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Foreword

Olaf Sorensen, Chairman & Owner

I founded Sorensen Civil Engineering Ltd in 1977 after serving my time as a graduate Civil Engineer with a well known Limerick based Civil Engineering Contractor. During my 40 years running this company, we have survived two economic recessions and experienced the infamous Celtic Tiger era. I attribute our survival and success to the calibre of people involved and their commitment to the business. I have been fortunate to have worked with some of the industry's brightest and most innovative people throughout my time in this business who have assisted me in steering Sorensen Civil Engineering Ltd to where it is today.

One of my proudest achievements to date is our health and safety record of having no major accidents or incidents in over 40 years of trading. This single statistic is a reflection of our commitment to health and safety across all of our projects. I believe that a lot of our repeat and referral business can be attributed to our health and safety performance on our past projects. I am confident that with the calibre of our current crop of people and our robust health and safety procedures in place that we will do everything in our power to safeguard this vital statistic into the future.

I also hold dear our ability to work with all of our clients amicably in relation to the commercial aspects of our projects. Throughout my time in this business, we have never failed to come to an amicable agreement on a final account with any of our clients.

Looking forward, I am very excited about the future of the company, especially with regard to the opportunities associated with the Country's new Utility Company - Irish Water. I have been an advocate of a single water & wastewater utility company for many years and I believe that the creation of Irish Water will be equally beneficial to both the tax payer and the construction industry as a whole.

Olaf Sorensen



Aerial view of marine works at
Ardmore Bay on our WGTVSS
project in Co. Waterford



Aerial view of our Ballincollig WWTP Project in Co. Cork

Introduction

Sorensen Civil Engineering Ltd is an Irish based, multi-disciplined, civil engineering and construction company that was established in 1977 and has grown and developed over the years to become one of Ireland's leaders in civil and construction sectors. As a family-run, mid-sized progressive construction company, we offer all of our clients a cost-effective, flexible, professional and personal service from an efficient, tightly-run organisation.

Our services include:

- Traditional Contracting
- Design & Build
- Design Build & Operate
- Project Management
- PSCS Services
- Design Solutions

Sorensen Civil Engineering Ltd provides technical assistance through all stages of the project management process from Concept, Planning, Design, and Budgeting through to Construction and Hand-Over Process. Going forward, we are fully committed to working with our clients and their professional teams to achieve optimal construction solutions and to deliver best value to the highest possible standards in safety, environment and quality.

The company has a proven track record of successfully delivering civil engineering and construction projects which has resulted from practical experience coupled with technically adept and motivated staff. This approach results in the same high degree of expertise, quality, safety and commitment across all of our projects. We pride ourselves on our track record of frequently providing innovative and progressive value engineering solutions to complex engineering challenges across a variety of projects for all of our clients.

Central to our operation is a commitment to the core values of Safety, Quality and Environment. Our Integrated Quality Management System has achieved accreditation by the National Standards Association of Ireland to IS EN.ISO Quality 9001:2008, IS EN.ISO Environment 14001:2004 and OHSAS 18001:2007 Safety. Additionally, our Safety Management System is accredited by IOSH to Safe-T-Cert standards. We are also members of the Construction Industry Federation (CIF) and the Construction Industry Register Ireland (CIRI).

Project works for Alstom on their Industrial Facility in Aghada, Co. Cork



Youghal Landfill Lining Works



Civil Projects

Sorensen Civil Engineering Limited has delivered a wide variety of projects administered under a range of contract types including FIDIC Rainbow Suite, NEC3 ECC, Public Works Contracts and Bespoke Contracts. We are experienced at delivering projects for our public sector clients as well as clients from the private sector. We have a particular focus on value engineering and innovation throughout all of our projects, we feel this results in added value for money for all of our clients.

Sorensen Civil Engineering Ltd has an extensive portfolio of completed projects across a number disciplines within the construction industry.

80 Tonne excavator in operation on a spud leg barge constructing a new effluent outfall in Co. Waterford



N22 Gortalee to Farranfore Road Scheme



- Water & Wastewater Treatment Plants
- Drainage & Pipelines
- Marine
- Roads
- Landfill
- Urban Renewal
- Industrial & Pharmaceutical
- Tunneling
- Site Development
- Utilities
- Bridge Building



Completed works at the Alza Pharmaceutical facility in Cashel



North Cobh Tunnel

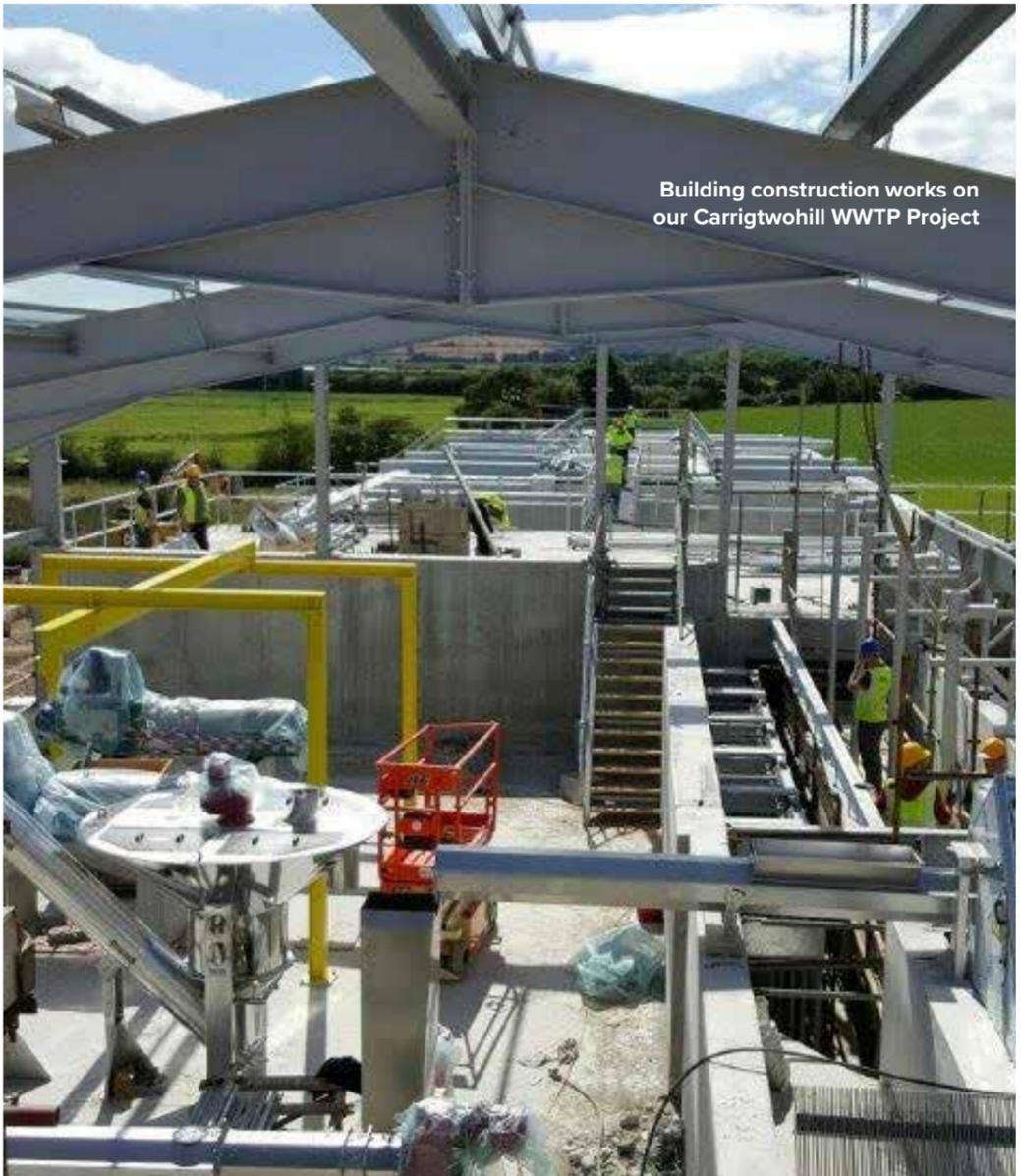
Projects



Waterville WWTP



Beam Lift on the N22 Gortatlee to Farranfore Road



Building construction works on our Carrigwohill WWTP Project



N22 Gortalee to Farranfore Road Scheme



Watersedge, Midleton



Supervalu, Cobh



Little Island

Building Projects



Kinsale Garda Station



Leixlip Garda Station, Co Laois



Aldi, Midleton



Cope, Springford, Cork



Cope, Glasheen, Cork



Cope, Glasheen, Cork



Aerial view of complete Carrigtwohill Wastewater Treatment Plant



Aerial view of RC works progressing on the Carrigtwohill Wastewater Treatment Plant



Carrigtwohill WWTP

Carrigtwohill Waste Water Treatment Plant Project

Sorensen Civil Engineering Ltd delivered this prestigious Wastewater Treatment Plant (WWTP) DBO project for Irish Water on time, on budget and with no Lost Time Accidents or Incidents. We teamed up with our mechanical and electrical specialist partner, EPS to form Sorensen / EPS Joint Venture on this €12m Design, Build & Operate project.

On completion, this plant was one of only two plants in both Ireland and the UK to utilise the innovative NEREDA biological treatment system. The NEREDA process has made this plant a key learning center for both Irish and international clients and will provide the capacity for further development in one of Cork's fastest growing satellite towns.

Commenting on the project, Minister David Stanton said: *"The increase in wastewater treatment capacity will allow for continued, future growth in population and economic activity, as well as in towns such as Castlemartyr, Cloyne, and Killeagh."*

This construction project was a significant undertaking consisting of a WWTP that provides for a 30,000 Population Equivalent (PE) loading with future allowances of up to 60,000PE, provision for storm holding tanks in excess of 1,500m³ was also provided, water retaining RC structures with an overall volume of 11,000m³, a steel frame clad structure of approx. 1,200m² to house the inlet and dewatering works and construction of three satellite pumping stations.

Our project team worked on delivering an innovative solution to the many geotechnical challenges associated with the WWTP site. Following geotechnical site investigations and detailed analysis, the site team decided to adopt a surcharge solution to the soft ground in lieu of the proposed piled foundation solution. This Value Engineering Solution proved a great success on the project resulting in significant savings for our client Irish Water and Cork County Council.

Another challenge facing our Project Delivery Team was the construction of the marine effluent outfall from the WWTP to Slattery Waters in Carrigtwohill. The challenges included soft ground conditions, the tidal range, the site is a Special Area of Conservation (SAC). Our solution was to deploy a Swamp Master excavator. This 14tonne excavator had a specially adapted undercarriage and pontoon like tracks that aided in the machines buoyancy. It was specifically designed to operate in muddy, silty, soft tidal sites like the Slattery Waters in Carrigtwohill. The outfall works were successfully completed safely, on time and on budget.

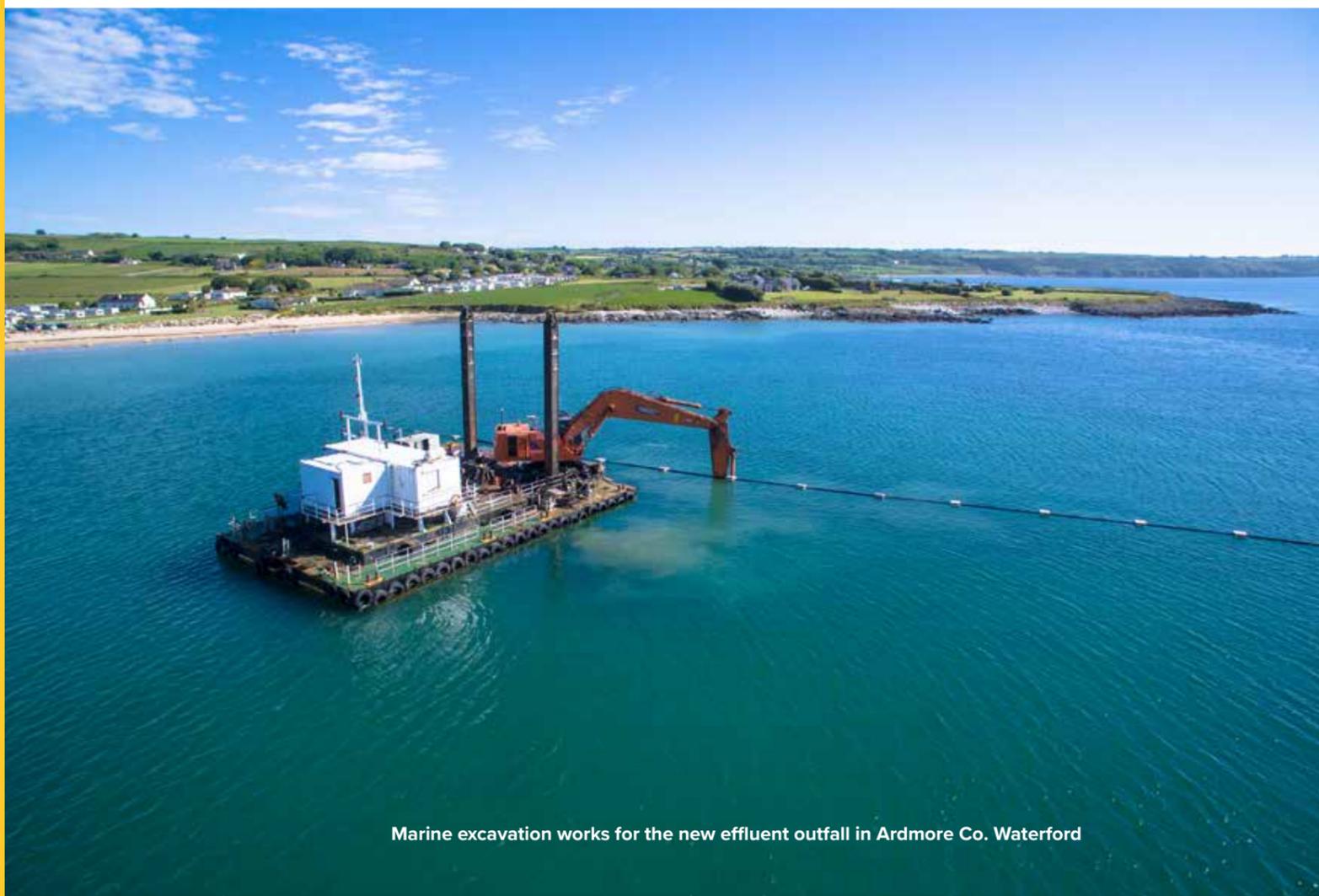
PROJECT FEATURES

- Plant Capacity of 30,000 Population Equivalent
- In excess of 35,000m³ of earthworks
- Over 11,000m³ of RC water retaining RC structures with 10m high RC walls.
- 1,200m² Inlet & De-watering Building
- 140m² administration building complete with laboratory and conference facilities
- 2no. outlying pump stations and storm holding tanks
- 12,000m³ of marine dredging
- Installation of the 1.5km long marine effluent outfall
- Construction works through a Special Area of Conservation (SAC)
- Site development works including drainage, ducting, roads, fencing, footpaths, landscaping etc.





Aerial view of progress on the new WWTP at Dunmore East, Co. Waterford



Marine excavation works for the new effluent outfall in Ardmore Co. Waterford

WGTVSS

Waterford Grouped Towns & Villages Sewerage Scheme – Wastewater Treatment Plant DBO Project

This €18.5m project, delivered by the EPS / Sorensen Joint Venture involved the design, build, operate (DBO) of seven wastewater treatment plants for Irish Water and Waterford County Council. The contract provided for the design, construction and operation of a full turnkey mechanical, electrical, instrumentation, control, automation, civil and building solution. The project provided a huge boost to the local economy in Co. Waterford both during the construction phase and through the 20 year operation phase. We successfully delivered this project ahead of programme, on budget and to the highest standards in safety, environment & quality.

This construction project involved design and construction of seven Waste Water Treatment Plants with a combined capacity of 23,000 Population Equivalent (PE) for the villages of Ardmore, Kilmeaden, Cappoquin, Dunmore East, Stradbally, Kilmacthomas and Tallow in Co. Waterford.

There were two satellite cast in-situ reinforced concrete pumping stations constructed in environmentally sensitive & flood prone areas (SAC's).

There were a number of challenges from a construction perspective that the project team faced, the most prominent element of which was the design and construction of the three marine effluent outfalls. Each of these outfalls posed their own difficulties. However, the most complex outfall was at Dunmore East which required the construction of a large diameter pumped outfall pipe located at an existing 18m high rock cliff face into the sea at Dunmore East. The innovative solution provided by Sorensen Civil Engineering Ltd was to construct this pipeline using 'Trenchless Technology'. We deployed a specialist Directional Drilling machine capable of drilling a large diameter hole to house the 315mm diameter outfall pipe from the WWTP at the top of the cliff out to the diffuser location 300m into the sea. The ground conditions consisted of hard limestone which allowed the team to bore the hole and push the pipe into position from the treatment plant. The drill was a great success and was a key factor in delivering the project ahead of time for Irish Water and Waterford County Council.



PROJECT FEATURES

- Civil & Building Construction for 7no. WWTP's with a total 23,000PE
- Construction of 13,460m³ of cast In-situ reinforced concrete tanks
- 6,000m³ bulk excavation
- 7no. New Administration Buildings
- 7no. Cast In-situ reinforced concrete Pumping Stations
- 4,100m of Rising Mains with diameters ranging from 100mm to 400mm
- 3no. Marine Outfalls & 4no. River Outfalls
- A large cofferdam to construct one pumping station in soft ground
- Site development works including drainage, ducting, roads, fencing, footpaths, landscaping etc.
- Construction works through a Special Area of Conservation (SAC)





N70 Kilderry Bends

Milltown to Killorglin, Co Kerry

The N70 Kilderry Bends Improvement Scheme comprised of the design and construction of a realigned section of roadway approximately 4.0 km in length between Milltown and Killorglin in Co. Kerry on behalf of our client Transport Infrastructure Ireland (TII) and Kerry County Council.

This new road was a safety initiative by TII and Kerry County Council to bypass the existing Kilderry Bends. The new route was located on a greenfield site, to the south east of the existing N70 route and the road works were constructed predominantly off-line. The chosen road type was a Type 2 Single Carriageway with a climbing lane facility for northbound traffic.

The N70 Kilderry Bends Improvement Scheme provided improved geometric alignment, a positive drainage system and standardised access along this section of the N70 National Secondary Route. The scheme also included a pedestrian walkway adjacent to the new road and a new 4 -leg roundabout at the Knockavota Junction. Following the completion of the new road, improvements were carried out to the old N70 route including resurfacing, road markings and signage amendments.

The project was delivered ahead of programme, safely, within budget and to the highest standards in quality.

PROJECT FEATURES

- 18.62HA Site clearance
- 125,000 m³ Excavation
- 130,000 m² Geotextiles
- 72,398m³ Rock Breaking
- 119,494 m² Topsoiling
- 42,071 m² Pavement Works
- 8,775m Fencing and Environmental Noise Barriers
- 530m Pedestrian and Vehicle Restraint Systems
- 9,381m of Drainage
- 13,500 Services Ducts
- Attenuation Ponds
- Kerbs, Footways and Paved Areas
- Traffic Signs and Road markings
- Road Lighting Columns and Brackets
- Treatment of Japanese Knotweed





PROJECT FEATURES

- Realignment of existing road and construction of roundabout, resurfacing of the entire scheme including tie-ins to all interconnecting roads and streets
- 6,356m³ Excavation
- 825m³ Rock Breaking
- 4,796 m³ Imported Material
- 1,368m of Drainage
- 7,633 m² Pavement Works
- 1,120m New footpaths
- 823m of Natural Stone Wall & Decorative Railing
- Deflection island build-outs.
- Construction of 5 No. uncontrolled Pedestrian Crossings.
- A proposed new storm sewer.
- New road markings and traffic signs and relocation of existing services
- Traffic Management throughout the works
- Hard & Soft Landscaping Works

Road Improvement Scheme

The Ridge, Maryborough Hill, Cork

This road improvement scheme entailed the realignment of the existing Maryborough Hill Road and the construction of a new 4-leg roundabout to provide safe access to the new Maryborough Ridge Housing Development.

The upgrade works also included the provision of right turn lanes serving both the Maryborough Ridge Estate and the Broadale Residential Estate, footpaths, off-road bus stops and an on-road cycle lane.

A significant element of the works was the construction of a new natural-stone faced retaining wall with railing adjacent to the new section of road and roundabout. This wall formed the new road boundary to the west. The works also included both hard and soft landscaping adjacent to the road. Five uncontrolled pedestrian crossings at various locations along the scheme were constructed.

All associated road markings, service diversion works, traffic management works, community liaison, bollard retention socket installation, new gullies, tactile paving and footpath build-outs were constructed as part of the scheme.





IDA Site Enabling Works

Barnahely, Ringaskiddy, Co Cork

Sorensen Civil Engineering Ltd was contracted by IDA Ireland to deliver this major site development project in 2018. The project was situated on a 25 acre site in Ringaskiddy, Co. Cork. IDA Ireland committed to handover the site to their client complete with surface water drainage, permanent access arrangements from the existing road network and perimeter security fencing in Spring of 2019. The project was successfully delivered safely, on time, within budget and to the highest standards in quality.

Project Features: We self-performed every element of the project using Sorensen's own plant fleet along with our experienced plant operators. At peak production, during the bulk earthworks operations, our highly skilled and capable site team were placing 9,500m³ of site won material per day. We processed all of the crushed stone requirements for the project on the site with our own crushing plant. The main elements of plant deployed to the project consisted of:

- 2no. 60 Ton Excavators
- 2no. 30 Ton Excavators
- 6no. A40 Volvo Dump Trucks (40 Ton)
- 2no. A25 Volvo Dump Trucks (25 Ton)
- 2no. D65 Komatsu Dozers (65 Ton)
- 2no. Vibromax 15 Ton Rollers
- 3no. Rockbreakers (4-6 Ton)
- McCloskey J50 Primary Jaw Crusher
- Terex Pegson Cone Crusher
- Atlas Copco Screener

There were challenging environmental constraints on site that required a lot of consideration and planning:

Surface Water Management: Following the removal of the vegetation and topsoil from the site, special consideration was given to surface water run-off. Provisions were made for desilting of all surface water captured on the site, a permanent boundary surface water system was constructed and monitoring points were installed and maintained on all of the watercourses adjacent to the site.

Noise Management: During the works the effect on local residents and businesses was considered. An environmental noise bund was constructed along the west boundary to protect the adjacent business from potential noise disruption during the project.

Dust Management: Dust suppression was carried out by spraying the earthworks with water using 5,000 litre vacuum tanks throughout the earthworks operations.



PROJECT FEATURES

- Topsoil Stripping
27,000 m³
- Bulk Excavation
156,000 m³
- Rock Breaking
72,000 m³
- Rock Processing
72,000 m³
- Embankment Fill
84,000 m³
- Drainage Pipelines
2,235 m
- Engineering Platform
72,000 m²
- Processed Class 6F2
80,000 Tonnes
- Processed Clause 804
21,600 Tonnes
- Processed Class 505
9,300 Tonnes



Health & Safety

At Sorensen Civil Engineering Limited, our board has signed a written commitment to our staff, subcontractors, customers and the public to placing their health and safety at the top of our priority list across all of our projects. Subsequently, we have invested extensively in training for all our employees in a wide range of safety based courses.

We are accredited to OHSAS 18001 certification for our Health and Safety Management System. The structures and processes associated with attaining this accreditation is a core part of our business and we are committed to maintaining this accreditation in the future.

We are also accredited to Safe-T-Cert Standard Accreditation and have a proud record of achieving an A-rating on every IOSH annual Health & Safety Audit for Safe-T-Cert Standard Accreditation since 2008.



Quality

Sorensen Civil Engineering Ltd operates an integrated management system incorporating Quality, Environment and Health & Safety accredited by National Standards Association Ireland to ISO 9001, ISO 14001, OHSAS 18001. We continue to meet international standards in our work in the civil engineering and construction industry. Our integrated management system is the driving force behind our approach to continuously improve within our industry.

Sorensen is also accredited to the Achilles UVDB Accreditation Body which is a recognised accreditation standard for preferred suppliers across the UK and Ireland.



Environment

At Sorensen Civil Engineering Ltd, our Environmental Policy is to undertake a responsible and proactive approach to environmental and waste management at every level across all of our projects and operations. Our Environmental Management System is certified to ISO 14001:2015.

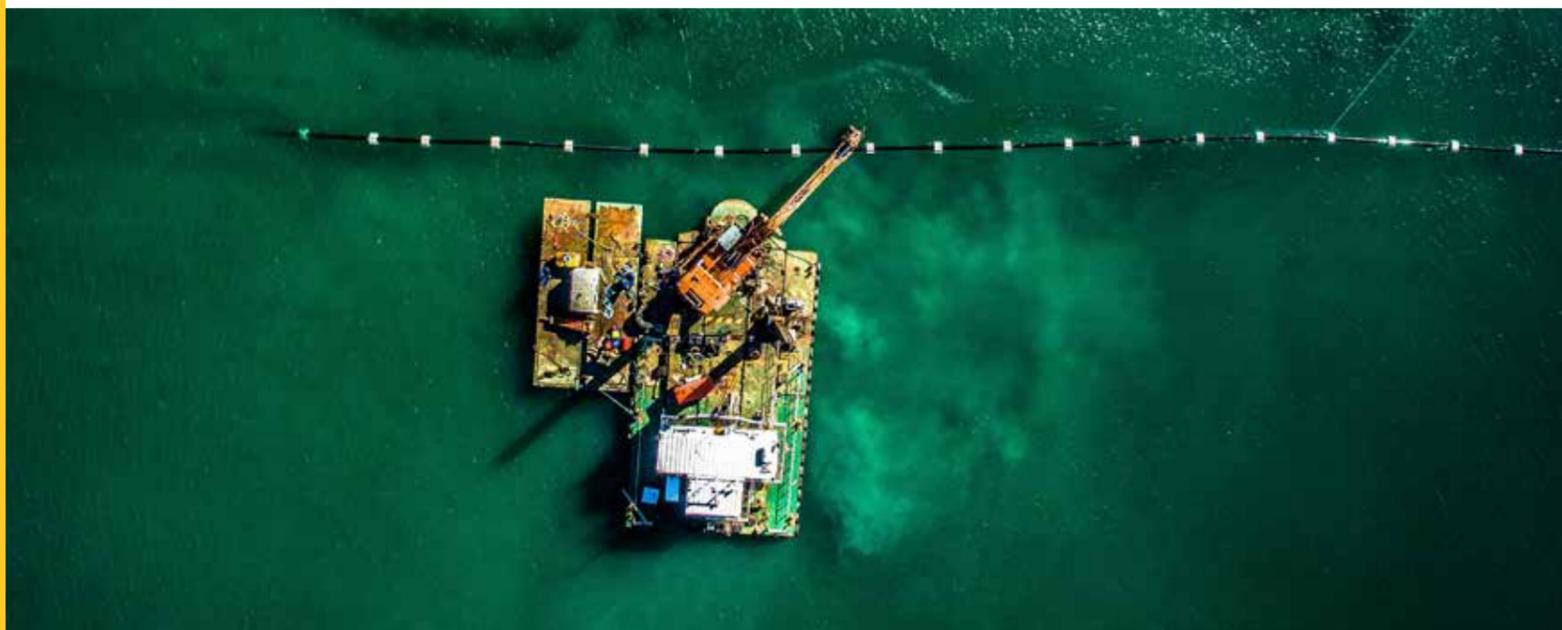
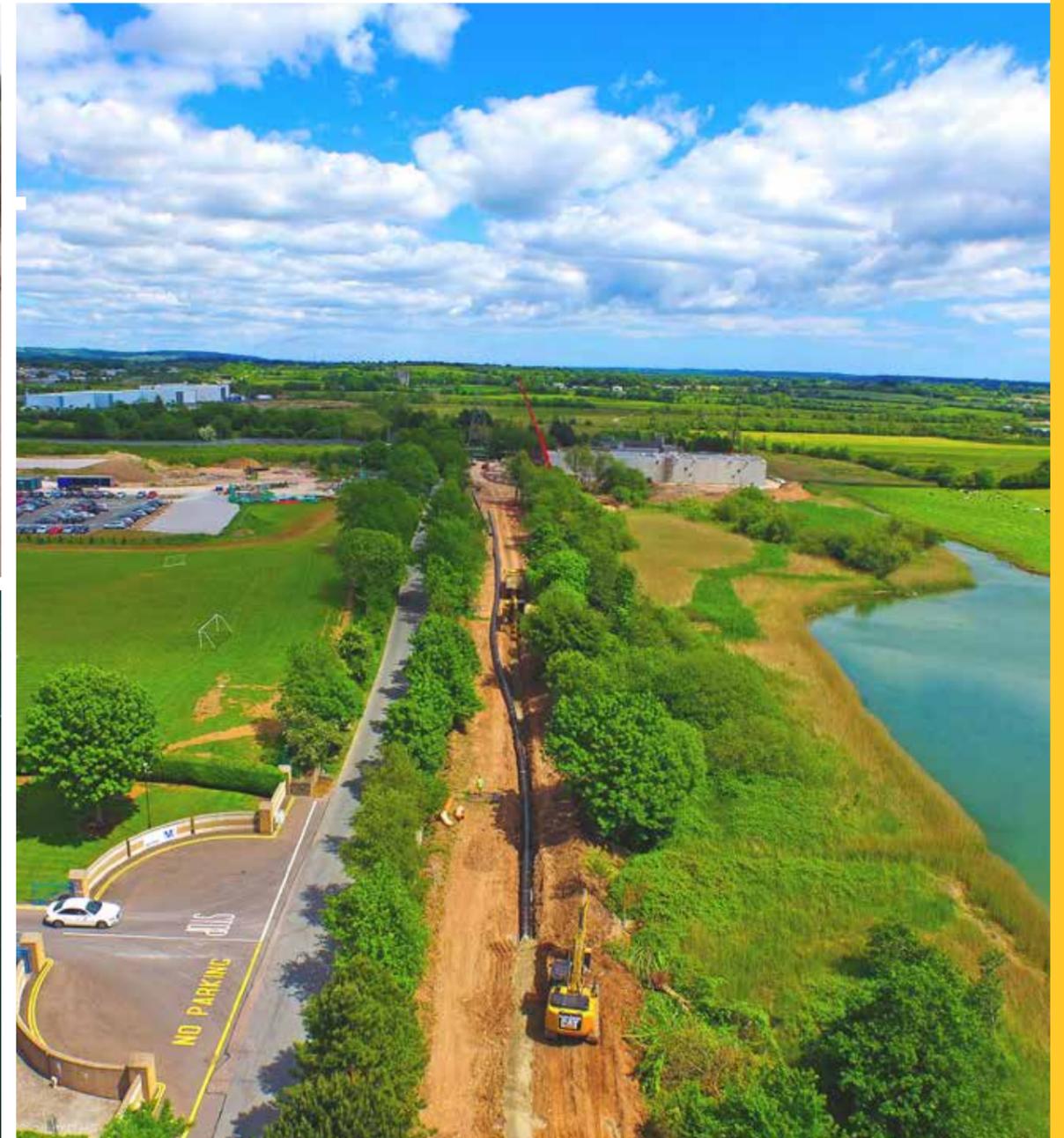




Resources

We own a wide variety of civil engineering plant and equipment including excavators, dumpers, road trucks, compaction plant, generators, pumps, trenchers, piling equipment, compressors and small plant & equipment, all of which are maintained by two full-time trained plant fitters. We have a large plant maintenance yard in Cork that services all of our projects. We are committed to ongoing investment in our plant fleet to facilitate further growth in our company and to satisfy the construction industry's demands.

We pride ourselves in possessing a proven and experienced supply chain including suppliers and subcontractors that can mobilise and deliver construction projects with Sorensen Civil Engineering Ltd throughout the country as and when required. Our supply chain is fully committed to our approach to safety, quality and environment management.



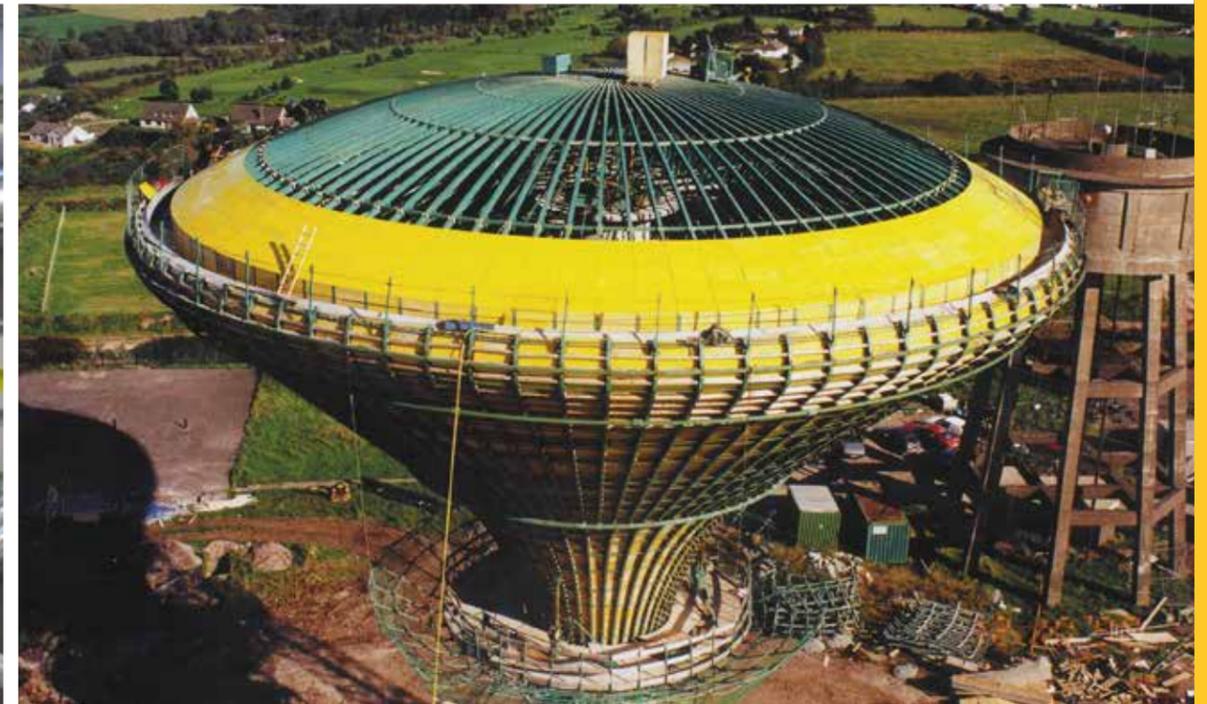


Customer Care

Customer Care is at the core of our business. We offer our customers the highest level of quality services at fair and competitive prices. We have ensured the longevity of our company through repeat and referral business achieved by customer satisfaction in all areas including on-time delivery, value for money, attention to detail and a collaborative approach to projects. We aim to maintain the highest levels of professionalism, integrity, honesty and fairness in our relationships with our suppliers, subcontractors, professional associates and customers alike.

At the heart of our customer care approach is our acute awareness of the impact our projects may have on the wider communities. Our trained and experienced project delivery teams engage with local communities and their representatives on all of our projects to ensure that they are fully informed throughout all stages of the project.

We are proud to have worked with a vast array of clients who are industry leaders in their respective fields. Through our collaboration with such clients over the years we are able to draw on a vast amount of knowledge and experience in all areas of project delivery from conception to hand-over.



Our Team

Sorensen Civil Engineering Ltd prides itself on retaining a solid base of loyal and experienced people consisting of professional staff members and site based operators. Our head office is located in Cork and provides continual support to all of our projects nationwide. We ensure that all of our employees receive continual professional development and current industry based training in safety, quality, environment, commercial and general industry best practices.

Key Personnel

Olaf Sorensen Chairman & Owner

Olaf is Member of Engineers Ireland, the founder of Sorensen Civil Engineering Ltd and Chairman of our board. He has 40 years' experience in this civil engineering industry and is very well respected by his peers in the construction business.

John Wallace Managing Director

John is a Fellow member of Engineers Ireland with 20 years' experience in the Construction & Civil Engineering industry. He has managed a variety of large scale infrastructural projects throughout Ireland, Poland, New Caledonia and the UK.

David Sorensen Associate Director

David is part of the company for over 35 years and he manages the day to day operations of our plant fleet as well as our labour force and foremen.

He oversees all of the projects and specialises in heavy civil engineering and marine works.

Cian Bineid Associate Director

Cian is a long term member of the Sorensen team, joining us over 20 years ago following his graduation as a Quantity Surveyor. He is now a Chartered Surveyor and manages all of our site based project Quantity Surveyors and our Procurement Department.

Denis Mannix Financial Controller

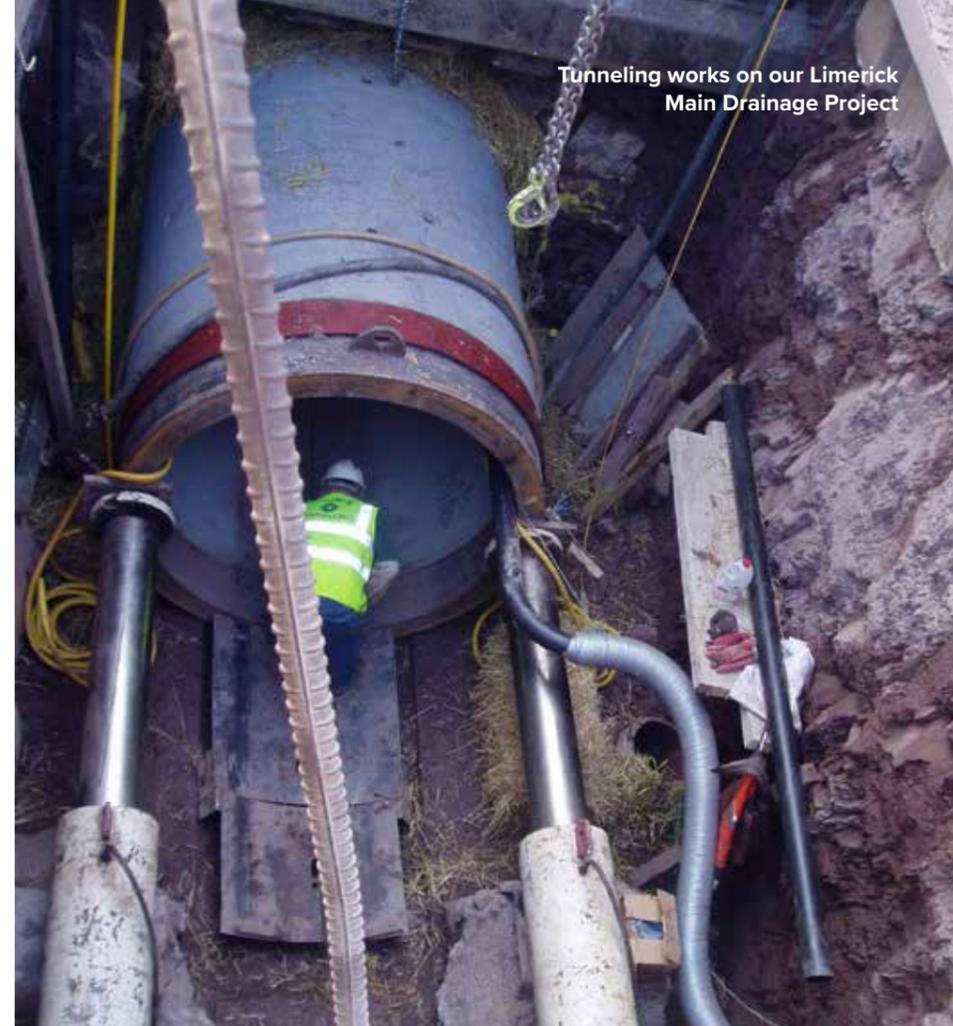
Denis is a practice-trained Chartered Accountant and is a member of the Association of Chartered Certified Accountants (ACCA). Prior to joining the Sorensen team as Financial Controller, Denis was the Finance Manager of the Asset Management Division of a large renewable energy company based in Cork and also has experience of working within the Funds industry.

Aoife Murphy Bid Coordinator

Aoife holds a BA and HDip in Corporate Finance and is an integral part of the commercial Team at Sorensen Civil Engineering Ltd. She manages the Bid Department within the company and has extensive experience in preparing prequalification documents and Tender submissions in the Construction Industry.

Niamh Crowley SHEQ Manager

Niamh is a qualified Health & Safety, Environmental and Quality professional who has experience in working on a range of civil engineering projects. She manages our Integrated Quality Management System at our head offices.



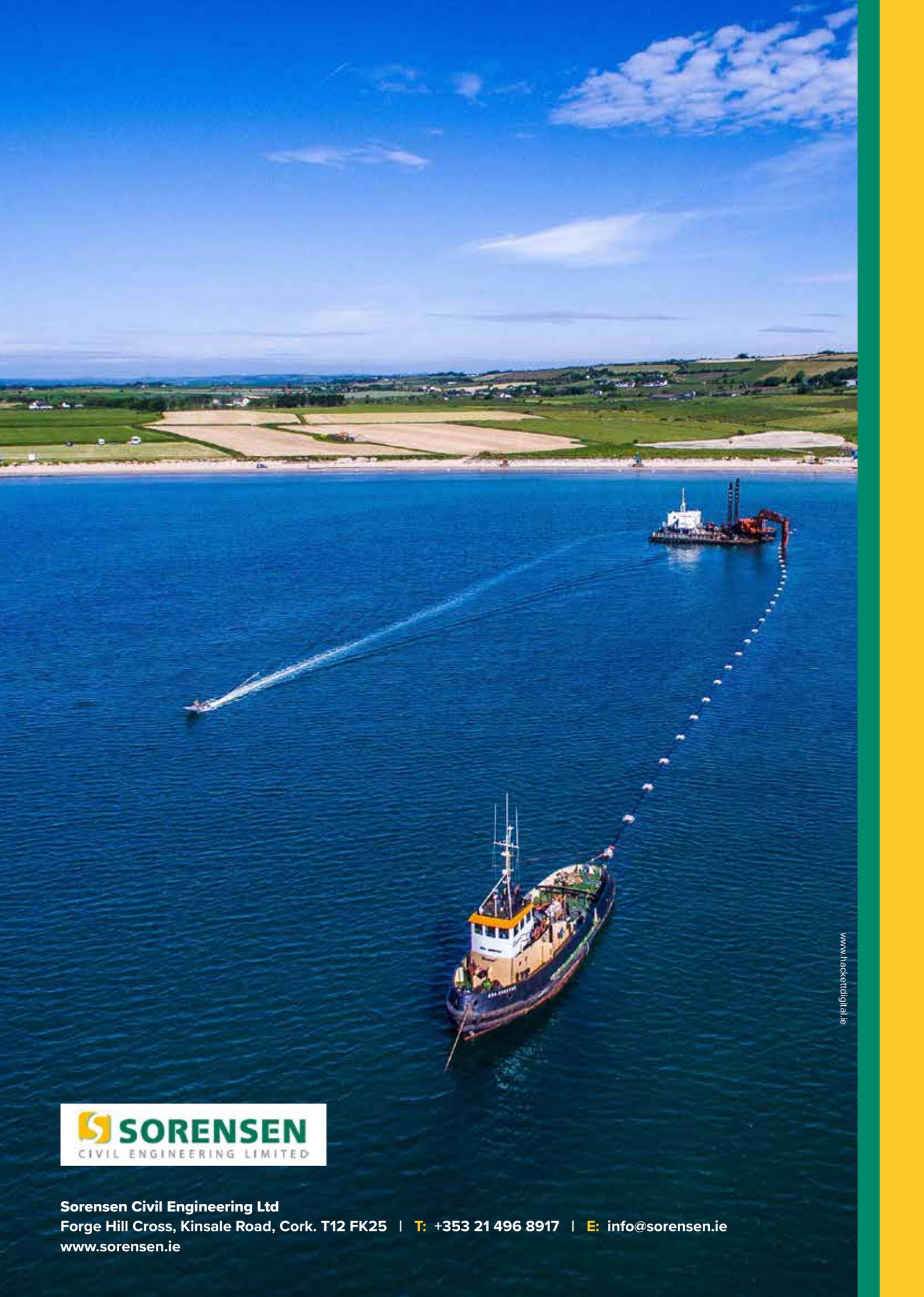
Tunneling works on our Limerick Main Drainage Project



Ongoing building works on our Carrigtohill WWTP project



The completion of our Ballincollig Wastewater Treatment Plant Project



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