be reported in our annual sustainability report. By taking action now, we hope to play our part in enabling society to adapt and become more resilient in the face of climate change, capitalising on the opportunities of the climate transition and the green economy while ensuring we remain competitive in the design and construction sector."

Our commitments

1. To achieve net zero emissions and become a climate-neutral company by 2050
2. To measure and reduce our carbon footprint to reach our net zero emissions goal
3. To make financial and operational decisions to reduce our broader environmental impact
4. To invest in new ways of working and new technologies and systems to help our clients and people meet the required emissions reductions
5. To work with staff, clients and industry partners to maximise our impact

Environmental Assessments of the draft National Roads 2040 Strategy

By Frances O'Kelly

ROD has finalised the environmental assessments informing the preparation of NR2040, Transport Infrastructure Ireland's (TII) long-term strategy for the maintenance, development, and management of Ireland's National Roads network. ROD's work included the delivery of all stages of the Strategic Environmental Assessment (SEA) process; the Appropriate Assessment (AA) process including the preparation of a Natura Impact Statement (NIS); and the Strategic Flood Risk Assessment (SFRA) process.

ROD Associate and Spatial Planner, Frances O'Kelly, led our SEA, AA and SFRA teams in embedding sustainability into the strategy. Their work was independent of the NR2040 strategy development team (TII's Strategic Planning Unit and AECOM).

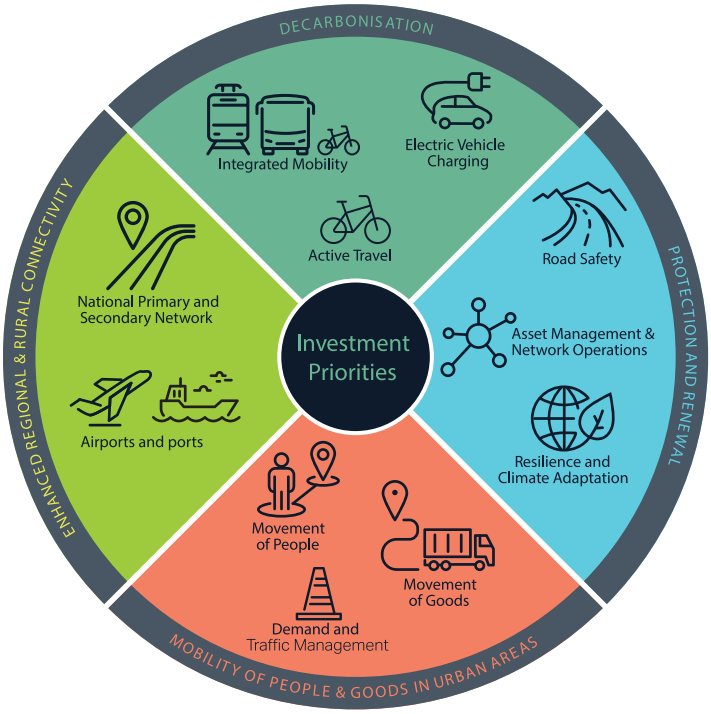
NR2040 is a framework for investment in National Roads in the face of social and environmental change. While the strategy does not reference future schemes specifically, it will influence and provide guidance to sponsoring agencies and local authorities in the development of their plans and schemes.

NR2040's vision is to be "an evolving sustainable transport system focused on safety, innovation, accessibility and mobility of people, goods, and services". The four key objectives of the NR2040 Strategy are illustrated in the diagram below.

NR2040's four investment priorities are consistent with the four National Investment Framework for Transport in Ireland (NIFTI) investment priorities and aligned with the National Planning Framework (NPF) identified in the second diagram below.

- Decarbonisation;
- Protection and renewal;
- Mobility of people and goods in urban areas; and
- Enhanced regional and rural connectivity.

NR2040 FOUR INVESTMENT PRIORITIES AND PORTFOLIOS (TII: NR2040, 2023)



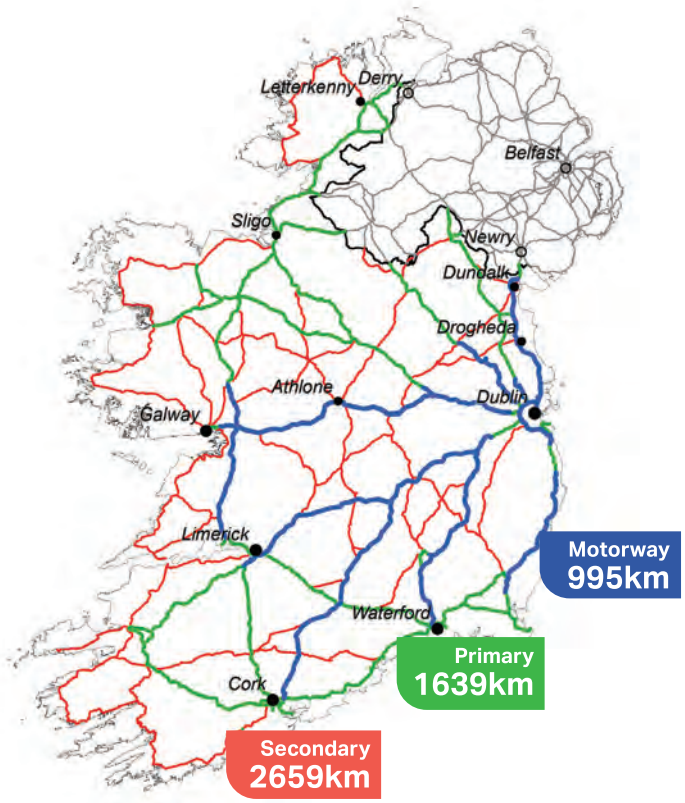
The National Roads network consists of almost 5,300 km of roads. It comprises National Primary roads (including motorways) and National Secondary roads. With approximately 3.5 million daily trips [vehicles (car and bus) and walking] and approximately 82,000 daily HGV trips, it provides vital transport infrastructure for all sectors of society. The network facilitates movement of people and goods and a wide range of trip purposes, including health, education, employment, tourism and access to key services.

3.5 million
daily vehicular trips

82,000
daily HGV trips

TII has responsibility to secure the provision of a safe and efficeint network of national roads... and in doing so must consider the needs of all users

-Roads Act 1993



National Roads (TII, NR2040, 2023)

ROD's environmental assessment teams supported the development of the strategy team by providing relevant baseline data, environmental assessments and an analysis of the sustainability issues to be considered. Our SEA, AA and SFRA teams recommended amendments and/or inclusions to the strategy to address sustainability and environmental protection objectives - as required under the relevant EU Directives and associated transposing national legislation. In addressing the needs of current and future users across Ireland, NR2040 ensures a connected and efficient transport system.

The strategy includes over 30 commitments to addressing issues such as supporting sustainable population growth; including enhancing regional and rural connectivity; and investing in protecting and renewing National Roads as a key public asset. The Strategy also sets out how it will support decarbonisation, including support for integrated transport and planning (preventing the need to travel by car in the first place); supporting active travel measures; and the use of technology in increasing sustainable mobility. These measures will support the Government's commitment to reducing overall Greenhouse Gas emissions by 51 percent by 2030 (relative to 2018 levels) and achieving net-zero emissions by no later than 2050. The Strategy addresses a range of issues, including climate adaptation and resilience, safety, and congestion (demand and traffic management). It aims to encourage Ireland's economic growth in a sustainable manner by supporting the way people and goods move along the National Roads network.

Reflecting on the project, Project Director, Barry Corrigan, said:

"The project was a challenging one for our team. We started working on the project back in 2018 when the effects of climate change and biodiversity loss were evident to us all, but the legal framework was not quite strong enough to demand policy change. After the passing of the Climate Action and Low Carbon Development (Amendment) Act 2021, it is incumbent on us all to consider how our policies and/or activities influence climate change. As professionals, we have been given a stronger mandate to support the creation of truly sustainable development. I am looking forward to seeing how NR2040 translates into policy-making and project prioritisation."

The SEA Statement published in April 2023 details the strategic environmental monitoring programme for the NR2040 Strategy. The monitoring will be led by TII and will promote a better understanding of the effects that the implementation of the Strategy will have on the environment. It will feed into any subsequent reviews of the Strategy.

A Ukrainian bridge designer displaced by war

Nataliia Shcherbyna, a bridge designer from Kyiv, fled her country after Russia's invasion, and now works on the Narrow Water Bridge project, hoping to one day be reunited with her husband.

I was born in the USSR, a country that no longer exists. When Ukraine gained its independence from the Soviet Union in 1991, I was still a child, but I remember a strong sense of optimism about the future. It was a challenging time, however, because the country was poor; professional politicians were few; many factories and plants were forced to close; and several companies teetered between public and private status. My grandparents, like many Ukrainians, lost their life savings, and my parents became unemployed.

Engineering companies were no longer able to pay their staff, but people kept showing up for work. It became a bad joke: one director asks another what to do with staff who turn into the office every day even though there is no money to pay them. His answer: charge them an entry fee.

Education

In high school, I dreamed of becoming a fashion designer, not an engineer. I had already been admitted into the Art Technology Institute in Kyiv when my best friend asked me to attend the Ukrainian Transport University with her instead. I had no idea what I would study there, but – typical teenager - I couldn't say no to my best friend.

It was my friend's mother who encouraged me to enroll on a civil engineering degree course, with a focus on bridge and tunnel building. To this day, whenever we meet, I thank her for miraculously working out the career I was best suited to when I had no clue myself.

My brilliant university tutors worked hard, for ridiculously small salaries, to teach me how to channel my creativity through engineering. After four years, one of my tutors gave my college friend and me the phone number of a project manager with a company named 'Kievsoutzdorproekt', who was looking to recruit someone for his team. My male classmate was the project manager's first pick for the job, but the salary was so small that he could not accept it. I took the job instead and began work as a technician with the company's bridges team.

Even though my job was full time, I was also working part-time as an intern at another engineering company, 'Ukrgiprodor,' and completing my studies at the same time. The university and the two companies were based in completely different parts of the city, which taught me two valuable lessons: how to make the most out of a 24-hour day; and how to survive without sleep.

After graduating, I had a little more time for myself, which I used to pursue a qualification in my first love – fashion design. I won several awards for my work, but I remained in engineering because it ultimately felt like a more serious career path for me.

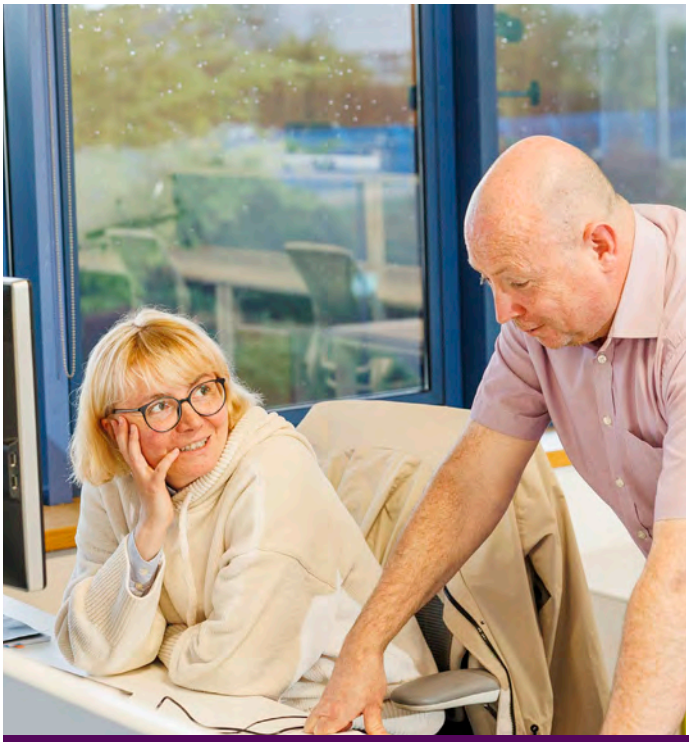
Work experience

In the early years of my career, I taught myself how to use AutoCAD so I could make clear drawings to tight deadlines. I also studied C, C++ programming and Lisp, which helped me to create useful programmes for AutoCAD, but when Dynamic blocks and interactive tables were added to AutoCAD, my programmes became redundant.

Calculations proved difficult for me due to the lack of computers with appropriate software in the office. Only a handful of the experienced engineers had access to programmes such as Lira, Beton and Midas. Out of frustration, I decided to learn MS Excel, which proved very useful when it came to working out my calculations.

After a year in the office, I began visiting construction sites to see what designs looked like in the real world, not just in drawings. I also started creating my own designs for clients. While I hugely enjoyed this aspect of the job – when the engineer becomes an artist – I did not like it when a client made unexpected decisions that forced a fundamental change in my designs. I remember one project in particular: my initial design was for a beautiful, post-stressed concrete bridge with a continuous superstructure. It was, in my opinion, the ideal solution for a bridge located in a densely populated urban environment, surrounded by a complex of historical buildings. The client rejected it, however, in favour of a less attractive bridge with prestressed precast beams.

My next challenge involved learning how to manage time and task tables. One memorable project involved developing two or three bridge solutions - of varying forms and costings - for over 300 structures along a new highway from Lviv to Kherson. Some of the solutions we developed were for existing, historical bridges, while others were for contemporary new structures. The term was two months. As project engineer, I worked alone for two or three weeks, calm and concentrated. During that time, I created work execution tables, four types of documentation templates and prepared technical tasks for the team. The result: We met the deadline!



Nataliia pictured with ROD Associate, Andrew Thomson.

In November 2021, I became acquainted with the concept of 'speed engineering' when, as the situation on the Ukrainian border deteriorated, three of our clients set an end-of-year deadline for three major projects that had originally been scheduled for completion in summer/autumn 2022. As a team of just 14 engineers and two office managers, this presented a massive challenge. The first project was a bridge restoration scheme that involved widening and strengthening a historic bridge at a busy, live traffic location. While my role was that of design engineer, the deadline was such that we had to take on a lot of different tasks. The second project involved widening the capacity of a bridge over a dam. The decision was taken to create a bridge with a two-level superstructure, with new three-level transport interchanges at either end. Again, my role was that of design engineer. The third project involved two steel overpasses in two-level transport interchanges, again in a busy, live traffic location. The existing drainage system was challenged, so a new, complex, underground bridge drainage system was devised to carry run-off from piers, abutments, backwalls and the ground behind them. My role in this project was both project engineer and design engineer.

To meet the challenge, our director devised an approach that involved all 14 engineers working on one project per week, with everyone working Monday to Sunday from 8 am to 10 pm. During the transfer weeks, one half of the team worked on another project, and the other half undertook the documentation which, in Ukraine, included providing four or five sets of drawings, reports and bills of quantities.

My journey to Ireland

When the war with Russia broke out, my husband, daughter and I travelled from Kyiv to the town of Irpin, which was occupied by Russian troops. We needed to take my 86-year-old grandmother, who lived in the town, back with us to the relative safety of Kyiv. Persuading her to leave her home and all that she knew behind was not easy, and in the days that followed, many bridges were bombed, leaving only one extremely risky escape route out of Irpin. The temperature was minus 8 degrees, and without electricity, heating or water, we had no choice but to leave – escaping only 90 minutes before a missile hit my grandmother's home.

Fear made us run to Germany. A kind friend of my mother-in-law gave my daughter and I a place to live and food to eat, but finding work in Germany was impossible for me because I do not speak German. I needed to move to an English-speaking country and, knowing friends who had been warmly welcomed in Ireland, I decided it was our best hope.

My daughter and I arrived in Dublin on St. Patrick's Day, and I remember our surprise at seeing so many people wearing green clothes and huge green hats. A new Irish friend, Rachel, kindly gave us a room, and another Irish friend, Karen, invited us to her home where we discussed my job prospects. Incredible as it is to believe, within a week of arriving in the country, I had, through a connection in Na Fianna GAA club, applied for a job at ROD and been interviewed by Tony Dempsey for a role within his bridges team. And so began my new life in Ireland, and a new phase in my career as a bridge designer.

My first project with ROD was the Dursey Island Cable Car scheme, and my tasks included checking calculation spreadsheets and creating Midas models of the piers. My next project was the Cross Tay Link Road Bridge, where I was part of a team checking the designs for the foundations for the piers. Now, I have the privilege of working on the exciting Narrow Water Bridge project.

Sometimes people ask me what my life in Ireland is like. I tell them that, in the early days, I found it difficult to trust strangers, but now many of those strangers have become my friends, and they are a great support me as I try to create a new home for my daughter and myself.

Before the war with Russia broke out, my husband and I planned to emigrate to Canada with our daughter. We never imagined the dramatic circumstances that would place that dream beyond our reach.

If I allow myself to think about how this could have happened, the only explanation I can come up with is this: we are all so busy living our lives, rearing our families, pursuing our careers, we never imagine that global events will come knocking on the doors of our homes, creating chaos in our lives. And, when the unthinkable does happen, it is too late. We can't stop the clocks.

My hope now is that the war in Ukraine will end soon and that my husband will have a chance to visit Ireland and see what a wonderful country it is.

Five minutes with Frances O'Kelly

ROD Associate and Spatial Planner, Frances O'Kelly.

When did you first become interested in sustainable business practice?

I grew up on a farm. We worked with the seasons, and nothing was wasted. I learned a lot about business and how to work with and respect nature. I also learned the value of community and how, through the sharing of knowledge and experience, it plays an important supportive role in our lives.

What or who inspires you to act on sustainability?

Both our beautiful blue planet and our duty to the next generation inspire me to act on sustainability. The long overdue signing of legally binding emission reduction targets into legislation has set Ireland on a path to achieving net-Zero emissions no later than 2050 and a 51% reduction in emissions by 2030. The period since the launch of the first Government Climate Action Plan (CAP) in 2019 has been challenging, but I'm hopeful that, with each annual review of the CAP, government departments will work together and Ireland can become a leader in sustainability.

What lessons can we take from organisations who have taken real leadership in the fight to save our planet?

As a town planner, I am interested in how different countries, cities and governments are leading the way on sustainability and climate action. Copenhagen is known for its sustainable urban transportation system, social equity and innovation while Singapore is a high-density city that has successfully integrated nature into city design and urban living. In Denmark, the Ministry of Finance is responsible for coordinating the national implementation of the 17 Sustainable Development Goals (SDGs), while all other ministries are responsible for developing policies that address the 17 SDGs. Denmark factors the quality of life of its citizens into its climate action plans, promoting physical health, environmental awareness, and the positive impacts the plans have on both the individual and collective system. There is an awareness and expectation by the citizen through their policy makers of the real costs to society in terms of health, economy and the environment. It shows us that, with the right leadership, real change is possible.

Have you managed to embed sustainability into ROD?

On becoming Sustainability Manager at ROD, I wanted to develop a long-term Sustainability Plan that focused on reducing carbon emissions, while giving appropriate attention to social and economic considerations. Engagement across the whole organisation was key. Our plan builds on our existing successes, and creates a framework to support our people, clients and industry partners achieve the common goal of avoiding negative impacts, maximising the positives and achieving net-Zero by 2050. It will take time to fully embed the plan, and continued investment is required to ensure delivery is speedy and meaningful. We are now in the implementation phase of the plan, and our first annual report is due to be published in October.

Quick Facts

Born: County Limerick

Education: BSc. Spatial Planning, Master Community and Local Development (Dublin Institute of Technology)

Current role: Associate and Sustainability Manager at ROD. Environmental and Spatial Planner working in forward planning and development management.

Likes: Healthy tasty food, dancing, yoga, sea swimming, enjoying the great outdoors.

Dislikes: Processed foods, temperatures above 29 degrees Celsius.

Book: Ravenous: How to get ourselves and our planet into shape. Henry Dimbleby with Jemima Lewis. Profile 2023.

Film: The Swimmers (2022)

Album: Faithless 2.0

Kinvara Active Travel Scheme stays on track

By Gemma Rothwell

Dunguaire Castle, Kinvara, Co. Galway.

Galway County Council has commissioned the ROD-AECOM Alliance to deliver the N67 Kinvara Village Active Travel Scheme through phases three and four of the TII Project Management Guidelines (i.e. design, assessment and statutory process). The proposed scheme will link the charming seaside village of Kinvara to the stunning 16th-century Dunguaire Castle and, continuing further east, connect to the new footpath/cycleway delivered as part of our earlier N67 Ballinderreen to Kinvara Road Realignment project.

With an overall length of approximately 1.3km, the scheme will also potentially ultimately comprise a short section of the proposed Athlone to Galway Greenway Scheme, which is currently at preferred option stage.

ROD is looking forward to building on our recent success with An Bord Pleanála approvals of schemes in similarly sensitive environments, including the River Suir Sustainable Transport Bridge and Waterford Flood Defence schemes in Waterford City and Trinity Wharf in Wexford Town.

Key constraints at the site include:

- Galway Bay Complex Special Area of Conservation (SAC);
- Inner Galway Bay Special Protection Area (SPA);
- Dunguaire Castle and several other archaeological sites, including a tower house and fort;
- several buildings on the National Inventory of Architectural Heritage (NIAH);
- a complex karst environment with several springs and underground rivers; and
- the N67 national secondary road to the south.

"Having lead the feasibility study for the scheme in 2008 when it was being promoted by a local community group, I am particularly pleased to see the continued progress of the project."

ROD Project Director, Barry Corrigan.

ROD Student Outreach – St. Raphaela's Girls' Primary School

By John Daly

John Daly of ROD at St. Raphaela's.

ROD plays an active role in industry initiatives aimed at raising the profile of the engineering profession, and we invest considerable resources in schools' initiatives encouraging more students into the profession. Every year, for example, we celebrate Engineers Week by sending our graduate engineers into schools across Dublin to talk about the exciting, fast-moving and challenging world of engineering. This year, Elaine Cogley, Christopher McGuill, Niamh Moore and I visited St. Raphaela's Primary School (Girls) in Stillorgan, County Dublin, to speak to over 100 fifth and sixth class students.

Our day got off to a great start when, on arrival at the school, we spotted posters and photos of various STEM projects already undertaken by the students decorating the walls. This gave us the confidence to dive straight in with a discussion on the wide range of disciplines within engineering and the famous people with qualifications in the field. The English actor, comedian and writer, Rowan Atkinson, emerged as a clear favourite with the girls, who had never guessed that Mr. Bean's impressive CV featured a qualification in electrical engineering! We then discussed our own backgrounds; the routes we followed into engineering; and the different types of work each of us is undertaking at ROD.

Being engineers, we naturally wanted the main focus of our visit to be a practical task, so we asked the girls to build the tallest towers possible using only paper and sellotape. The catch: the towers had to be strong enough to support a c.500g weight on top. We divided the girls into teams of five and encouraged them to think about how shape can affect strength. We also emphasised the importance of collaborating with their team members and thinking through the design before starting to build.

We enjoyed listening to the various teams as they moved from brainstorming to building, and it was fun to see where the girls' creative minds and competitive natures led them. In the midst of all the energy and enthusiasm, some clever solutions emerged, and we were particularly impressed by one team's use of cross bracing to steady their four-legged tower.

When the towers were built, we invited the teams to test them by placing an awkward weight on top. The tension was palpable as the students watched some towers struggle and others hold under the weight. This led us neatly into the final part of our day: a discussion on how to increase the bearing capacity of the towers and the challenges the students should look out for when designing in the future. My colleagues and I were thoroughly impressed by the girls' openness to thinking, talking and engaging with engineering, and it was great to see the mixture of excitement and concentration in their faces as they tackled the tower-building task.

"Being able to translate the complex work you do, to be relatable and accessible by children, is a real skill. Each of you put such thought into your presentations and they were so inspiring. The work of ROD is world class! Thank you all also for your kindness towards the children, the encouragement to develop their problem-solving, collaboration, communication and perseverance skills!"

Áine Rooney, teacher at St. Raphaela's Primary School, Stillorgan.

Bascule leaves installed for Great Yarmouth's new £121m bridge

By Paul Mitchell

The £121m Great Yarmouth Third River Crossing project reached a major milestone in March as two 770 tonne opening deck sections were installed and raised during a 72-hour possession of the River Yare, during which period all shipping activity on that section of the river was suspended.

Lifting these two bascule leaves into place within the stipulated time frame presented significant logistical and technical challenges for the project team, including the BAM UK & Ireland and Farrans Construction joint venture, the ROD-H&H design partnership, the client Norfolk County Council, and structural steelwork and moveable bridge systems experts Victor Buyck Steel Construction and Qualter Hall & Co Limited. The two 45m long (forward and back span length), 24m wide leaf sections were fabricated and assembled in Ghent, before being transported by barge across the English Channel. An 1,800 tonne Matador 3 floating crane was used to lift the leaves into place. Site monitoring and verification of the bascule span trunnion assemblies were performed to confirm alignment of bearings. 425 tonnes of high-density counterbalance concrete were then installed before the leaves were raised into their open position.

The leaves are currently being commissioned and tested with complete mechanical, electrical and control systems. Other finishing works include the installation of precast beams and remaining concrete works to complete the bascule abutment deck slab. The alignment and installation of live load bearings and deck joints will take place during a final 72-hour possession of the river.

The new movable bridge will provide a 50-metre navigational clearance along the river and will carry two road carriageways of two lanes each and two footpaths. When complete, it will link the A47 at Harfrey's roundabout on the western side of the river to the port and the enterprise zone on the other side, alleviating congestion, reducing journey times and stimulating growth in both the port and the seaside town.

The bridge is expected to be open to traffic later this year.

ROD exhibits at Bridges 2023

By Peter Campbell

ROD was delighted to be among the exhibitors at the Bridges 2023 conference in the Coventry Building Society (CBS) Arena on 8th March. Directors Joe Kelly and Aonghus O'Keeffe joined our UK Bridges team lead, John Collins, and myself at the event. The theme of the conference was 'Discovery: solutions for the next two decades of bridge engineering'.

Presentations covered a broad range of areas, including new scour detection technology; UAVs and inspections; population-based structural health monitoring (SHM); use of lime mortar for repair; ultra-high performance fibre reinforced concrete (UHPFRC) for construction and strengthening; parametrics for HS2 bridge design; containment risk for LA structures; Network Rail Flow Bridge system; and lessons from 7th century bridge management.

Our team used the opportunity to discuss ROD's experience and skills in bridge asset management, innovation and sustainable design with clients, consultants, contractors, specialists and architects. John joined Raphael Silva from the Humber Bridge Board (HBB), to deliver a presentation on ROD's inspection and rehabilitation work on the 2,220m long Humber Bridge. Peter delivered a short presentation on hidden defects in existing bridges, as part of a session of concise, quick-fire presentations reviewed by an independent panel of judges from the ADEPT Bridges Group, which brings together directors from county, unitary, metropolitan and combined authorities, along with local enterprise partnerships, sub-national transport bodies and corporate partners drawn from key service sectors. Their primary role is to take the lead in transforming local authorities.

ROD Director, Joe Kelly, and Associate, John Collins, pictured at the ROD stand at the Bridges 2023 Conference and Exhibition.

ROD outgrows its first North Dublin office in less than five years

By Barry Corrigan

ROD team members Michael Wall, Louise Aherne and Patrick Kelleher pictured outside the new office in Woodford Business Park, Santry.

Team members in the light-filled office canteen.

In the summer of 2018, ROD opened our first North Dublin office in Northwood Court, Santry, as an investment designed to support our clients, employees and long-term plans into the future. The response was universally positive. In addition to providing a central North Dublin location for in-person client and partner meetings, it brought our team closer to project sites in the region, improving our response times to client requests, issues and queries. Our local staff were equally delighted as it offered many of them the option of leaving their cars at home and either walking, cycling or taking public transport to a more convenient workplace.

Less than five years later, we have outgrown this first 1,800 sq. ft. office and moved to a new, larger location nearby to meet our changing needs. Our new office is in Woodford Business Park, also in Santry, which is conveniently located only five minutes from Dublin Airport, while also providing easy access to the Swords to City Quality Bus Corridor; the M50 and M1; and Dublin Port. The office will accommodate up to 50 employees and includes two generously sized meeting rooms and a staff canteen.

Commenting on the move, Managing Director, Jim Thorpe, said "The new office in Woodford Business Park strengthens ROD's presence in North Dublin and provides a solid base from which to plan our future growth and attract new talent. In doubling our square footage, we have been able to provide a more spacious and high-tech environment for staff and visitors, and to create more spaces for our teams to collaborate outside of a traditional conference room or desk arrangement. An important part of improving the work-life balance for our people is making the commute to work on office days easier – it means greater flexibility, more time, reduced stress and reduced commuting costs – all important considerations as we strive as a company to achieve our sustainability goals."

Pictured (L-R): Ecologist, Siofra Sealy and Senior Engineer, Ciara Breen.

Daire Ó Riagáin announced as ROD's newest shareholder and Technical Director

By Harry Meighan

ROD Technical Director, Daire Ó Riagáin.

ROD is pleased to announce that Daire Ó Riagáin, BE(Hons), PGrad Dip Cons Law, AdvDip Procurement, CEng FIEI, RConsEI, is our newest shareholder and has been appointed as a Technical Director. Managing Director, Jim Thorpe, said, “Daire joined us as an assistant resident engineer in 2010 and has since progressed to play a central role in our business. Working as an Employer’s Representative in our contract administration team, he has become a trusted advisor to our clients, and has developed the leadership qualities to shape the future of the company as we move towards our 50th year in business.”

Daire joined ROD to work on the Iarnród Éireann Level Crossing Replacement Framework, having previously worked as a structural design engineer in another engineering consultancy. In 2017, Daire moved away from site-based supervision roles and became Project Manager on the Coonagh to Knockalisheen Distributor Road project, TII’s ITS Equipment Maintenance Term Contract and the N11 Parallel Road Safety scheme. He also took up the role of coordinator in our contract administration team.

Daire was promoted to Associate in 2020. He is currently undertaking the role of Employer’s Representative under the Public Works Contracts for several projects, including Athy Distributor Road; the Clontarf to City Centre Project; Whitegates to Athlone Castle Cycleway Link; and the eMOS Programme M50 ITS Deployment Contract.

Double celebration for Daire

On Thursday, 25th May, Daire was conferred as a fellow of Engineer Ireland, the professional membership body for engineers in Ireland. Fellowship of the institution is conferred to “highly skilled professionals who help shape, influence and inspire both engineers and the future of the engineering industry.”

Speaking after the conferring ceremony, Daire said, "Becoming part of this distinguished community of engineers is a great honour, and I look forward to supporting others as they work towards achieving this important professional milestone."

Newly conferred Fellow of Engineers Ireland, Daire Ó’Riagáin, pictured receiving his parchment from former president of Engineers Ireland, John Power.

ROD takes on the ski slopes at Kilternan

By Debbie Chiu

Pictured (L-R): Srijith Unni, Ernesto Picardi, Melissa McNabb, Geethu Bennyson, Debbie Chiu.

When the first signs of spring began to emerge, neither I nor my fellow Social Committee members were quite ready to throw off our winter coats and hats, so we decided to arrange an office outing to Kilternan, home to the Ski Club of Ireland, which operates the largest artificial ski slope in the country.

Nestled in the foothills of the Dublin mountains, Kilternan has three slopes of varying levels of difficulty, making it the perfect place for the first-timers amongst us to try our hand at skiing and snowboarding, and for the more experienced to sharpen their skills before the summer ushers in.

This was the committee's first time organising a skiing/snowboarding event, but our colleague, Nicholas McCann, who moonlights as a ski instructor at the club, was on hand to help us prepare, and we were delighted with the great turn-out.

The evening began with the all-important nibbles – I mean warm up! - and before long everyone was ready to hit the slopes. Our two and a half hours flew by, but I am glad to say that everyone returned to terra firma with smiles on their faces! It was a memorable night and one that will certainly be repeated!

New Recruits

Aishwarya Katyal

Aishwarya joined our team as a Graduate Urban Designer / Planner in May. A passion for transforming imaginative visions into tangible realities led her to undertake a Bachelor's degree in Architecture at Bharati Vidyapeeth in India. After graduating, she worked as a Graduate Architect for a year before being inspired by her interest in projects involving public spaces to pursue a Master's in Urban Design and Planning at UCD. An avid creative, Aishwarya enjoys sketching, travel and exploring diverse cultures through food.

Jane Stafford

Jane joined our team as a Graduate Ecologist in May. A graduate of the University of Montana, where she studied wildlife biology, Jane spent the past seven years living in the USA, where she gained field experience working in the Sonoran Desert and the Rocky Mountains. Now back in Ireland, she is delighted to be reacquainting herself with the Irish landscape and its inhabitants and is keen to demonstrate her skill in identifying spiders to the rest of the team!

Emeline LaFortune

Emeline recently joined our environmental team as a Graduate Environmental Scientist. Born and raised in the Seychelles, her early passion for environmental sustainability led her to pursue a Bachelor's degree in Environment and Sustainability in the UK, followed by a Master's in Environmental Policy at University College Dublin (UCD). Experience of managing projects at key environmental sites in the Seychelles has given Emeline valuable skills in report writing, species surveying and biosecurity measures. She is passionate about creating sustainable solutions that balance economic development with environmental protection. Emeline is a big animal lover and enjoys baking, dancing and spending time with a crochet kit and a painting set.

Ciara Breen

Ciara joined our bridges team as a Senior Engineer last February. A graduate of Queen's University Belfast, where she earned a Master's degree in Structural Engineering, Ciara spent the past 12 years working with a large engineering consultancy in Sydney, Australia. She worked on multidisciplinary road and rail infrastructure projects, gaining experience in the design and construction of bridges and civil structures. Now back in Ireland, Ciara is slowly adjusting to the Irish weather but enjoying being back with her family and discovering new places to visit across the country. When not running after her 16-month-old baby, Ciara enjoys travelling and playing camogie and Gaelic football.

Daffodil Day 2023

ROD was delighted to support Daffodil Day 2023, with our staff raising €1500 to help the Irish Cancer Society and Macmillan Cancer Support continue their vital advocacy, support and research work.

Photo Gallery

ROD team members pictured at the 5k Staff Relays event, which took place in the Phoenix Park, Dublin, on 25th May 2023. ROD fielded three teams, one of which finished in a solid 17th position out of 676 teams. Names are listed from R-L: Robert Corbally, John Ahern, Charlie Johnston, Harry Jones, Juliana Vasconcelos, Gary Selby, Srijith Unni, Stuart Cushion, Christopher McGuill, John Bell, Geethu Bennyson.

Pictured on a hill walk from Kilgobbin Wood to Carrickgollogan in south county Dublin last May are (L-R): Tomasz Kosmala, Marcin Nikonowicz, Lisa Dunne, Aoife O'Sullivan, Elaine Cogley and Clodagh Rea.

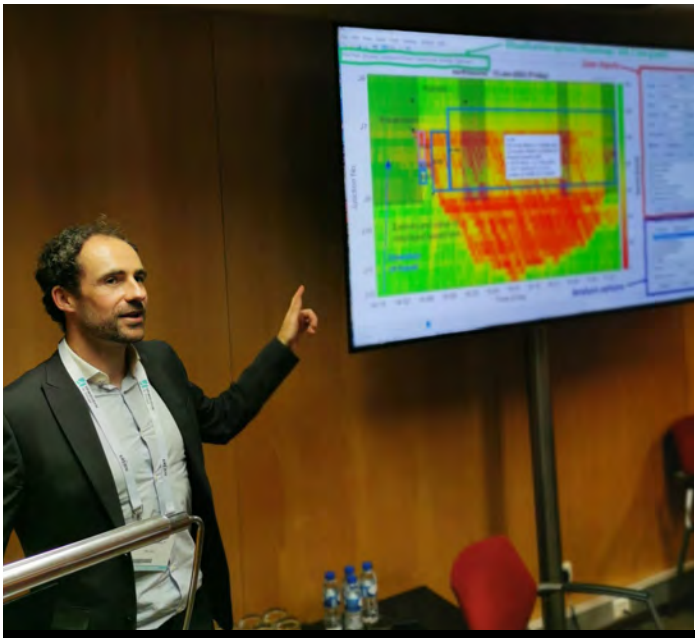
Senior Engineer, Inês Roque Domingues, pictured delivering a presentation titled 'Herring Bridge, Great Yarmouth: From Concept to Construction' at the ICE Northern Ireland ECNet Conference, which took place on 19 May 2023. Inês delivered the presentation together with Ryan Dillon from Bam Nuttall and Lynsey McNeilly from Farrans Construction. Image courtesy of Michael Cooper Photography.

Photo Gallery

Eoin Ó Catháin, Michael Conroy, Ken Heffernan, Elio Rapa (TYPSA) and Daniel Ahern undertaking site visit for BusConnects Cork.

Pictured from left: Senior Lecturer at the University of Dundee, Jan Vorstius, and Designer's Site Representative, Tim Sullivan, during a talk in which Tim shared his experience of a life in engineering with the students in the School of Science and Technology.

Director, Mark Kilcullen, pictured receiving a piece of midlands bog oak from the Chair of the Engineers Ireland Midlands Region, Tony Buckley, as a thank you for delivering a technical presentation on the Whitegates Pedestrian Bridge project in Athlone to the Midlands membership. Image courtesy of the Engineers Ireland Midlands Region Committee.



Senior Research Engineer, Robert Corbally, pictured presenting a technical paper, titled 'A Study of Fundamental Traffic Behaviour and Factors Influencing Motorway Capacity,' at the ITS Europe Congress in Lisbon last May.

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