



Roughan & O'Donovan | Consulting Engineers

SUSTAINABILITY REPORT 2023



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1.0 Introduction

1.1 Executive summary

Roughan & O'Donovan (ROD) is pleased to present our first annual sustainability report, which describes the progress we are making towards meeting our corporate sustainability targets and objectives, as set out in our sustainability plan. In addition to highlighting the areas in which we have been successful, this report details the challenges we face and where we need to improve.

In the twelve months to October 2023, we have worked hard- both in our projects and our operations- to achieve several of the ambitious goals set out in our sustainability plan.

Key achievements to date include:

- We are reducing our greenhouse gas emissions from office operations;
- We have increased our use of carbon counting in our projects from the option selection stage to design to supporting the goal of carbon neutral economies; and
- We are in the process of creating our carbon reduction plan (CRP) for the organisation.

1.2 Sustainability plan overview

Our Sustainability Plan was published in 2023 and provides a blueprint for action and a monitoring framework that will be used to measure our progress towards achieving our sustainability goals.

Key sustainability goals

- Integrate sustainability across the company;
- Develop a net-zero standard/science based target (SBT) for the company to reach net-zero by 2050;
- Develop a CRP that addresses the project requirements necessary to record and reduce company emissions; and
- Support training, development and/or research initiatives aimed at reducing emissions and supporting climate resilience and the decarbonisation of the economy.

Sustainability commitments

- Achieve net zero emissions and become a climate-neutral company by 2050;
- Measure and reduce our carbon footprint to reach our net zero emissions goal;
- Make financial and operational decisions to reduce our broader environmental impact;
- Invest in new ways of working and new technologies and systems to help our clients and people meet the required emissions reductions; and
- Work with staff, clients and industry partners to maximise our impact.

“

We are committed to reducing the greenhouse gas emissions related to our office operations by 50% by 2030 and to reaching net zero by 2050

”



1.3 GRI Standards





ROD has produced this report with reference to the global reporting initiative (GRI) standards, which cover a broad range of topics, including biodiversity, tax, waste, emissions, diversity, equality, and health and safety.

The report provides an update on the progress of our action areas across the material topics outlined in the graphic below.

Fig: 1.0

Action areas	GRI Standards	United Nations Sustainable Development Goals
Energy and carbon	<ul style="list-style-type: none"> GRI 302: Energy GRI 305: Emissions 	
Travel and transport	<ul style="list-style-type: none"> GRI 302: Energy GRI 305: Emissions 	
Biodiversity	<ul style="list-style-type: none"> GRI 304: Biodiversity 	
Water and effluents	<ul style="list-style-type: none"> GRI 303: Water and effluents 	
Materials and waste	<ul style="list-style-type: none"> GRI 301: Materials GRI 306: Waste 	
Training and education	<ul style="list-style-type: none"> GRI 404: Training and education 	

2.0 Energy and carbon

Goal	Relevant GRI Standards	Relevant UN SDGs
Deliver design and environmental solutions that support the transition to climate-resilient, biodiversity-rich and climate-neutral economies	GRI 302: Energy GRI 305: Emissions	   

2.1 Targets and actions

A summary of our progress towards achieving our sustainability goals and associated targets and actions is outlined below.

Our commitments
<ol style="list-style-type: none"> 1 We will set science-based emission reduction targets in line with SBTi criteria; 2 We will work to establish emission reduction targets in the form of Scope 1, 2, and 3; 3 We will submit our targets for validation; 4 We will develop a carbon reduction plan to achieve our targets; 5 We will report our progress towards the achievement of our targets annually; and 6 If necessary, we will recalibrate our targets to align with the latest climate science and emissions data.

2.1.1 Carbon reduction plan

Develop a carbon reduction plan (CRP)

Our first CRP, detailing our current carbon footprint and affirming our commitment to achieving net zero by 2050, will be published in 2024. It will serve as the baseline against which all future emissions are measured.

Sign up to Pledge to Net Zero

ROD has signed up to Pledge to Net Zero, the environmental industry’s global commitment, requiring science-based targets from its signatories to tackle greenhouse gas emissions within their organisations. This signals our commitment to delivering greenhouse gas reductions in line with a 1.5°C climate change scenario and publicly reporting our progress against this target each year.



Develop a net zero standard/science-based target (SBT)

ROD is developing a science-based net zero decarbonisation target to enable us to work towards our long-term goal of achieving net zero operational greenhouse gas (GHG) by 2050. It is intended that our target will be validated by the Science Based Targets initiative (SBTi), which drives ambitious climate action in the private sector by enabling organisations to set robust and credible emission reduction targets.



Use the following tools as part of design and environmental assessments:

- **The Transport Infrastructure Ireland (TII) Carbon Tool;**
- **PAS 2080 Guidance;**
- **The Institution of Structural Engineers (IStructE) carbon calculator;**
- **Concrete Centre; and**
- **One Click LCA.**

The TII Carbon Tool

ROD has used the TII Carbon Tool on several projects over the past 12 years, including the N4 Mullingar to Longford (Roosky) Road project options assessment; the N26 Ballina Bypass options assessment; and the DART+ West electrification project Environmental Impact Assessment Report (EIAR). We will continue using the tool on our projects, where appropriate.

PAS 2080 Guidance

An ROD staff member attended an Institution of Civil Engineers (ICE) Carbon Management in Infrastructure training course in 2022. The course provided practical guidance on applying PAS 2080 to infrastructure projects, with the combined aims of reducing carbon, reducing cost and adding value. The knowledge gained at this event was subsequently shared with the wider ROD team during an in-house training session, which took place during Sustainability Month.

Institution of Structural Engineers (IStructE) Carbon Calculator

ROD has assessed many of the carbon calculators available in the marketplace, including the IStructE carbon calculator, One Click LCA and the TII carbon assessment tool, amongst others. We found that the right calculator for one department does not necessarily suit the needs of another department, so different calculators will be used across the company to get the best results.

Concrete Centre

A carbon calculator was used to provide a high-level comparison of embodied carbon during Stage 1 of two projects: St Otteran's Hospital (a two-storey children's disability accommodation structure) and the Health Service Executive (Republic of Ireland) Decarbonisation Pathfinder Programme. This allowed for greater consideration of carbon from the outset, giving the client insight into the environmental impact of a project. Some teams have already started including the outputs from these calculators in their projects, and the remaining teams are expected to begin doing the same soon.

One Click LCA

As we gain more experience in carbon calculation, a retrospective assessment of early-stage carbon estimates will be undertaken to compare the as-built calculations with the early-stage assessments to see where the key differences arose.

2.1.2 Share knowledge and create systems change

Develop an embodied carbon design checklist for projects

As the embodied carbon calculation becomes more embedded in our Stage 1 approach, we aim to use this to track embodied carbon in our projects and to identify approaches that can deliver improvements in terms of embodied carbon.

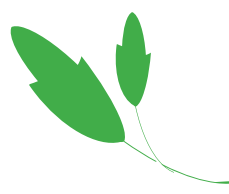
Hold knowledge sharing workshops on how to reduce operational and embodied carbon on projects

ROD will continue to hold knowledge sharing workshops aimed at:

- raising staff awareness of the large range of strategies available to reduce embodied carbon on projects;
- increasing the likelihood that carbon discussions will happen in early design stages to unlock greater opportunities for embodied carbon reductions; and
- inspiring collaboration between team members to reduce embodied carbon on projects.

Amend project plan and project review processes/ Integrated Management Systems to explicitly address energy and carbon

Our Sustainability Committee proposed the amendment of some IMS procedures to ensure that project teams consider how projects can deliver energy and carbon reductions in line with Government commitments and the actions in our sustainability plan.



2.1.3 Increase energy efficiency and renewable energy in projects and business activities

Integrate energy efficiency into designs

ROD promotes energy efficiency in designs, as appropriate. As the civil and structural consultants for Stage 1 of the HSE Decarbonisation Pathfinders Programme (see case study on page 8), for example, we have been involved in identifying solutions and pathways for our client to achieve a 51% reduction in energy-related CO₂ emissions and a 50% improvement in energy efficiency from its buildings stock.

Reduce energy requirements of our offices to net zero by 2050

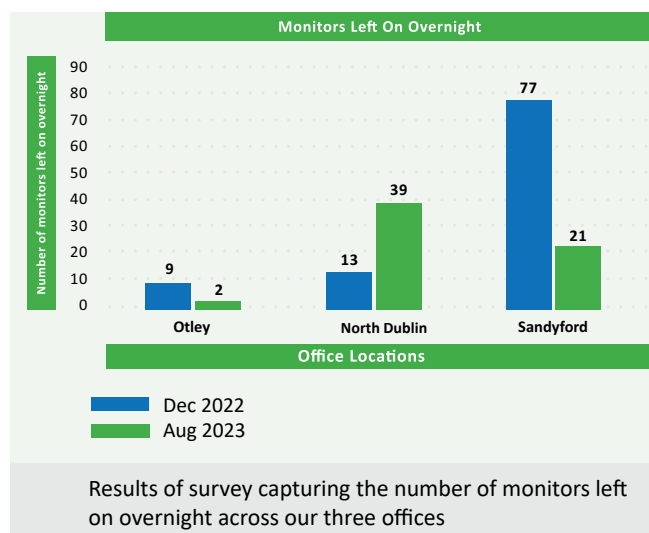
In 2023, we started to record our greenhouse gas (GHG) emissions using the Sustainable Energy Authority of Ireland (SEAI) Energy Bill Tracker Tool. We also undertook an energy audit of our Sandyford office through the SEAI Support Scheme for Energy Audits (SSEA). The findings of the audit are outlined in Case Study (C) on page 9. Our aim is to establish an energy baseline and identify opportunities for further energy reduction into the future. The tracker provides a detailed energy audit report outlining the greatest energy users and provides a list of opportunities for improvement on project and/or supporting behaviour changes. We have an energy performance certificate for our UK office, and we are beginning to track the energy bills of our North Dublin office.

Promote and support individual awareness and behavioural change

We host regular knowledge sharing sessions to raise awareness of the steps individual staff members can take to help us reduce our energy consumption, for example, turning off their computers when they leave the office in the evening.

The company conducted two random PC/monitor energy audits in December 2022 and August 2023 to survey devices left on overnight across three offices. The results of the audits were mixed, with some offices having more devices left on than others.

The company will continue to raise awareness of the issue by sharing the results of the audits with staff and providing energy saving tips for the office and the home. As an additional energy-saving measure, our IT team changed our default printer settings to black and white, double sided.



Avoid, reduce and, if necessary, mitigate the environmental and climate impacts of projects

ROD seeks to avoid, reduce and, if necessary, mitigate the environmental and climate impacts of all projects as part of our options assessment, design and environmental services.



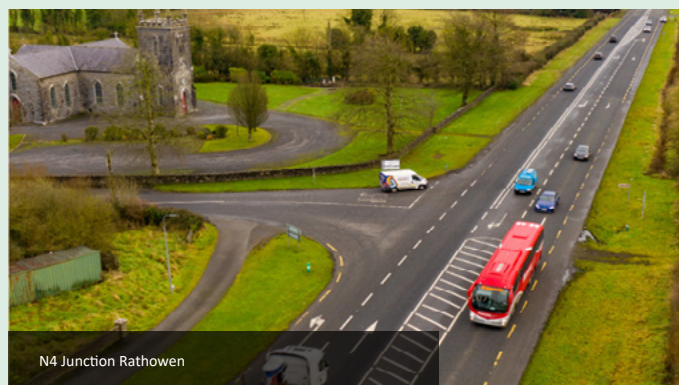
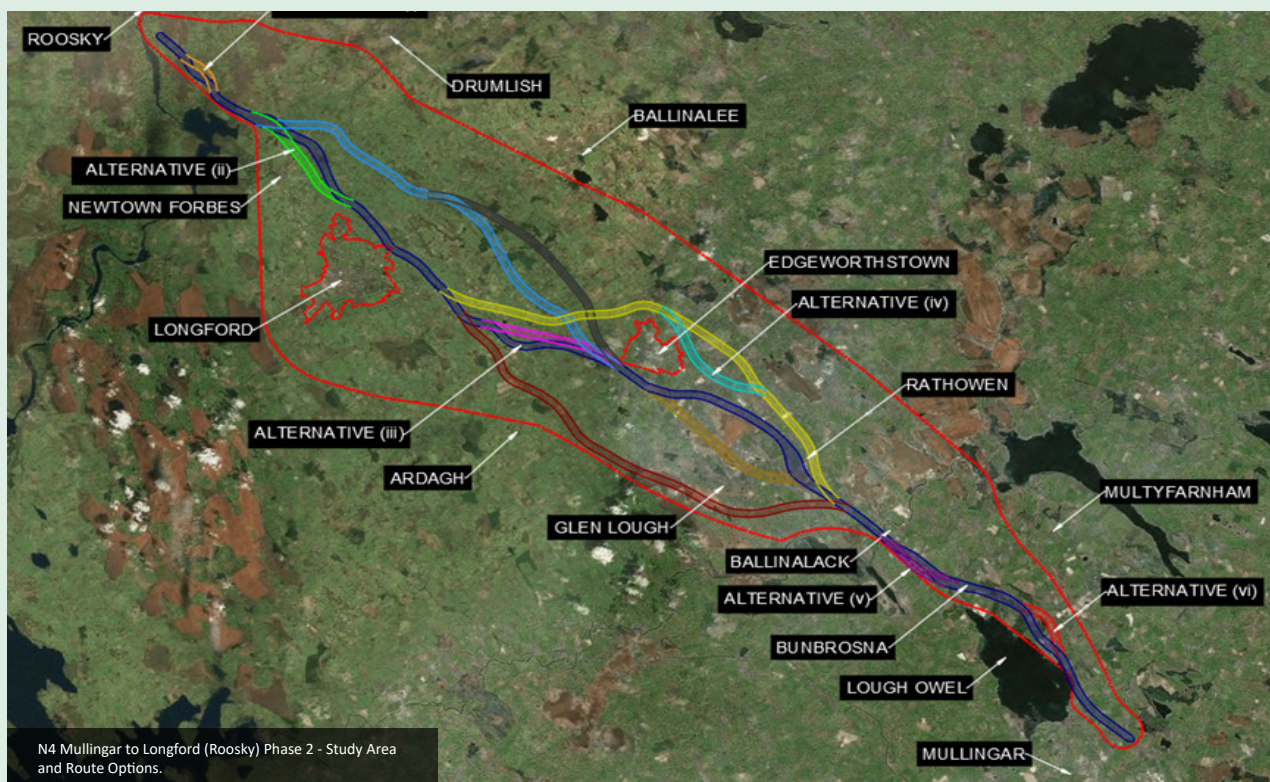
2.2 Case Study (A)

N4 Mullingar to Longford (Roosky) project

ROD used the TII Carbon Tool to assess the seven route options on this road development scheme. To support the Options Selection process, the following carbon saving opportunities were identified:

- Reusability of 95% cuttings has been assumed to provide for a more sustainable design;
- Mainline pavement design has been designed as long-life pavement for each route option;
- Ground stabilisation techniques could potentially be used to minimise waste arising from the site;
- Carbon sink opportunities were incorporated into the assessment through the provision of 75 ha of vegetation for landscaping purposes; and
- Low-carbon cement could potentially be used in the design, further reducing construction carbon emissions.

As the project moves into the next phase, further consideration will be given to carbon saving and carbon sink opportunities, and these will be expanded upon to keep pace with emerging technologies in material development. We will also make every effort to reduce the impact of the preferred route option on climate.



2.2 Case Study (B)

Health Service Executive (Republic of Ireland) Decarbonisation Pathfinder Projects

ROD is part of a team engaged by the HSE to progress designs and advise on the retrofit works necessary to improve energy and emissions performance at nine representative healthcare sites across Ireland. The pilot projects will support the development of a decarbonisation strategy for the client's entire stock of buildings (approx. 3,500).

The programme will identify design solutions, assess financial implications, and evaluate viable technical solutions that can support the achievement of its decarbonisation and energy efficiency goals by 2050. These include:

- improving energy efficiency by 50% by 2030;
- reducing energy-related carbon emissions by 51% by 2030;
- retrofitting buildings to have a building energy rating (BER) of 'B2' by 2030; and
- providing a clear pathway to achieving net-zero carbon emissions.

A recent study of the client's 120 worst performing buildings in terms of energy emissions indicated that approximately 230kt CO₂ is currently being produced. Our client is seeking to reduce this and has set itself an initial goal of 99kt CO₂.



2.2 Case Study (C)

Energy Audit Report

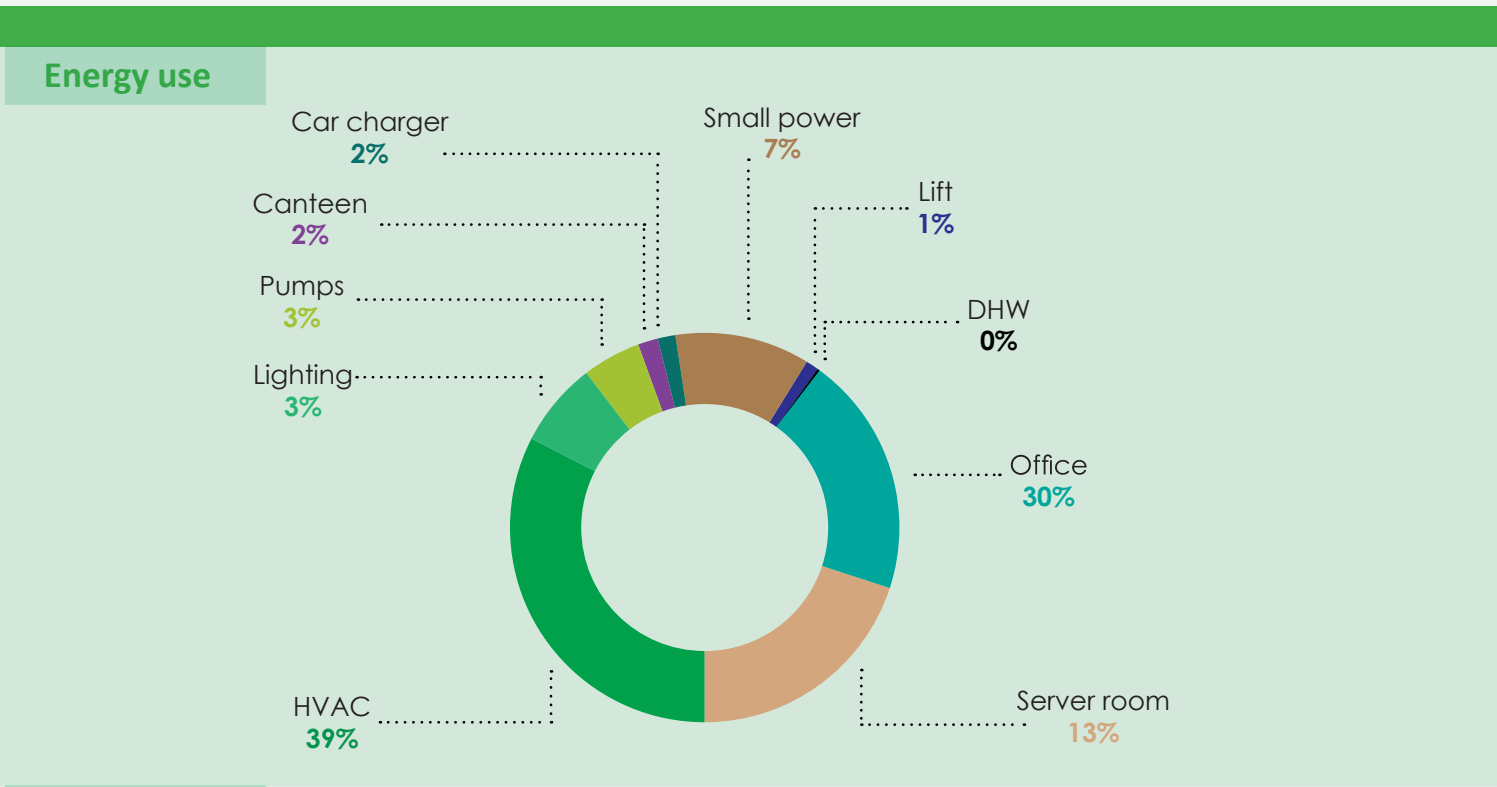
One of our key sustainability goals is to reduce the energy requirements of our offices to net zero by 2050. With this in mind, we undertook an energy audit of our head office in Sandyford, Co. Dublin. All types of energy used in the building were analysed, including electricity use, space heating, hot water and transport. The most significant energy users were identified and ranked according to the kilowatt hours (kWh) used and cost per year.

The three most expensive energy users in the office, at 82% of the energy use, are:

1. heating, ventilation and air conditioning (HVAC)
2. office equipment
3. the server room

All other energy users make up 8%.

The energy audit identified the installation of rooftop solar photovoltaics (PV) as an opportunity to generate renewable electricity. The space allows for 58kilowatt peak (kWp), which would meet 23% of our yearly electricity demand.




Energy action plan

Current	Energy Action Plan	Potential
★★★★★	Energy management	★★★★★
★★★★★	Building fabric	★★★★★
★★★★★	Building services	★★★★★
N/A	Manufacturing & processing equipment	N/A
★★★	Manufacturing & processing controls	★★★★★
★★★	Use of renewables	★★★★★

3.0 Biodiversity



Goal	Relevant GRI Standards	Relevant UN SDGs
Deliver design and environmental solutions that support the transition to a biodiversity-rich environment	GRI 304: Biodiversity	    

3.1 Targets and actions

A summary of our progress towards achieving our sustainability goals in respect of biodiversity-together with the associated targets and actions- is outlined below.

3.1.1 Supporting biodiversity on projects

ROD will promote the implementation of no net loss (NNL) and/or biodiversity net gain (BNG–UK) on all major projects for which we have been engaged as environmental consultants

There is currently no guidance related to achieving NNL or BNG in Ireland. The UK is on its fourth version of the BNG toolkit and projects in England will soon require a 10% increase in biodiversity. TII is currently developing a BNG toolkit.

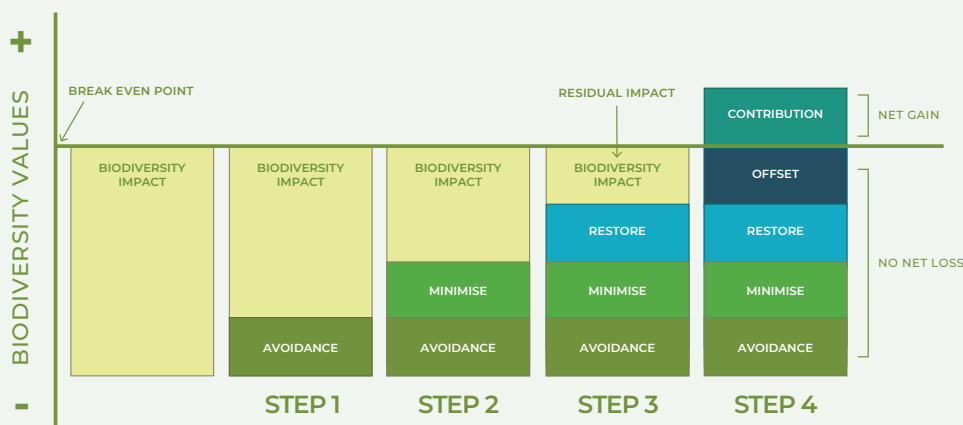
In the absence of any guidelines or toolkit for calculating BNG in Ireland, or any legislation or guidelines related to achieving BNG, ROD is incorporating biodiversity enhancements into all projects, where feasible, and has applied for funding through a Transport Infrastructure Ireland (TII) research call-off for the development of a BNG metric for linear infrastructure in 2023. See the A6 Dungiven to Drumahoe Dualling project case study on page 12.

Amend project plan and project review processes/ information management system (IMS) to integrate biodiversity into decision-making on projects

We have amended our IMS procedures to support the targets in line with our Sustainability Plan. By considering biodiversity in our projects, we can help to address the global biodiversity crisis.

Avoid, reduce and, where necessary, mitigate impacts on biodiversity during the Environmental Impact Assessment (EIA) and design stages of all projects

ROD implements the mitigation hierarchy on all biodiversity assessments, in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM), Environmental Protection Agency (EPA) and TII guidelines. Refer to the Dodder Greenway project case study on page 14 for an example of a project where this approach has had a significant impact.



Source: <https://www.ecologybydesign.co.uk/ecology-resources/biodiversity-mitigation-hierarchy>

3.1.3 Promote and raise awareness of the benefits of ecological design and nature-based solutions (NbS) during the design, construction and operation phases

Review and update project data sheets to communicate how NbS have been applied and their respective benefits

The benefits of integrating NbS as part of the default design option on projects is consistently promoted to both clients and staff by our water team.

Consider and apply NbS into all designs, where appropriate

ROD recently funded a piece of academic research aimed at examining the key barriers to the adoption of NbS in the management of stormwater run-off in the Dublin region and the measures required to overcome them. This research was helpful to us when we were commissioned by a local authority client to review and evaluate its hydrogeomorphological assessment techniques. Our work culminated in the implementation of the preferred assessment methodology, which we tailored to the client’s specific requirements.

The adopted assessment methodology informed the delineation of floodplain boundaries, using morphological features to identify functional riparian zones. The end goal was to provide the basis for sustainable zoning policies that provide ‘room for the river’ and, over time, allow river systems to return to a state of equilibrium with rich biodiversity, developed ecosystem service provision and resilience to future shocks, such as climate change. This helps in meeting our objectives under the EU Water Framework and Floods Directives.

ROD subsequently provided staff within the local authority with guidance and training aimed at enabling its key stakeholders to interrogate and assess river restoration proposals. This is now mandatory for all new planning applications in the functional area of the local authority.

Deliver biodiversity and NbS lunchtime continuous professional development (CPD) presentations to demonstrate practical solutions implemented on projects and lessons learned

ROD will continue to avail of biodiversity and NbS CPD training opportunities while also delivering internal CPD presentations aimed at demonstrating practical solutions and lessons learned, using relevant project examples.

3.2 Case Study (A)

A6 Dungiven to-Drumahoe Dualling Scheme

ROD delivered the detailed design for 25.5km of dual carriageway between Dungiven and Drumahoe in Northern Ireland. We also provided a full-time designer's site team, who worked closely with the design offices and the construction team monitoring construction of the works.

Our technical outputs were subject to the rigorous approval procedures of:

- Transport Northern Ireland, the project manager;
- Structures Technical Approval (TAA) stakeholders;
- Department for Infrastructure– Rivers;
- Loughs Agency;
- geotechnical advisor; and
- the Ecological Clerk of Works (ECoW) supervising environmental mitigation and implementation.

The biodiversity constraints included:

- the River Faughan and tributaries SAC;
- River Roe and tributaries SAC;
- fisheries;
- habitats;
- badgers;
- otters;
- bats;
- birds; and
- invasive species.

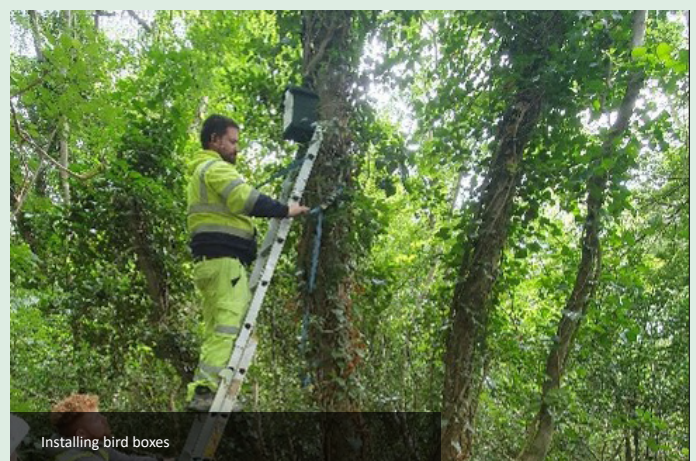
The on-site supervision of mitigation measures included badger exclusion, mammal proof fencing, mammal underpasses, bird and bat boxes, culverts with improved fish passage, native species planting, invasive species management, surface water pollution control measures (e.g., silt fencing), flood compensatory storage and attenuation ponds.



A6 Dungiven to-Drumahoe Dualling Scheme



Mammal proof fencing



Installing bird boxes

3.2 Case Study (B)

Waterford City Public Infrastructure Project: Flood Defences West project

The Waterford City Public Infrastructure Project: Flood Defence West project comprises c.1.1km of flood protection measures along the north bank and within the foreshore of the River Suir (part of the Lower River Suir SAC) in Waterford City.

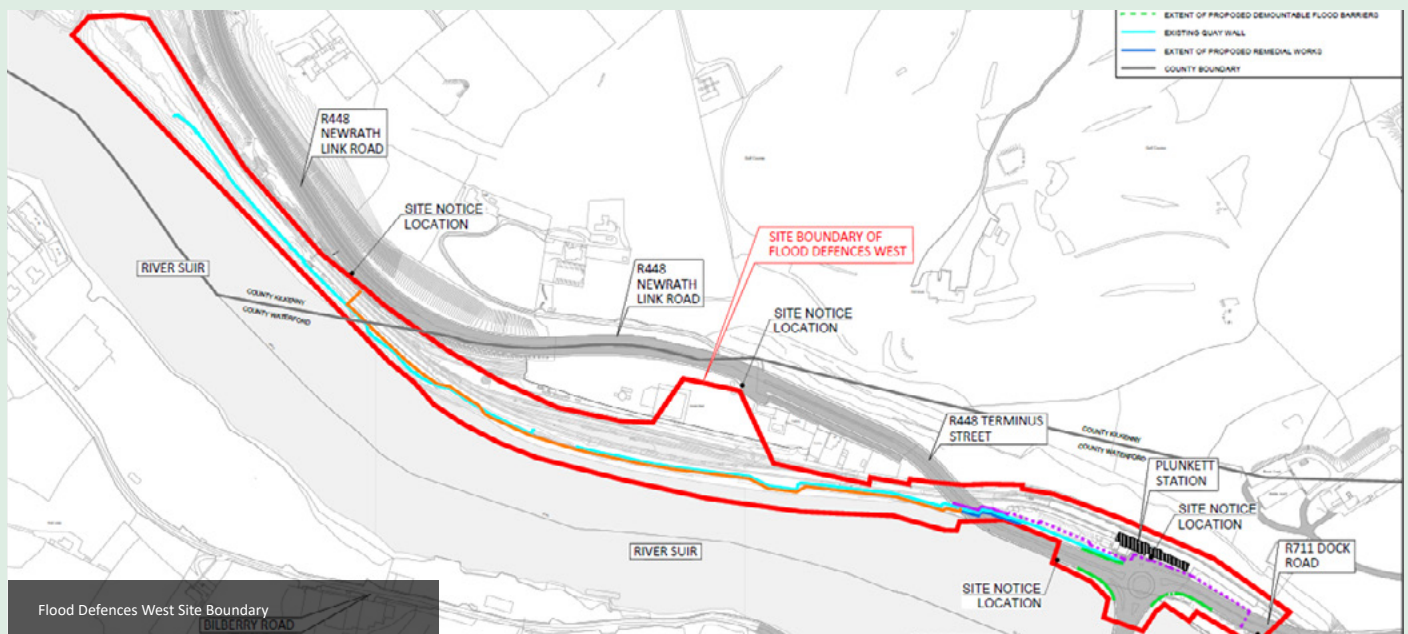
The project will protect critical infrastructure, including the existing Plunkett Station, the railway line east and west of Plunkett Station and the Rice Bridge roundabout.

Biodiversity constraints include:

- the Lower River Suir SAC;
- the River Barrow and River Nore SAC;
- Annex 1 Habitats, such as Intertidal Mudflats, Estuaries and Saltmarsh;

- migratory fish species, such as twaite shad and lamprey, Atlantic salmon and European eel;
- mammals such as otter, marine mammals (whales, dolphins, seals); and
- invasive species.

Mitigation measures were designed to include timing of works, eco-cladding, limits on piling activities, biosecurity planning and water pollution control measures.



3.2 Case Study (C)

Dodder Greenway

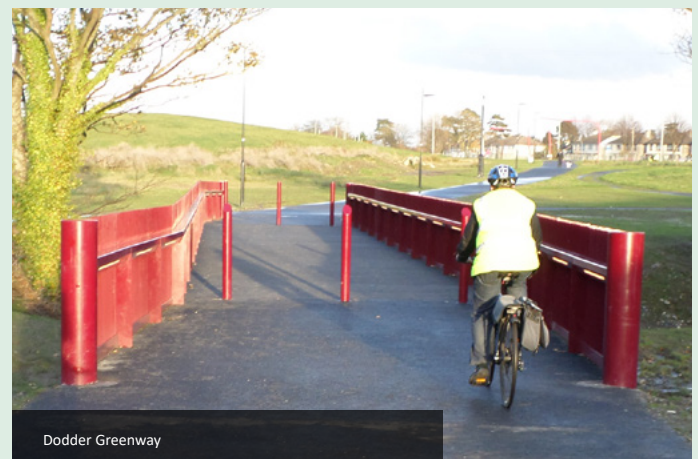
The Dodder Greenway runs alongside the River Dodder in South Dublin. ROD prepared the feasibility study, Environmental Impact Assessment (EIA) Screening, Appropriate Assessment (AA) Screening and an Ecological Impact Assessment for this project.

A construction Management Plan (CMP) providing steps for reducing potential environmental impacts arising from the construction of the greenway was produced.

An Invasive Species Management Plan to control and combat the further spread of invasive alien plant species threatening native plant diversity along the river was also produced.





Our ecologists have proposed several impact avoidance measures on the scheme, including limited construction depths for pavements and bat-friendly lighting. Enhancement measures aimed at improving green linear infrastructure along the route, including augmented native planting and the implementation of mowing regimes, have also been implemented.

Protecting the ecological integrity of the river corridor while developing a high-quality walking and cycling route provided the key challenge. Close cooperation between the client, project manager, ecologists and designers ensured that a significant amount of environmental survey data informed the design of the greenway.



4.0 Travel and transport



Goal	Relevant GRI Standards	Relevant UN SDGs
Design and promote cleaner, safer and sustainable mobility solutions.	GRI 302: Energy GRI 305: Emissions	   

4.1 Targets and actions

A summary of our progress towards achieving our sustainability goals in respect of travel and transport - together with the associated targets and actions- is outlined below.

4.1.1 Decarbonise transport and reach net zero by 2050

Design solutions that promote the use of safe, sustainable and active modes of transport

Over the past 12 months, ROD has progressed a significant number of public transport, pedestrian and cycle priority projects across Ireland. The key design factors common to each of these projects are sustainability and Universal access.

Integrate carbon sequestration and biodiversity impacts into our designs

The challenges posed by climate change and biodiversity loss are deeply interconnected and integrated solutions are needed. Our multidisciplinary teams, comprising scientists, planners, ecologists, hydrologists, hydrogeologists and engineers, work collaboratively to deliver holistic project outcomes that can help us achieve net zero carbon, build climate resilience, and address the biodiversity emergency.

Implement active traffic management strategies on Ireland’s motorway network

We continue to support Transport Infrastructure Ireland (TII) in its efforts to safeguard the safety, resilience and sustainability of the Irish motorway network while also providing it with the right tools, methods and data to inform future transport investment decisions.

Champion the use of new technologies to advance Ireland’s transport system in response to forecast population growth

We are supporting the deployment of new cooperative intelligent transport systems (C-ITS) technologies on Ireland’s road network and testing their potential to deliver safety, reliability, resilience and environmental benefits for road users, including reduced air and noise pollution, congestion, and energy consumption.

Continue using the TII Carbon Tool (RoI) and PAS (UK) to assess life-cycle carbon emissions for road, highway and light rail infrastructure projects

We have been using the TII Carbon Tool (RoI) and PAS (UK) for several years, from project initiation through to the final planning approval process/Environmental Impact Assessment Report (EIAR) phase. In using these tools, we ensure that both embodied and operational carbon emissions are fully considered when decisions are being made in relation to, for example, infrastructure design and preferred route options.

4.1.2 Reduce transport and company travel emissions

Employee commuting

We encourage our staff to choose the most sustainable mode of travel when commuting to and from work. We provide facilities for staff who cycle to work, including cover bike parking, as well as access to financial incentives, such as tax saver bikes, tax saver commuter tickets and the Cycle to Work Scheme. We also encourage our people to participate in smarter travel initiatives, including the National Transport Authority (NTA) Walktober Step Challenge and Ready, Set, Cycle Programme.

Conduct regular travel surveys

Every October, we undertake a company travel survey to better understand the travel patterns of our people and measure their travel-related carbon emissions. The data we gather informs potential mitigation strategies, including actions to promote walking, cycling, public transport, car sharing, the use of technology instead of travel, and flexible working practices.

Quantify emissions from business travel

In 2023, we began tracking our air travel miles with a view to offsetting the carbon emissions generated by our business flights. We also developed a company travel policy aimed at avoiding unnecessary trips and promoting the use of technology to support virtual internal and external meetings. The policy promotes the transport hierarchy, prioritising digital communication above all other travel modes, followed by active travel modes, such as walking and cycling, with air travel at the bottom of the pyramid.

Buy an electric vehicle (EV) for use as a company pool car

As part of our efforts to reduce our transport emissions, we bought an EV in January 2023 and installed two charging points in our head office car park. EVs emit less greenhouse gases and air pollutants over their lifetime than diesel or petrol vehicles.



ROD Electric fleet car on site

4.2 Case Study (A)

Clontarf to City Centre Cycle Scheme, Dublin

The aim of the scheme is to provide fully segregated cycle tracks alongside the bus lanes on the route from Talbot Street to Alfie Byrne Road while also upgrading the bus and bus stop facilities.

This involves the realignment and upgrade of 2.7km of existing urban carriageway to include:

- segregated cycle tracks;
- the realignment and upgrade of 9no. multi-lane signalised junctions including signalling infrastructure;
- the creation of new urban amenity spaces through the use of high-quality finishes such as natural stone paving (including antique paving and kerbs);
- soft landscaping (including a new shared cycling and pedestrian pathway in Fairview Park and;
- the provision of new street trees and associated tree pits).

As this is the first project to have been designed with the protected intersections required by Dublin City Council, it was presented at community consultative forums with local residents and interest groups and has been cited as an example to be followed elsewhere.



Artist's impression of the Clontarf to City Centre project in Dublin, showing the new design proposed for bus stops.



Clontarf to Dublin City Centre Cycle Scheme - Segregated Cycle Track



Clontarf to City Centre Cycle Scheme

4.2 Case Study (B)

DART+ West Railway Order

DART+ West is the first phase of the DART+ Programme, which aims to significantly increase capacity on all the rail corridors serving the Greater Dublin Area. It will also increase the current passenger capacity of 4,500 per hour to 13,200 per hour in 2025.

Roughan & O'Donovan is acting as a sub-consultant to IDOM on the project. Working together with IDOM and Iarnród Éireann's delivery team, we completed the option selection and design stages of the project. The Environmental Impact Assessment Report (EIAR), Appropriate Assessment (AA) and draft Railway Order documentation were also prepared for submission to An Bord Pleanála. Construction will commence in 2024 subject to receipt of the necessary planning and funding approvals.

By delivering an integrated, electrified, fast and reliable rail service, DART+ West will:

- enhance public transport opportunities for work, education and leisure purposes;
- facilitate the future growth and development of existing and new communities;
- alleviate road congestion;
- build a sustainable and connected city region;
- support the transition to a low carbon and climate resilient society;
- encourage a move away from private cars to a reliable, efficient and safe public transport network; and
- improve multimodal transport connectivity through interchange with the Luas at Broombridge and the proposed Spencer Dock Station and with the proposed Metrolink at Glasnevin/Phibsborough.



DART in Dublin



DART in Dublin



Commuters on the DART

4.2 Case Study (C)

BusConnects

BusConnects is the National Transport Authority's programme to greatly improve bus services in Irish cities. It is a key part of the Government's policy to improve public transport and address climate change in Dublin and other cities across Ireland.

In Dublin, the major infrastructure element of the NTA's BusConnects Programme comprises 12 Core Bus Corridor Schemes.

The scheme aims to provide over 200km of enhanced walking, cycling, and bus infrastructure on key access corridors in the Dublin region which will thereby enabling efficient, safe, and integrated sustainable transport movement along these corridors.

- Scheme 1: Ballymun to City Centre and Finglas to Phibsborough;
- Scheme 2: Kimmage to City Centre; and
- Scheme 3: Ringsend to City Centre.



4.2 Case Study (D)

enhancing Motorway Operation Services (eMOS) Programme

ROD is supporting Transport Infrastructure Ireland in implementing active traffic management strategies on Ireland's motorway network.

The eMOS programme is designed to protect the M50 by:

- safeguarding the safety, resilience and sustainability of the motorway network;
- reducing the adverse impact of future traffic growth on service levels on this key strategic link; and
- providing TII with the systems to deliver a more efficient, flexible and responsive service to road users.

ROD has developed software algorithms to optimise traffic flow, reduce delays, and prevent traffic jams, leading to a more efficient use of roads and better fuel consumption.

As part of the eMOS programme, ROD is supporting TII in the roll-out of connected vehicle technology on Ireland's roads. This technology offers many potential benefits to road users, including enabling drivers to identify EV charging points in the vicinity of their vehicles.

Furthermore, EV Charging Spot locations are integrated to the Connected Vehicle (C-ITS) Pilot programme providing participating users with distance countdown to the nearest charge point on the motorway.



ITS in operation on M50 in Dublin



The main control room in the motorway operations centre



An exterior view of the motorway operations centre building

Case Study (E)

West Clare Railway Greenway

This project involves developing a world-class, sustainable, fully accessible greenway along the former route of the West Clare single gauge Railway Line (circa 85km). It will provide an attractive cycling and walking facility for locals and tourists while enhancing the amenity and functionality of the route as an ecological corridor.

The corridor and associated study area has been broken into four separate sections:


- Section 1: Kilrush to Kilkee, via Moyasta (circa 20km of former rail corridor);
- Section 2: Ennis to Ennistymon (circa 65km of former rail corridor);
- Section 3: Ennistymon to Miltown Malbay; and
- Section 4: Miltown Malbay to Moyasta.

The scheme will improve air quality and carbon emissions, securing sustainable environmental improvements into the long term. In addition to the provision of the greenway, the project includes the design of the associated infrastructure, such as car parks, signage, and connections to adjacent towns/villages.



5.0 Water and Effluents



Goal	Relevant GRI Standards	Relevant UN SDGs
Protect and improve water quality and ensure projects are resilient to climate change	GRI 303: Water and effluents	

5.1 Targets and actions

A summary of our progress towards achieving our sustainability goals in respect of water and effluents - together with the associated targets and actions- is outlined below.

5.1.1 Promote sustainable water use, avoid pollution, and improve water quality and aquatic eco-systems

Integrate the requirements of the Water Framework Directive (WFD) on projects where we are involved in drainage design

ROD integrates the requirements of the WFD, where appropriate, on all projects, including the DART+ West and Liffey Tolka schemes where we integrated riparian restoration and wetland provision as part of the compensatory storage works. These measures, combined with the WFD assessment of the subject watercourses, will ensure the requirements of the WFD are satisfied.

ROD is currently working with the Department of Housing, Local Government and Heritage (DHLGH) on the Strategic Environmental Assessment (SEA) of the draft guidelines for the incorporation of the WFD into the planning system.

Continue to undertake hydrology and hydrogeology assessments (EIA) on projects and work with multidisciplinary teams to avoid, reduce and, if necessary, mitigate impacts

ROD completes a considerable number of Environmental Impact Assessment (EIA) projects every year highlighting and addressing any significant potential impacts relating to the water environment in constraints studies, option selection and Environmental Statements (EIAs).

Use Nature-based Solutions (NbS), including SuDS, as the default drainage design and/or flood management approach when designing infrastructure projects, public spaces, etc.

ROD understands the importance of nature-based solutions and broader natural resilience in managing societal challenges. We provide solutions to conserve and protect available water resources, as evidenced by our innovative drainage designs for buildings, roads and bridges that change how water flows are absorbed and thus reduce its exposure to contaminants. By collaborating with ecology professionals and product suppliers, we can promote a wider range of solutions, enhancing drainage and reducing the potential for flooding.



5.1.2 Avoid flood risk and design resilient infrastructure that takes account of the effects of climate change

Integrate Flood Risk Assessments (FRAs) into design considerations and continue to design climate-resilient infrastructure

ROD's water team provides expert services in relation to the identification and management of flood risk across the lifecycle of projects from options assessments, providing both strategic and site-specific flood risk assessments to support developments across the planning process.

The team support clients in managing the impacts of climate change, including designing climate resilient infrastructure and recommending the broad use of natural infrastructure solutions as opposed to engineered solutions for flood protection.

ROD considers resilience and adaptation planning a key attribute of a resilient society and one that requires forward planning and adaptation strategies in advance of climate threats. In completing the strategic flood risk assessment (SFRA) of the Draft NR2040, Transport Infrastructure Ireland's (TII) long-term strategy for the maintenance, development, and management of Ireland's National Roads, we set out mitigation strategies to ensure potential adverse outcomes are considered and assessed which is embedded in the decision-making process for future investment in national roads infrastructure.

In 2023, ROD completed INFRALINC, a novel research project for the Environmental Protection Agency (EPA). Our research examined the feasibility of undertaking a full-scale study to assess the risk posed to Critical Infrastructure (CI) in Ireland due to climate change. A cross-sectoral framework, including public and private sector stakeholders in water, transport, utilities, information and emergency, was proposed. This includes the effects of cascading hazards and infrastructure interdependencies, physical and social vulnerability.

5.1.3 Promote water conservation across the company activities

Continue to encourage staff to conserve water

The average person uses 140 litres of water every day. Water conservation saves energy. Energy is required to filter, heat and pump water to homes and offices, so reducing water use also reduces your carbon footprint. Conserving water also helps ecosystems, especially during periods of drought when there is a big demand on water supplies. Controlled drinking water dispensers have been provided throughout our three offices. We have also retrofitted taps with automatic cut off and, push-button to the common service areas.

Procure appliances with lower water demand when upgrades are required

In addition to promoting water conservation among our staff, we procure only 'A' energy-rated appliances for our three offices.



The team supports clients in managing the impacts of climate change, including designing climate resilient infrastructure and recommending the broad use of natural infrastructure solutions as opposed to engineered solutions for flood protection.

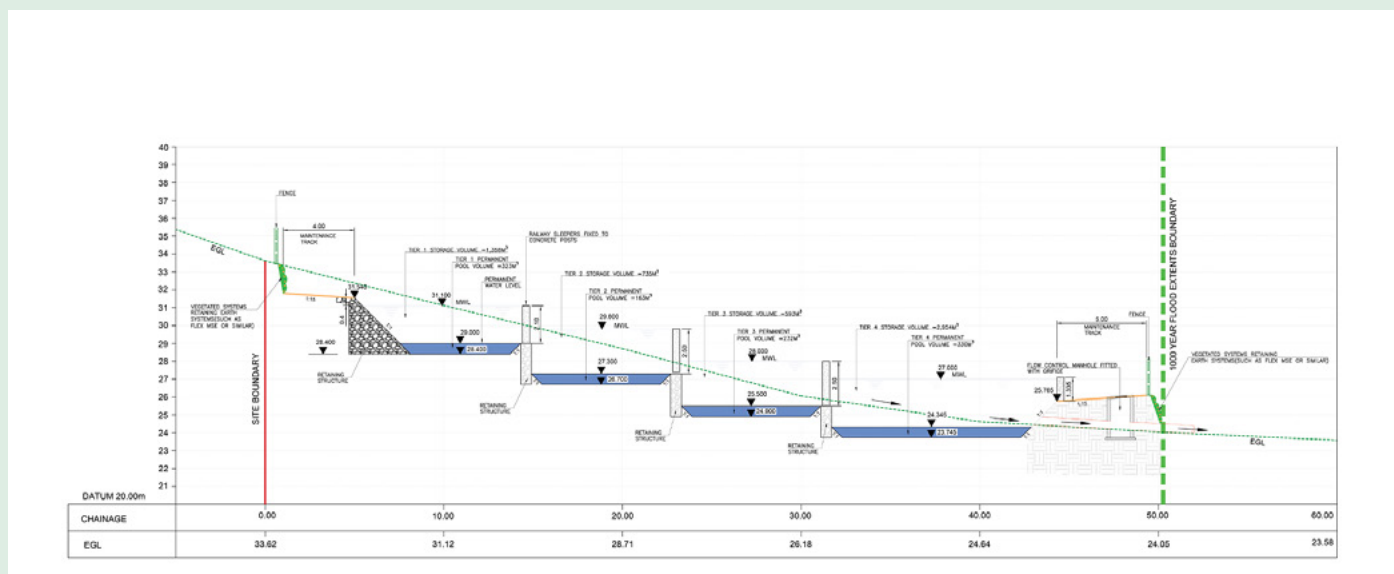


5.2 Case Study (A)

Regional Surface Water Attenuation Pond 2A, Cherrywood SDZ Project

Cherrywood Regional Attenuation Pond 2A is a piece of surface water infrastructure critical to facilitating the development of the Cherrywood strategic development zone (SDZ) in south County Dublin. In addition to undertaking the preliminary design, Part VIII planning and detailed design of the regional attenuation pond, the project includes associated inlet / outlet surface water infrastructure, access tracks and approximately 370km of greenway (preliminary design only).

The feasibility studies explored several configurations for the proposed regional attenuation pond in combination with underground attenuation tanks. Our team determined that a nature-based solution, incorporating a tiered cascading pond, with inlet and outlet vegetated swales, was the most appropriate solution given the steep, difficult topography of the site. This offered the advantage of keeping excavation to a minimum, reducing the impact on the existing landscape and ecology and negating the need for underground attenuation tanks. The pond is designed to attenuate to 1l/sec/ha in accordance with the Cherrywood SDZ planning scheme.



Detail showing a tiered cascading pond.



Typical floating aquatic wetlands



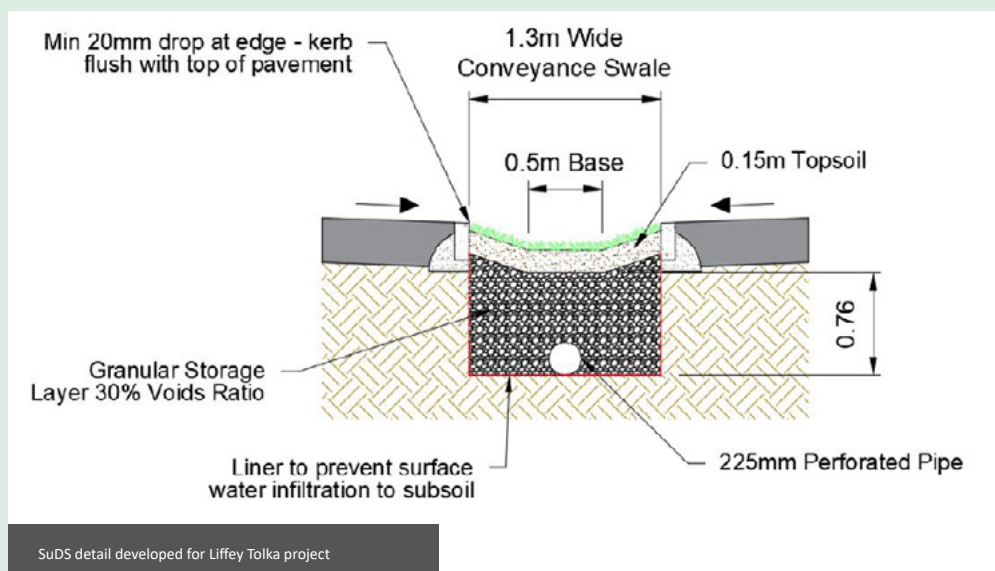
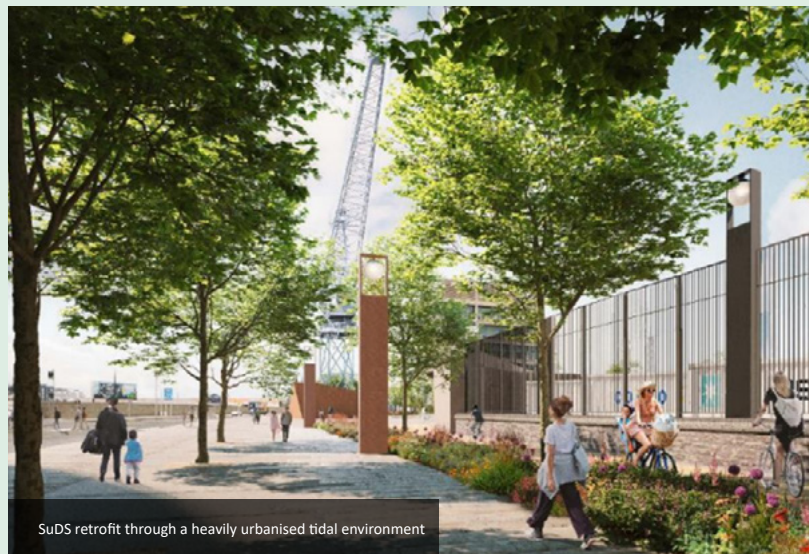
Typical vegetated retaining wall system

5.2 Case Study (B)

Liffey Tolka Project

This project involved c.1.4km of SuDS retrofit through a heavily urbanised, tidal environment. The scheme benefits include:

- Provision of additional capacity to the existing public drainage infrastructure by reducing the existing hard standing area within the drainage catchment;
- Provision of treatment to surface water runoff prior to discharge to the surface water drainage network;
- Ease of access for routine maintenance and removal of the need for petrol interceptors along the scheme;
- Better management of runoff volumes and flow rates from hard surfaces at source, reducing the risk of flooding on the downstream network;
- Enhancement of the aesthetics of the area and creation of habitats for wildlife through the retrofitting of SuDS measures; and
- Added sense of safety for end users by segregating pedestrians and cyclists from road vehicles through the provision of vegetated swales.



6.0 Materials and waste

Goal	Relevant GRI Standards	Relevant UN SDGs
Embed the principles of the circular economy into our systems and services	GRI 301: Materials GRI 306: Waste	

6.1 Targets and actions

A summary of our progress towards achieving our sustainability goals in respect of materials and waste- together with the associated targets and actions - is outlined below.

6.1.1 Reduce resource requirements on projects

Promote the use of recycled materials on projects, including, for example, recycled aggregates in concrete, road pavement, Ground Granulated Blast-furnace Slag (GGBS) etc.

We use GGBS as a substitute for cement on our projects at present. As part of our continuous professional development (CPD) efforts, however, we are researching other low-carbon cement alternatives, including recycled concrete aggregates (RCA). The R263 Fintra road scheme is an example of a project in which ROD has taken a proactive approach to reducing the volume of excavated rock entering the waste stream.

Promote awareness of our use of these recycled materials on projects

We use our website, social media channels and biannual company newsletter to raise client awareness of our use of recycled materials on projects. We also work hard to ensure our people understand the importance

of circularity in design. During Sustainability Month 2022, for example, John Gallagher, Assistant Professor in Environmental Systems Modelling, Trinity College Dublin (TCD), was invited to deliver a presentation on the topic to all our staff.

6.1.2 Design for circularity

Develop a concrete specification that incorporates recycled aggregates

This action has not been progressed to date

Develop a checklist of circular design measures that could reduce or prevent future waste/ material usage.

This action has not been progressed to date.



6.1.3 Influence downstream activities through contract documents

Integrate circularity principles on projects through construction environmental management plans and waste management plans, as appropriate

ROD is involved in environmental consultancy projects, including the production of Environmental Impact Assessment Reports (EIARs). Our environmental consultants work with clients to develop solutions that minimise the use of natural resources whilst considering the local setting. Our environmental team is highly experienced in the preparation of construction environmental management plans (CEMPs) and waste management policies (WMPs), adopted and developed by contractors at the construction stage of the project. This ensures commitments made through environmental statements (ES), environmental plans, policies or regulations and planning conditions are met. This is an ongoing activity.

Integrate circularity into construction activities through procurement-contract documents

Not progressed.

6.1.4 Continue our membership of and contribution to Europengineers

Continue to contribute to the Europengineers (SEED) database.

ROD is a member of Europengineers, a European network of independent engineering and consulting companies dedicated to best practice knowledge-sharing and collaboration. The network is currently chaired by ROD Chairman, Harry Meighan. ROD has been heavily involved in the development of the network's Sustainability Europengineers Database (SEED), a platform for sharing best practice in the application of circular economy principles on building projects.

6.1.5 Continue to reduce, reuse and recycle all waste streams in all offices

Our efforts to reduce, reuse and recycle our office waste streams have become more firmly embedded over the past 12 months, with proper waste management, staff engagement and collaboration with eco-conscious partners forming key components of our waste reduction strategy.

Waste management

In addition to clearly marking our bins to ensure proper waste disposal and recycling, we have erected new posters in our canteens to remind staff to separate their waste.

Staff engagement

We actively encourage our staff to get involved in our recycling efforts, emphasising that collective action can produce a tangible reduction in our overall waste output.

Collaboration

We seek out opportunities to collaborate with clients and partners who share our sustainability values. By sourcing materials and services from eco-conscious organisations, we are hoping to amplify the positive impact of our sustainable practices and further promote environmentally responsible behaviour across our business ecosystem.



We develop solutions that minimise the use of natural resources whilst considering the local setting



6.2 Case Study (A)

Europengineers

Europengineers is a European network of independent engineering and consulting companies dedicated to best practice knowledge-sharing and collaboration. Formed in Paris in 1963, and currently consisting of representation from France, Germany, Ireland (Roughan & O'Donovan), Italy, Spain, Greece, the Netherlands and Switzerland, the goal is to foster innovation, create customer value and grow the engineering sector by sharing information and working with each other.

Our engineering teams are encouraged to make their skills, experience and time available to those in society who are most in need, wherever they are in the world. We support social initiatives aimed at connecting isolated communities through better infrastructure, with employers facilitating staff wishing to carry out non-fee-paying work during regular work time. During the year, our CEOs come together at theme meetings to discuss topics ranging from the carbon agenda and the future of sustainability to efficiency in engineering processes and big data.



Group photo of site visit to Hamburg



Meeting of the Europengineers Group



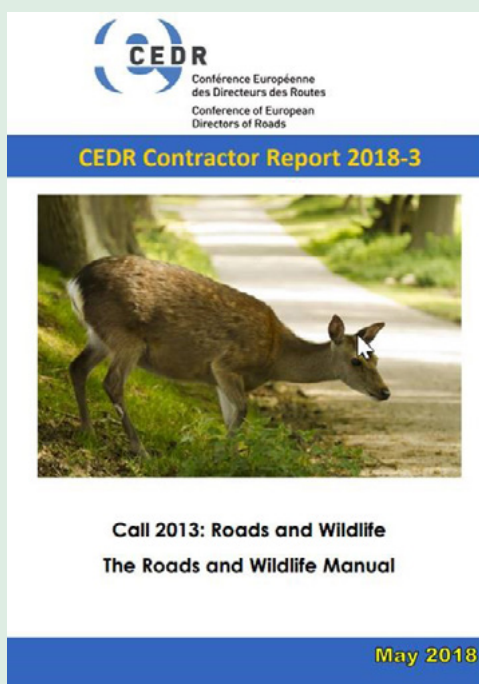
Europengineers site visit to Renzo Piano's Thomson factory in Guyancourt, Paris

6.2 Case Study (B)

Designing for Circularity / Recycled Materials

The circular economy is a term frequently used within the civil engineering industry. It refers to the continuity and circularity of resources instead of the linear mode of make (or take), use and dispose. ROD has been involved in the research and development of opportunities for circularity and in the practical application of the concept on construction projects. Project examples include Long Life Bridges (Horizon 2020), Harmony (CEDR) and EcoRoad (CEDR).

ROD has been applying the principles of circularity on large road schemes for many years as balancing earthworks quantities to minimize the need for imported fill very often determines the success of a project. The same principals are frequently applied to individual components within projects, by including for example, the relocation and reuse of the existing Scherzer lifting bridges on Dublin's North Wall and Custom House Quays as part of the BusConnects project. Road pavement arisings were recycled on the N3 Fingal Upgrade- Phase 2 project while concrete pavement was recycled on the N7 Naas Widening Project through rubbilisation before being reused on site.

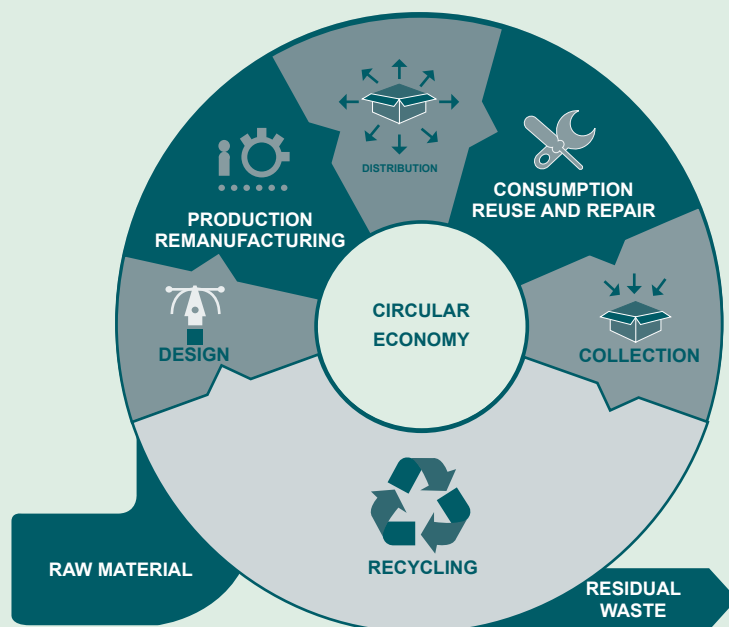
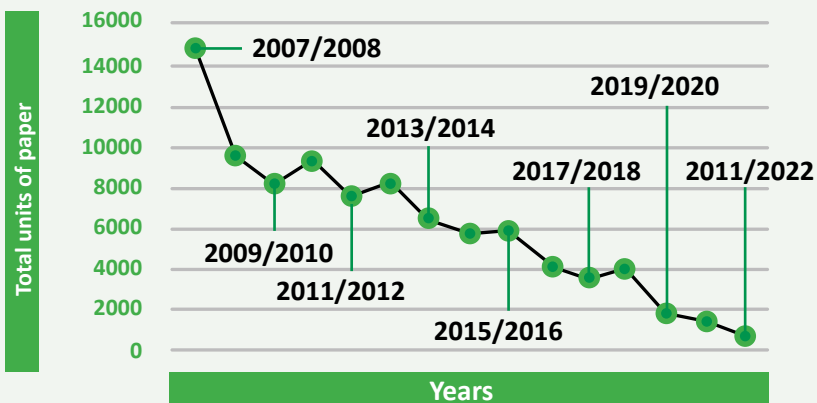


6.2 Case Study (C)

Reduce Company Waste

ROD separates waste streams into recycling, food waste for composting and general waste. We can influence downstream activities on our projects through our contract documents including, for example, Environmental Impact Assessment Reports (EIARs), Waste Chapters, Construction Environmental Management Plans (CEMPs) for construction sites and Environmental management Plans (EMPs).

Our transition to a paperless office continuing with a significant reduction in the quantity of waste materials produced since the implementation of our ISO 14001 Environmental Management System in 2007.



What FOOD WASTE CAN I recycle?

- Raw & cooked food
- Eggshells
- Fruit & veg
- Dairy Products
- Bread
- Coffee grounds and tea bags
- Kitchen roll/tissue
- Meat & fish

Food Waste for Compost Bin

What CANNOT BE PLACED in your food waste bin?

- No Plastic packaging
- No Glass packaging
- No Metal packaging

For more information, visit Ireland's Official Guide to Waste Management www.mywaste.ie

mywaste

Items not to be placed in food waste bin





WHAT GOES IN MY RECYCLE BIN?

- PAPER & CARDBOARD
- ALL PLASTIC PACKAGING
- TINS & CANS

mywaste

Items for recycling

7.0 Training and education

Goal	Relevant GRI Standards	Relevant UN SDGs
Support training and innovation by combining people, processes and technology	GRI 404: Training and education	   

7.1 Targets and actions

A summary of our progress towards achieving our sustainability goals in respect of training and education - together with the associated targets and actions - is outlined below.

7.1.1 Continue investing in our people as leaders in climate action and sustainability.

Identify sustainability champions

Sustainability champions have been identified across every team within our organisation. Their role is to actively promote our sustainability strategy by:

- highlighting and sharing best practice in sustainability as it applies to their sector of expertise; and,
- creating links with others who champion the principles and practices of sustainable development.

Support training, development and/or research initiatives aimed at reducing emissions, promoting climate resilience and adaptation

ROD is continuing to provide regular climate action and sustainability training to all staff. As part of Sustainability

Month 2022, for example, we delivered a series of lunchtime presentations on a variety of topics, including climate change, reducing emissions through the design process, the circular economy and sustainable concrete.

We are actively involved in several sustainability-related research initiatives at present, including:

- **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; and
- **TII309 - Lot 1**, a research project for TII that aims to establish methodologies for the sustainable management of earthworks as a means of rehabilitating peatlands and enhancing the biodiversity of peatland habitats.

Identify sustainability gaps through annual performance reviews and training reviews

We have incorporated sustainability and resilience in both our annual performance review and annual training review IMS forms. This is designed to help us identify staff in need of additional training supports to develop their required sustainability and climate action competencies.



Support and encourage further education in sustainability, including in embodied and operational carbon activities

As part of our Engineers Ireland CPD Accredited training programme, we provide opportunities for staff to attend training courses in sustainability and embodied and operational carbon. We encourage staff to share any new information/materials received as part of their training with their teams or, where relevant, across the wider company.

Support advances in design, software and technological innovation.

Our research team helps clients maximise the service life of their infrastructure assets by combining their cutting-edge science and analytics expertise with our experience in condition surveying, rehabilitation and maintenance planning. Areas of recent study include:

- wind and dynamic effects on structures;
- risk identification of critical infrastructure due to the effects of climate change; and
- peatlands rehabilitation studies.

Encourage think tanks and smaller counsels to address the challenges of carbon emission reduction

- A new 'energy' team has been established in ROD with the task of capitalising on the opportunities presented by the climate transition and the green economy;
- Our buildings team has set up a carbon management working group which includes identifying best practice for carbon management in the design of buildings; and
- Our bridges team has set up a carbon working group with the aim of reducing the carbon footprint of its projects.

7.1.2 Maintain and improve affiliations with professional bodies

Maintain our CPD Accreditation with Engineers Ireland (EI) and our approval to operate the Institution of Civil Engineers (ICE) training scheme

In 2022, ROD's status as an Engineers Ireland Continuing Professional Development (CPD) Accredited Employer was extended for the maximum re-accreditation period of three years. We continue to maintain our approval to operate the ICE training scheme.

Maintain links with professional institutions through memberships

ROD continues to maintain links with relevant professional institutions, including EI, ICE, the Association of Consulting Engineers of Ireland (ACEI), the International Association for Bridge and Structural Engineering (IABSE), the Institute of Environmental Management and Assessment (IEMA), the Chartered Institute of Ecology and Environmental Management (CIEEM), the Irish Planning Institute (IPI) and the Chartered Institution of Water and Environmental Management (CIWEM).

Over sixty of our Engineers and Technicians hold Engineers Ireland's Registered Professional Titles- Chartered Engineer, Associate Engineer, Engineering Technician and Fellow, while our staff are frequently invited to speak at professional conferences.

Recent presentations include:

- Civil Engineering Research in Ireland (CERI) and Irish Transportation Research Network (ITRN), Dublin, 2022. Delivered by Senior Engineer, Ilaria Bernardini, and Research Manager, Mark Tucker;
- National Flood Management Conference, Dublin, 2022. Delivered by ROD Associate, John Paul Rooney;
- EPA Water Conference, Galway, 2022. Delivered by ROD Associate, John Paul Rooney; and
- British Geotechnical Association, 2021. Delivered by ROD Associate, Paul Kissane.

Pathway to Chartership

ROD continues to operate a pathway to chartership programme that provides staff with a combination of project experience, formal training and mentoring support to help them build the technical experience and professional practice skills needed to achieve professional titles or memberships of relevant professional bodies.

Maintain our involvement in the Engineers Ireland's STEPS programme

ROD actively supports Engineers Ireland's STEPS programme, Ireland's only STEM outreach programme with a focus on engineering. Every year, we send our younger technicians, scientists and engineers into local primary schools to discuss the different routes into engineering, the projects we are involved in and the value of a career in STEM. Our team also supports Engineers Ireland's STEPS Young Engineers Award competition, which encourages 3rd and 4th class pupils and their teachers to explore the world of engineering by developing an engineering project to help improve their local community.



7.1.3 Share knowledge and build capacity across the company

Continue to hold in-house CPD sessions

ROD hosted 23 lunchtime CPD presentations during the period September 2022 to August 2023. 13 of the presentations were delivered by external speakers while the remaining 10 presentations were delivered by ROD staff.

Sustainability formed the focus of several presentations, including one titled “Engineering a Reduced Carbon World”, which examined how engineers can take action to reduce their carbon footprint through design and good decision making. The other presentations ranged from technical product presentations and new starter introductions through to project and research-related presentations.

Raise awareness of sustainability and climate action

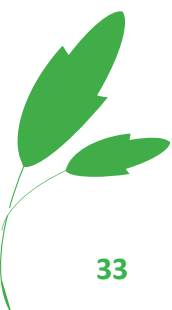
ROD celebrates ‘Sustainability Month’ every October. It is an opportunity for us to connect around the theme of sustainability and to examine how we, both as individuals and employees, can help safeguard the future of our planet for future generations. In addition to delivering presentations on carbon reduction, the circular economy, water, biodiversity, etc., we share eco-friendly hacks for a happier planet, hold sustainability quizzes and organise clothes recycling drives in aid of Enable Ireland, a non-profit, state-funded organisation that provides free support services to children and adults with disabilities and their families in Ireland.



We celebrate ‘Sustainability Month’ every October by sharing information and providing tips, tricks and quizzes to boost our team’s sustainability knowledge.



The screenshot shows a presentation slide with a dark blue background. In the top left corner is the ROD logo (a white square with a stylized 'R'). The main title is "Sustainability Month Launch in ROD" in white. Below the title, the date "3rd October 2023" and the names "Joe Kelly & Claire Cable" are listed. On the right side of the slide is a smaller image of a document titled "Sustainability Plan" by "Roughan & O'Donovan Consulting Engineers". The document cover features silhouettes of three people looking at a globe with various icons around it.



7.2 Case Study (A)

INFRALINC

This research project involved the design of a full-scale study to assess climate change risks posed to Critical Infrastructure (CI) in Ireland. It took account of interdependencies and cascading hazards, as well as considering sectoral risk metrics, data sharing and data security issues which tend to obstruct multi-modal risk assessment.

Key research activities included:

- data gathering, data availability and stakeholder requirements workshops;
- establishing the appropriate critical infrastructure monitoring and data collection regime, and the need to incorporate Structural Health Monitoring (SHM) technology; and
- developing a qualitative risk assessment framework.

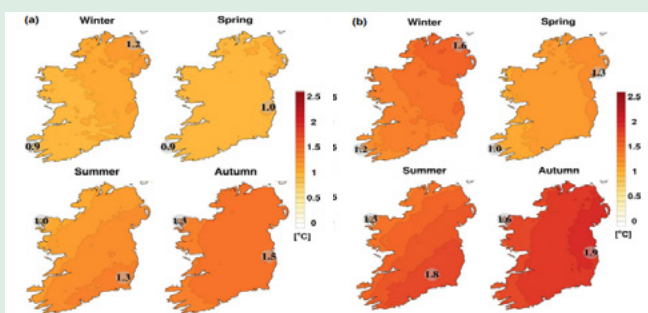


Fig 7.0 Climate Change Projection Scenarios (all one figure)

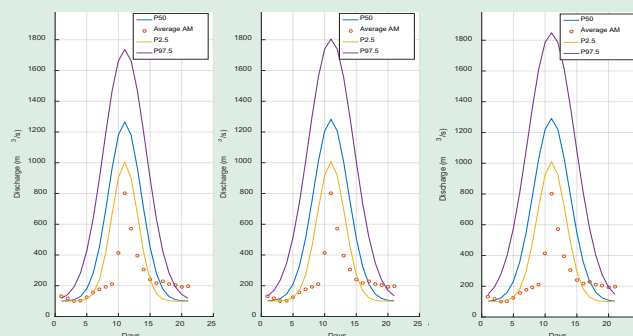


Fig 7.1 Methods to Predict Severe Weather Events

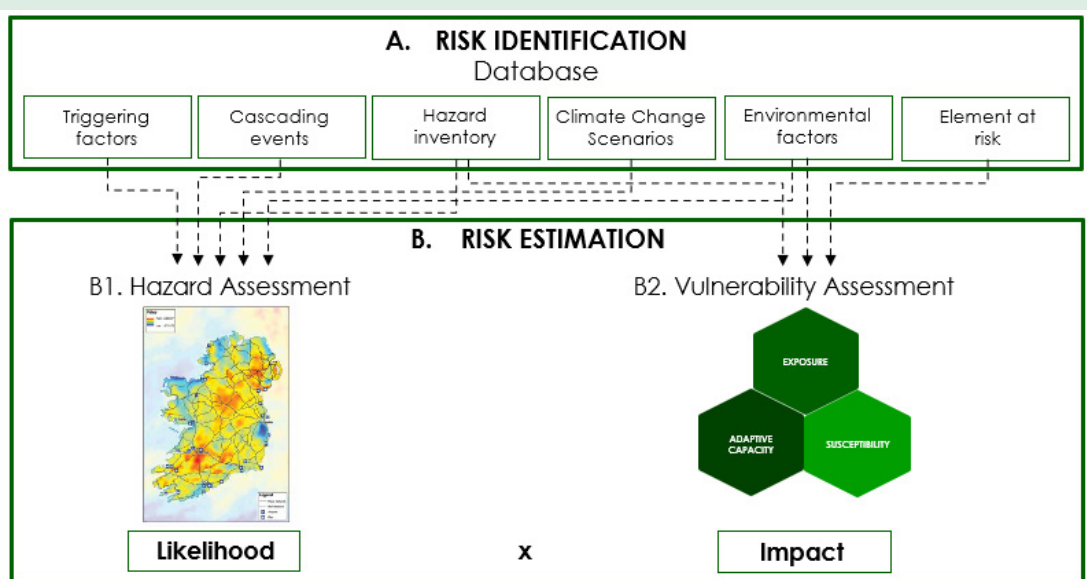


Fig 7.2 Risk Identification and Risk Estimation

7.2 Case Study (B)

Sustainability Month 2023

During Sustainability Month 2023, our Sustainability Committee coordinated a lunchtime presentation series aimed at improving the sustainability outcomes of our projects, our operations, and the systems we use to share knowledge across the company. Presentations delivered include:

- ROD's roadmap to net zero and the monitoring framework to measure our progress towards achieving our sustainability goals;
- Application of circular economy principles to the engineering design process;
- Hydrogeoethics, an emergent transdisciplinary field in geosciences and sustainable water resource management.
- Implementing sustainability practices on projects;
- How to calculate carbon on projects, using the (TII) Carbon Tool and the Institution of Structural Engineers (IStructE) Carbon Calculation tool;
- Our progress towards achieving the sustainability targets set out in our Sustainability Plan; and
- An update on our Integrated Management System (IMS) that take the environment and sustainability into account.

Throughout the month, our the team ran competitions, including a low-carbon recipe competition, a biodiversity wildflower quiz, and an upcycling/donation clothing drive. The team's hard work in developing an engaging, informative programme of activities with sustainability at the core was rewarded with well-attended presentations, strong participation and €1,000 raised for various charities, including Enable Ireland, FoodCloud, the Native Woodland Trust and the Woodland Trust UK.



Litter picking along Dublin's Royal Canal



Scrub management at Chevin Forest in Leeds.

Annex A - Sustainability Plan: Targets and Actions



Energy and Carbon

Targets	Actions to support implementation;	Status update 2023
Achieve net zero carbon emissions by 2050	Sign up to Pledge to Net Zero	✓
	Develop a Carbon Reduction Plan	🕒
	Develop a Net-Zero / Science Based Target (SBTi) for the company	🕒
	Use the following tools as part of the design and environmental assessments <ul style="list-style-type: none"> • TII Carbon Tool • PAS 2080 Guidance • IStructE Structural Carbon Tool • Concrete Centre Tool • One Click LCA 	✓
Share knowledge across the company and build capacity.	Develop an embodied carbon design checklist for projects	🕒
	Hold knowledge sharing workshops on how to reduce operational and embodied carbon on projects	✓
	Amend project plan and project review processes/IMS to explicitly address energy and carbon	✓
Increase energy efficiency and renewable energy in projects and business activities	Integrate energy efficiency into designs as appropriate	✓
	Reduce energy requirements of our offices to net zero by 2050	🕒
	Promote and support individual awareness and behavioural change	✓
	Avoid, reduce and, if necessary, mitigate the environmental and climate impacts of projects during the EIA and design stages on projects	✓

✓ Action Complete

✓ Action complete*
(*yearly action)

🕒 Progress made

✗ Not started



Travel and Transport

Targets	Actions to support implementation;	Status update 2023
Decarbonise transport and reach net zero by 2050	Design and promote cleaner, safer and sustainable mobility solutions	
	Integrate biodiversity gain and carbon sequestration into design where possible	
	Design to support positive behavioural change and future technological advances e.g., electric vehicles, autonomous vehicles, car sharing, ICT and ITS	
	Continue using the TII Carbon Tool and its UK equivalent, PAS, to assess lifecycle carbon emissions for road, highway and light rail infrastructure projects	
Reduce emissions from company transport and travel activities	Continue to promote the use of public transport, cycling and walking, carpooling, electric vehicles, and hybrid/remote working	
	Conduct regular travel surveys	
	Buy an electric vehicle (EV) for use as a company pool car	
	Quantify emissions from business travel	

Action Complete

Action complete*
(*yearly action)

Progress made

Not started



Biodiversity

Targets	Actions to support implementation;	Status update 2023
Deliver solutions that support a biodiversity rich environment.	Promote the implementation of No Net Loss (NNL) and / or biodiversity net gain (BNG- UK) for all major projects where ROD is engaged as environmental consultants	
Continue to use our integrated, multidisciplinary design approach to protect and enhance ecosystems services on projects.	Amend project plan and project review processes / IMS to integrate biodiversity into decision-making on projects	
	Avoid, reduce and, where necessary, mitigate impacts on biodiversity during the EIA and design stages of all projects	
Promote and raise awareness of the benefits of ecological design and nature based solutions (NbS) during the design, construction and operation phases	Review and update project data sheets to communicate how NbS have been applied and their respective benefits	
	Consider and apply nature-based solutions into all designs, where appropriate	
	Continue to attend and/or deliver biodiversity and NbS continuous professional development (CPD) training. Where possible, we will draw on project examples to demonstrate practical solutions and lessons learned	

Action Complete

Action complete*
(*yearly action)

Progress made

Not started



Water and effluents

Targets	Actions to support implementation;	Status update 2023
Promote sustainable water use, avoid pollution, and improve water quality and aquatic eco-systems	Integrate the requirements of the Water Framework Directive (WFD) on projects where we are involved in drainage design	✔
	Continue to undertake hydrology and hydrogeology assessments (EIA) on projects and work with multidisciplinary teams to avoid, reduce and, if necessary, mitigate impacts	✔
	Use Nature-based solutions (NbS), including SuDS, as the default drainage design and/or flood management approach when designing infrastructure projects and public spaces	✔
Reduce flood risk and design resilience infrastructure that takes account of the effects of climate change	Integrate Flood Risk Assessments (FRAs) into design considerations and continue to design climate resilient infrastructure	✔
Promote water conservation across our company activities	Continue to encourage staff to conserve use of water	✔
	Procure appliances with lower water demand when upgrades are required	✔

✔ Action Complete

✔ Action complete*
(*yearly action)

🕒 Progress made

✘ Not started



Materials and Waste

Targets	Actions to support implementation;	Status update 2023
Reduce resource requirements on projects	Promote the use of recycled materials on projects including for example., recycled aggregates in concrete, road pavement and Ground Granulated Blast-furnace Slag (GGBS)	
	Create awareness of our use of recycled materials on projects by sharing information in our company newsletter, website articles and on social media	
Design for circularity	Develop a concrete specification that incorporates recycled aggregates	
	Develop a checklist of circular design measures that could reduce or prevent future waste/ material usage	
Influence downstream activities through contract documents	Integrate circularity principles on projects through construction environmental management plans and waste management plans, as appropriate	
	Integrate circularity into construction activities through procurement-contract documents	
Maintain our membership of Europengineers and continue contributing to the network	Continue adding projects to the Europengineers database	
Reduce company waste	Continue to reduce, reuse and recycle all waste streams in all offices	

Action Complete

Action complete*
(*yearly action)

Progress made

Not started



Training and Education

Targets	Actions to support implementation;	Status update 2023
Continue investing in our people as leaders in climate action and sustainability.	Identify sustainability champions across all groups to learn, lead and link.	✓
	Support training, development and / or research initiatives aimed at reducing emissions, promoting climate resilience and adaptation	⌚
	Identify sustainability gaps through annual performance reviews and training reviews	⌚
	Support and encourage further education in sustainability, including in embodied and operational carbon activities.	⌚
	Support advances in design, software and technological innovation	⌚
	Encourage think tanks and smaller counsels to address challenges and potential future obstacles, for example, the carbon management group in buildings and the energy group	⌚
Maintain and improve affiliations with professional bodies	Maintain our CPD Accreditation with Engineers Ireland (EI) and our approval to operate the Institution of Civil Engineers (ICE) training scheme	⌚
	Maintain links with professional institutions through memberships	⌚
	Pathway to Chartership	⌚
	Maintain our involvement in the Engineers Ireland's STEPS programme	⌚
Share knowledge and build capacity across the company	Continue to hold in-house CPD sessions	⌚
	Raise awareness of sustainability and climate action	⌚

✓ Action Complete

⌚ Action complete*
(*yearly action)

🕒 Progress made

✗ Not started



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