



SOLETANCHE FREYSSINET

Essentials.

2024



A force for good in a changing world

The women and men at Soletanche Freyssinet put passion into their work every day to improve the daily lives of thousands of people around the world. Because each city and region is different, each project has unique challenges. The plethora of expertise available across Soletanche Bachy, Menard, Terre Armée, Freyssinet, Nuvia and Sixense ranks Soletanche Freyssinet among the prominent and trusted players building the world we live in and the world to come.

#makingyourdayeasier
#fostergrowth
#accesspower
#careforall
#greenisgreat

Management team
04

Editorial
05

Operations worldwide
06

2023 figures
08

Our brands
09

Soletanche Bachy
10

Menard
12

Terre Armée
14

Freyssinet
16

Nuvia
18

Sixense
20

**The principles
guiding our action**

Working together
22

Innovation built into our DNA
24

Solidarity in action
in Rwanda
26



In Peru, ConeTec teams took part in a major leaching extraction project (see page 13).

Management team.

At 1 March 2024

Manuel Peltier
Chairman,
Soletanche Freyssinet

Christophe Dauchy
Chief Executive Officer,
Soletanche Bachy

Bernard Théron
Managing Director,
Soletanche Bachy

Marc Lacazedieu
Chief Executive Officer,
Menard

Vincent Oudin
Chief Executive Officer,
Terre Armée

Jean-Philippe Ricard
Chief Executive Officer,
Freyssinet

Bruno Lancia
Chief Executive Officer,
Nuvia

Pascal Berger
Chief Executive Officer,
Sixense

Mark Deary
Chief Administrative
and Financial Officer,
Soletanche Freyssinet

Xavier Planchon
Human Resources Director,
Soletanche Freyssinet

Guillaume Billaroch
Marketing and
Communications Director,
Soletanche Freyssinet

Lorenzo Alessi
Quality, Safety and
Environment Director,
Soletanche Freyssinet

Édouard Siret
Information Systems Director,
Soletanche Freyssinet



Editorial

of **Manuel Peltier**
Chairman,
Soletanche Freyssinet

Soletanche Freyssinet grew its business again in 2023. Its revenue, which it generated in close to 100 countries, rose 8% to €4.7 billion. Order intake at **Soletanche Bachy** (50% of revenue) exceeded €2 billion for the first time. Business volume remained high at **Menard** (14% of revenue), which reinforced its operation in the United States with several acquisitions there. **Terre Armée** (6% of revenue) enjoyed strong demand for its legacy specialist services and continued to diversify, for instance by taking over Synthetex in the United States. **Freyssinet** (20% of revenue) posted record volume. **Nuvia** (7% of revenue) had a stable year, and its business in France and the United Kingdom remains solid. **Sixense** (3% of revenue) saw vigorous growth worldwide, buoyed by its structure-assessment and infrastructure-monitoring services.

Innovation, the environment, safety and engagement were at the top of our mind on all our projects in 2023.

Innovation is our hallmark. The 30 remarkable in-house initiatives that our 2023 Innovation Awards panel short-listed shine a light on our teams' creativity and encourage us to press ahead on our constant quest for ever more efficient and effective solutions.

The environment is a central concern. We are moving forward on our roadmap to decarbonise our operations and create more environmental value for our customers. We took several significant steps forward in 2023 – most notably

«Innovation is our hallmark.»

using low-carbon concrete extensively – and will continue to head in this direction.

Safety is our absolute priority. We are aware of the risks inherent in our work and are doing everything within our reach to protect our employees from them. Our safety culture is gaining ground and we are pushing ahead with our efforts – especially as regards providing training and analysing potentially serious accidents.

Lastly, our teams' **engagement and passion** are the cornerstone of our success. Soletanche Freyssinet's women and men are working enthusiastically and purposefully the world

over. And their involvement in the Bridges to Prosperity and Project Rescue Ocean initiatives, for example, mirror the solidarity and support that we stand for.

2023 was a year of success and progress for Soletanche Freyssinet. Worldwide demand for our specialist expertise remains strong, so we will continue to thrive in 2024. We look forward to our future accomplishments and are excited about tackling the next stages in this adventure together while remaining true to our values and commitments.



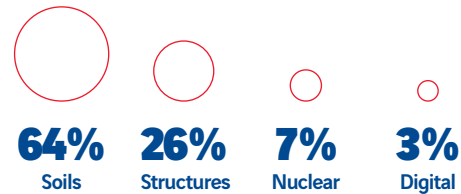
**Our 2023
accomplishments
on our YouTube
channel**

Operations worldwide

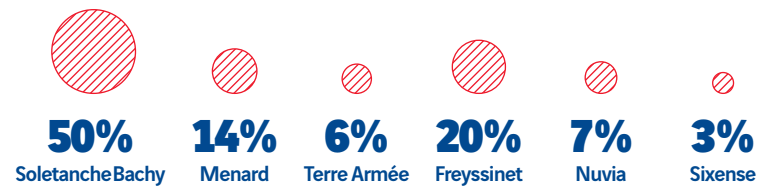
A global presence

Soletanche Freyssinet's network encompassing 150-plus subsidiaries in more than 90 countries provides Soletanche Bachy, Menard, Terre Armée, Freyssinet, Nuvia and Sixense with a solid global reach.

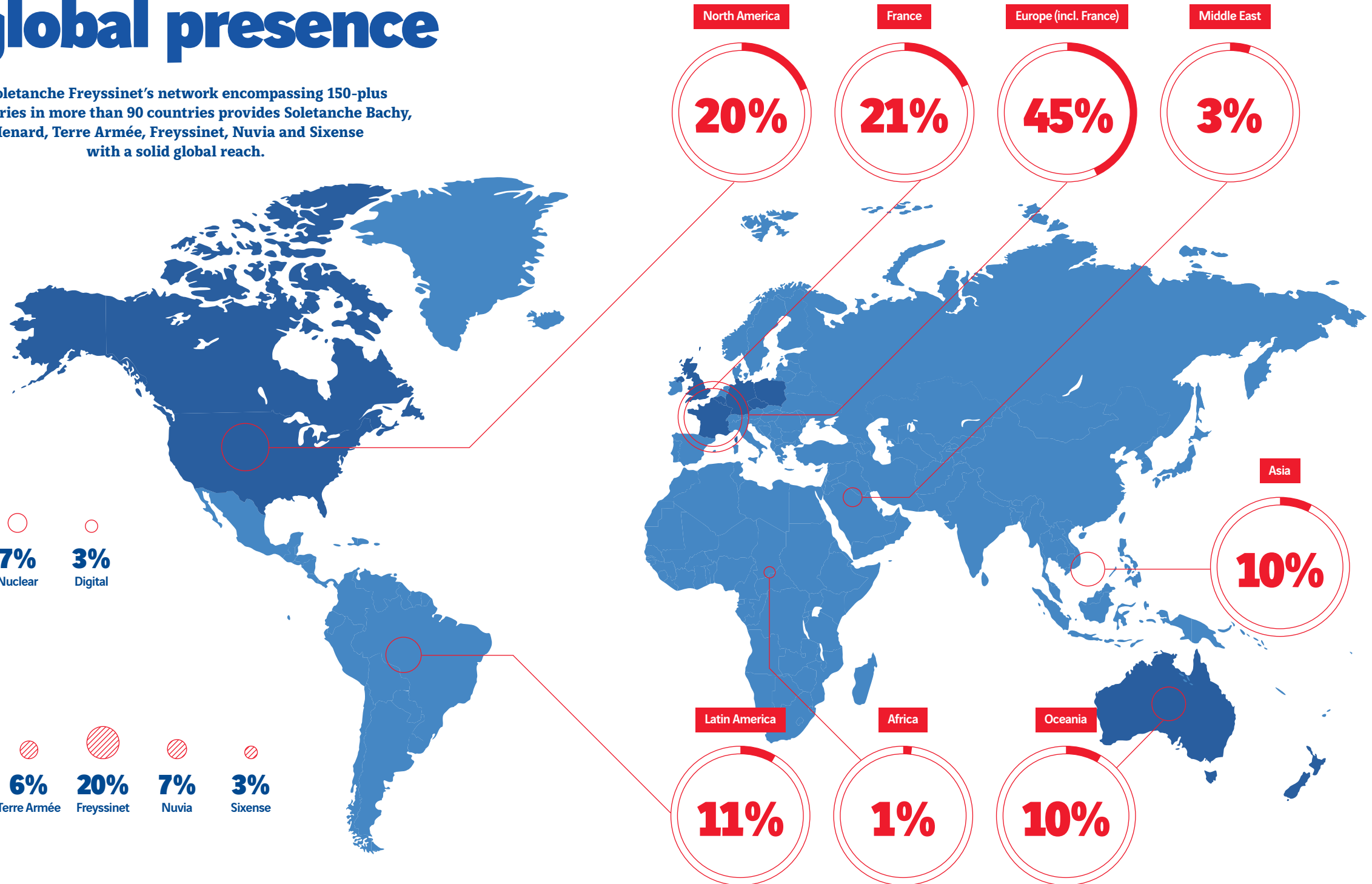
Revenue by business line



Revenue by brand



Revenue by geographical area



2023 figures.

24,495

employees

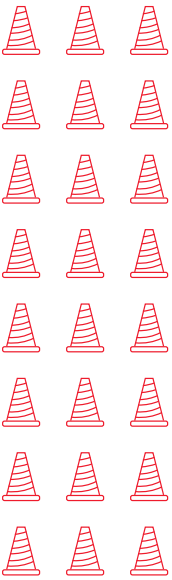


194

business units

22,000

projects worldwide



revenue

€4.67bn

Our brands

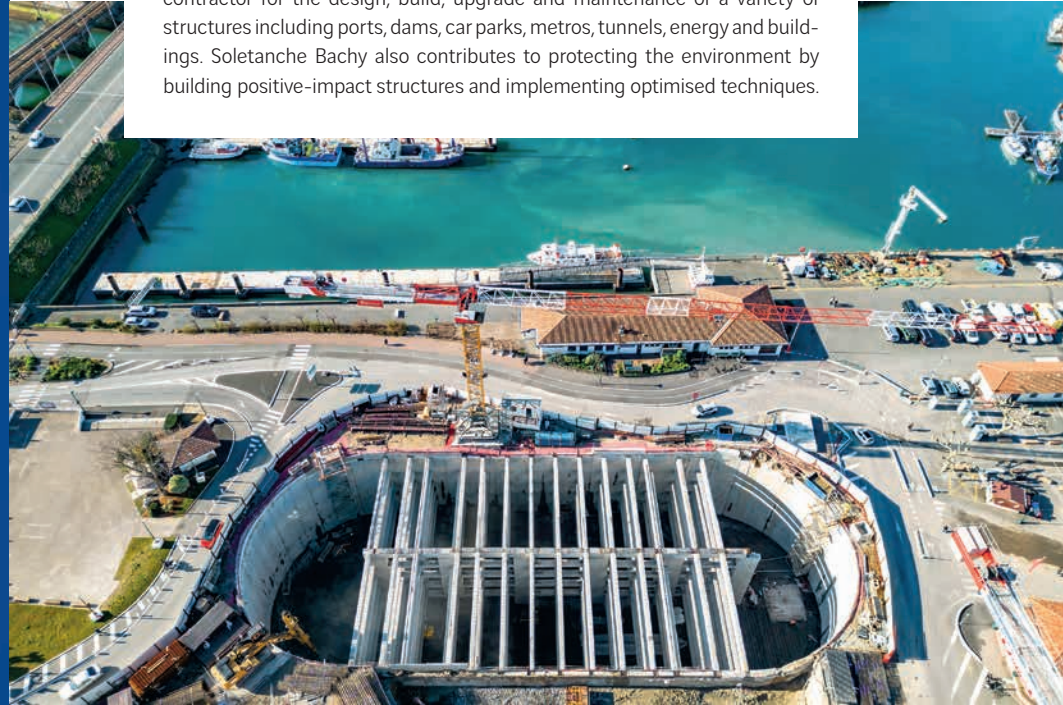
Soletanche Freyssinet brings together an unrivalled array of construction and engineering expertise. Our six brands – Soletanche Bachy, Menard, Terre Armée, Freyssinet, Nuvia and Sixense – are active in four main business lines: Soils, Structures, Nuclear and Digital. This unique combination of wide-ranging expertise places Soletanche Freyssinet among the world leaders in its markets.

10,667
employees

€2,326m
revenue

Soletanche Bachy is a world leader in foundations and soil technologies. It has around 80 subsidiaries and branches operating in 60 countries, which provide public- and private-sector customers with high-performance, innovative geotechnical solutions.

Soletanche Bachy acts both as a general contractor and as a specialist sub-contractor for the design, build, upgrade and maintenance of a variety of structures including ports, dams, car parks, metros, tunnels, energy and buildings. Soletanche Bachy also contributes to protecting the environment by building positive-impact structures and implementing optimised techniques.



Soletanche Bachy's foundations for the car park at Saint-Jean-de-Luz port, France.

Foundations for the New Central Harbourfront

Hong Kong | The teams working on this large-scale property development built an 853-metre-long diaphragm wall (1.2 to 1.5 metres thick), 31 large-diameter bored piles and a pipe pile retaining wall (with limited headroom) while handling the associated injection works. The main challenge was to do all of the above in a tight space wedged between an existing railway system (where works were also under way), road underpasses, a busy footbridge and a seawall.

#makingyourdayeasier



Our brands

Low-carbon concrete on the Sullivan 25 building

Mexico | Cimesa's teams working on the Sullivan 25 project were the first in the country to use Exegy® low-carbon concrete – which has a 35% smaller carbon footprint than conventional formulas. The works involved laying the foundations and erecting the outer walls for an 11-storey building and a basement (using anchored diaphragm walls). The foundation piles vary in diameter and reach 42 metres deep.

#greenisgreat #fostergrowth

Center Pier revamp, Port Hope

Canada | The municipality of Port Hope is home to a plant that processes uranium for nuclear power plants. The project, led by Canadian Nuclear Laboratories, involves clearing legacy mildly radioactive waste from various Port Hope facilities, including the Center Pier. Work on the pier will involve removing the storage site and other buildings, then backfilling and levelling the ground. Soletanche Bachy Canada, within the SBM joint venture, is tasked with reinforcing and rebuilding the Center Pier's walls. Our teams will pool several advanced engineering solutions such as steel sheet pile walls, combined sheet and pipe pile walls, tie rods, anchors, injection and backfilling.

#careforall





Soil improvement at Sihanoukville international airport, Cambodia.



Menard is active in three fields of expertise: soil investigation, improvement and remediation. True to its founder Louis Ménard's vision, it engineers and applies solutions that save resources, providing soils with a more sustainable future, the world over.



— Clay soil reinforcement, Welland

Canada | On OEM Linamar's Giga Facility construction project in Welland, Ontario, Menard's teams used controlled modulus columns (CMCs) to reinforce the soft clay soil beneath the structure. They set up a total of 1,150 18-metre-deep CMCs in four weeks, based on a generative design that cut the volume of concrete used by 12%. Menard also used low-carbon concrete meeting Exegy® standards to shrink the project's carbon footprint by 30%.

#fostergrowth

Our brands

— Kalina pond remediation

Poland | The municipality of Świętochłowice partnered up with Remea and Menard in 2020 to remediate the Kalina pond. The works, which began on 1 April 2021 and were completed in September 2023, have turned a contaminated spot into a popular leisure attraction.

The teams used innovative thermal desorption and bioremediation techniques to eliminate pollutants and reboot the ecosystem's biological activity. The pond is now a haven for people living in the area and visitors who enjoy relaxing in protected natural surroundings.

#makingyourdayeasier #greenisgreat



— Heap leaching platform

Peru | The ConeTec teams working on this large-scale mining operation handled the soil investigation and installation of measuring instruments. They applied sonic drilling techniques to dig more than 150 metres deep, conducted combined resistivity seismic (RSCPTu) soundings, and set up piezometers and inclinometers. These systems will be used during the mine's operation to keep large upright ore heaps stable.



2,389
employees

€676m
revenue

948
employees

€293m
revenue

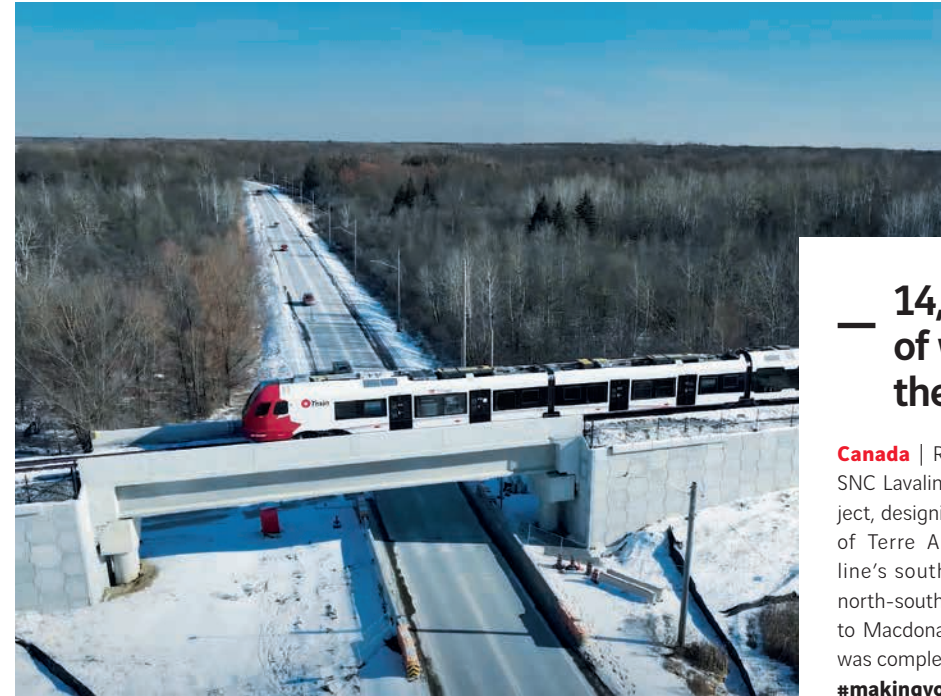


— Low-carbon panels for a canal bridge in Winchburgh

Scotland | The teams from Reinforced Earth UK designed and supplied the retaining walls made of precast panels and GeoStrap® polymer soil reinforcements for a bridge, as part of the Union Canal upgrade at Winchburgh, west of Edinburgh. The panels are 140 mm thick and were made using our Exegy® by Terre Armée concrete formula, which replaces 70% of the cement with ground granulated blast-furnace slag and thereby reduces CO₂ emissions by an estimated 60% compared with conventional alternatives.

#greenisgreat

Terre Armée creates and develops retaining, crossing, protective and strengthening solutions, leveraging its unparalleled expertise in reinforced backfill and soil-structure interaction. Its techniques have applications in a variety of fields such as roads and motorways, rail, industry, the environment or water engineering.



— 14,500 sq. metres of walls for the Trillium Line

Canada | Reinforced Earth Canada supported SNC Lavalin on Stage 2 of Ottawa's OTrain project, designing and supplying 14,500 sq. metres of Terre Armée® TerraClass® walls for the line's southward extension. This 16 km long north-south line includes a new connection to Macdonald-Cartier international airport, and was completed at the end of 2023.

#makingyourdayeasier #fostergrowth



Construction of a 647 sq. metre, 33-metre-high dump wall at a mine in Brazil.

— A pilot project on a flood canal

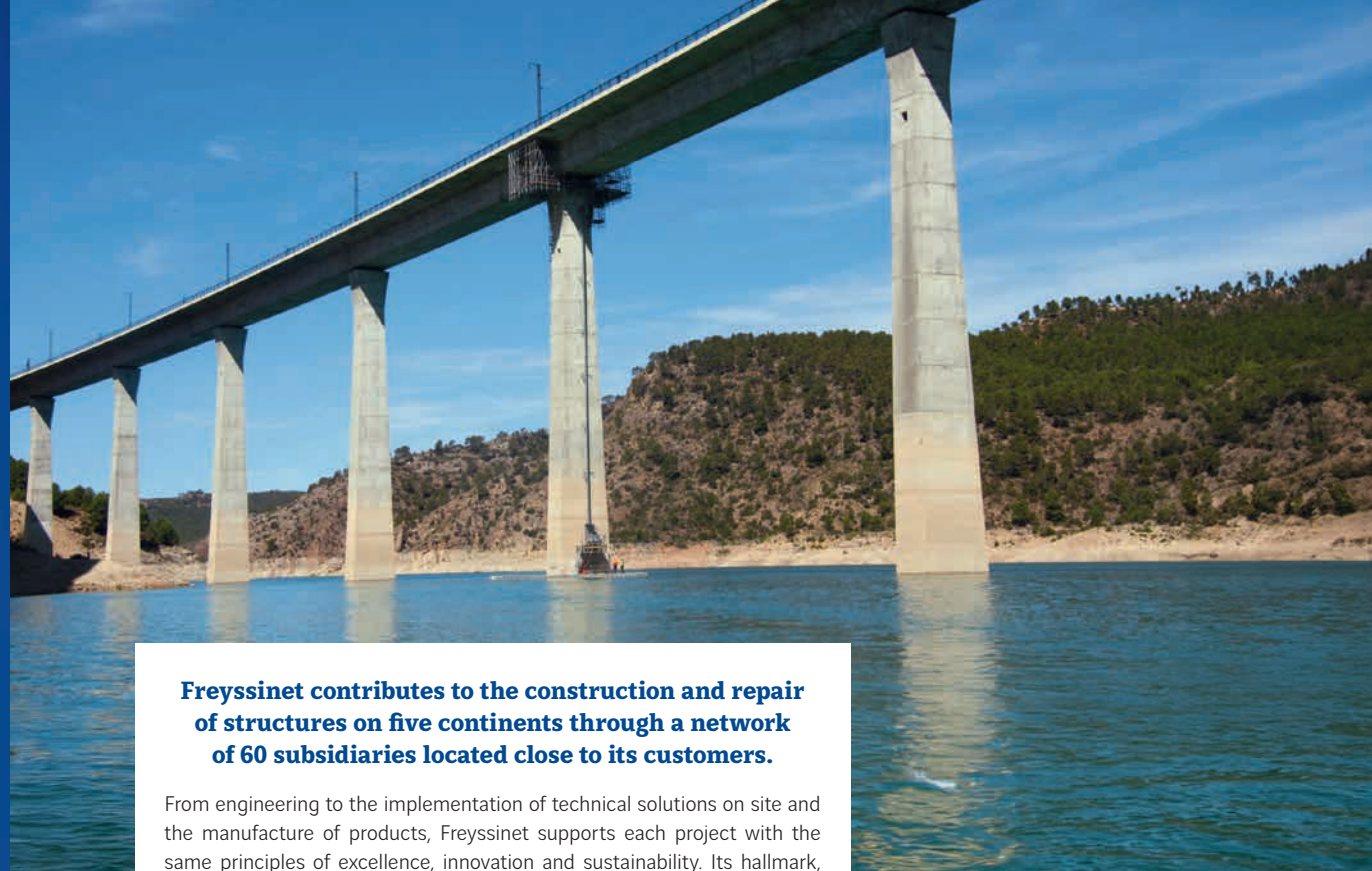
Philippines | The Jaro Floodway, an artificial river, avoids recurring flooding in Iloilo City. Reinforced Earth Philippines worked with the country's Department of Public Works on a pilot to certify Terre Armée's TechRevetment® solutions. It built a 50-metre by 6-metre structure in two weeks and used it to demonstrate that TechRevetment® – which is more economical and faster to set up than conventional concrete systems – effectively resists erosion.

#greenisgreat #careforall



6,632
employees

€933m
revenue



Freyssinet contributes to the construction and repair of structures on five continents through a network of 60 subsidiaries located close to its customers.

From engineering to the implementation of technical solutions on site and the manufacture of products, Freyssinet supports each project with the same principles of excellence, innovation and sustainability. Its hallmark, sustainable technology, encompasses an unequalled range of civil engineering expertise enabling the company to build structures using less materials, protect them and maintain them. This expertise includes post-tensioning systems, cable systems, equipment and maintenance, construction methods, repair solutions, seismic protection and structural strengthening.



Seismic isolators for Puente Industrial

Chile | Puente Industrial is the country's longest bridge, with 56 spans each 45 metres long, and is in an earthquake-prone area. Freyssinet's teams furnished this large-scale project with 784 ISOSISM® seismic isolators, entirely designed by Freyssinet, to optimise the structure's foundations. In the event of an earthquake, they will also avoid considerable reconstruction costs.

#makingyourdayeasier #careforall



Waterproofing reservoirs on the Pinnapuram project

India | The teams at Carpi are involved in the construction of Pinnapuram, a huge 1,680 MW solar, wind and pumped-storage project in India – which will be the biggest of its kind worldwide. They engineered, procured and built the waterproofing solution for the plant's upper and lower reservoirs.

#careforall



Isthmus viaduct on the Madrid-Valencia high-speed rail line, Spain.

A viaduct on metro Line 18

France | Freyssinet's teams are working on a 6 km viaduct – involving 178 spans, 2 launching beams, 1,000 tonnes of post-tensioning systems and 640 pot bearings – for Grand Paris Express Line 18. Freyssinet used a remarkable breakthrough on this project: digitally-enhanced post-tensioning, a system that records data from the entire process in real time and supplies it on a web-based application.

#makingyourdayeasier #fostergrowth



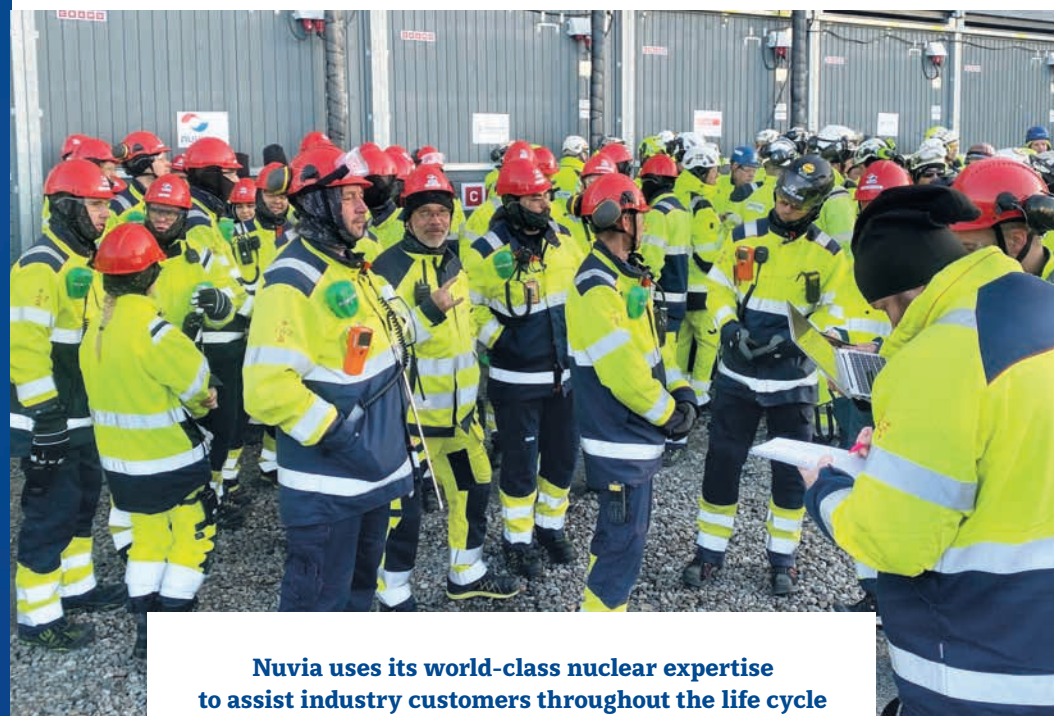
— 200 radioprotection technicians for 12 nuclear plants

United Kingdom | Magnox Ltd, which handles nuclear facility decontamination in the country, awarded Nuvia UK four service contracts in 2023, involving the supply of some 200 radioprotection technicians. These new contracts have solidified Nuvia's leading position in the United Kingdom's radioprotection market.

#greenisgreat #careforall



↓ Preparing and drawing up HSSE (health, safety and environment) plans for an oil and gas plant in Sweden.

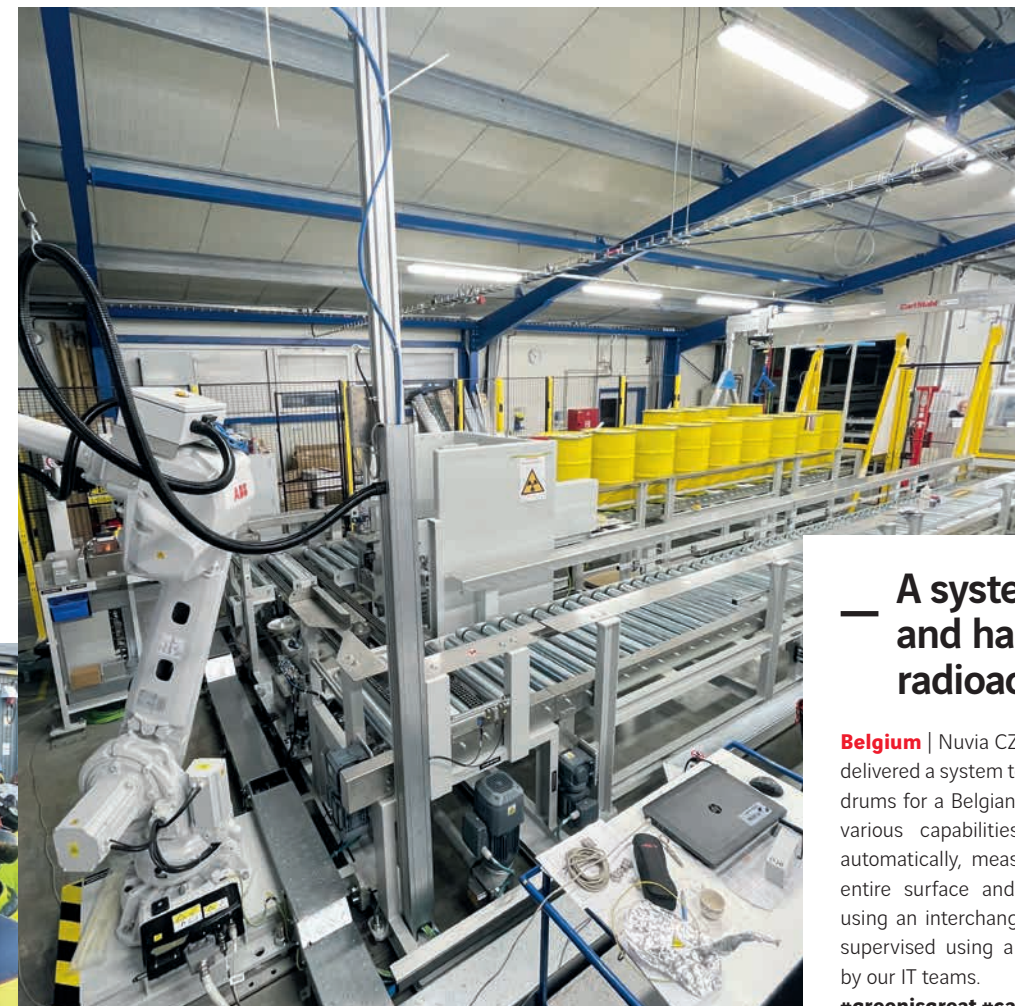


Nuvia uses its world-class nuclear expertise to assist industry customers throughout the life cycle of their highly sensitive and regulated facilities.

Nuvia is active in a variety of sectors including nuclear, defence, healthcare and the environment, providing its customers with full support services, engineering and the products required to design, construct, operate and dismantle their industrial facilities. It works side by side with them ensuring the highest safety and performance standards to help to build a safer, cleaner and more sustainable world.

2,732
employees

€329m
revenue



— A system to test and handle radioactive drums

Belgium | Nuvia CZ's teams designed, built and delivered a system to test and handle radioactive drums for a Belgian nuclear plant. The system's various capabilities include handling drums automatically, measuring dose rates over their entire surface and testing for contamination using an interchangeable robotic tool. It is also supervised using a digital interface developed by our IT teams.

#greenisgreat #careforall

— Dismantling nuclear reactors

Sweden | Vattenfall selected Nuvia Nordic to dismantle the electromechanical equipment in the buildings housing reactors 1 and 2 at the Ringhals plant. As many as 400 people will carry out the works from mid-2025 to 2031, and over 30,000 tonnes of materials will be treated.

#careforall



823
employees

€117m
revenue



Sixense supports its customers throughout the life cycle of their facilities. It monitors the condition and behaviour of structures and infrastructure, makes construction and operation safer, and optimises maintenance.

Its activities are organised around four areas of expertise: engineering, monitoring, software and process digitalisation, and existing asset digitalisation.

— Atlas+ InSAR in action on the Ontario Line

Canada | The Ontario Line South project in Toronto involves boring a 6 km tunnel for the metro, and Sixense's teams were charged with monitoring the colossal works. The Atlas+ InSAR solution, developed by Sixense, will ensure safety before, during and after construction.
#careforall



— LiDAR survey for Swissgrid

Switzerland | Swissgrid AG has enlisted Sixense Helimap to produce a digital survey of its entire high-voltage grid over the next three years. The LiDAR/Photogrammetry solution captures data points comprehensively, rapidly and non-invasively, regardless of the topography, over plains as well as glaciers. The main goal is to generate a very-high-density, three-directional and three-dimensional cloud of LiDAR points, an RGBNIR orthophoto with 5 cm resolution, and oblique images to document vertical components. The data will be used to generate an accurate digital twin of the asset and plan maintenance efficiently, so as to avoid service disruptions and the risk of starting forest fires.
#careforall

— Oléron bridge inspection and assessment

France | The Charente Maritime department has entrusted Sixense Engineering with running an in-depth inspection of the Pont d'Oléron. This 8-month job includes a detailed inspection, checking the supporting systems, assessing the condition of the reinforced concrete and monitoring the interior and exterior post-tensioning systems. Multidisciplinary teams from every Sixense expert department were involved. The supporting system inspection was digitalised using Beyond InSite, a solution developed by Sixense Digital that transfers inspection data to a 3D mock-up of the bridge.
#careforall



The principles guiding our action

Working together to...

Our attitudes – team spirit, excellence, entrepreneurship and transparency – resonate with all Soletanche Freyssinet employees. They guide everything we do and support our ambition, as a world-class builder, to forge a sustainable world.

...keep everyone healthy and safe

At Soletanche Freyssinet, health and safety are at the top of our mind, every day, at every worksite and at every production plant. The key to achieving our zero-accident objective is to act transparently, set an example and engage in dialogue. This is the bedrock of our shared health and safety culture.

...respect the environment

At Soletanche Freyssinet, we act for the climate, optimise resources thanks to the circular economy and preserve natural environments. Through the solutions we are developing, we are reinventing our construction trades and reducing our own environmental footprint. And we are reinventing the structures and infrastructure we build for our customers, to reduce their impact for years to come.

...respect people's rights

At Soletanche Freyssinet, we respect the rights of our employees, partners, subcontractors and local communities everywhere we go. We encourage our employees to become involved in social outreach projects and we support initiatives that benefit local communities.

...respect business ethics

Soletanche Freyssinet is a trusted partner. In keeping with the attitudes that guide us in everything we do, all employees must remain vigilant and ensure they, the people around them and the people they supervise properly apply the code of conduct.





Innovation built into our DNA

At Soletanche Freyssinet, innovation in all its forms – technical, environmental and marketing – is embedded in our DNA. We use our ideas and imagination day after day to enhance the services we provide for our customers, keep our teams safe and reach our environmental goals.

All our companies – Soletanche Bachy, Terre Armée, Menard, Freyssinet, Nuvia and Sixense – started with a bold breakthrough or out-of-the-box idea. In keeping with that tradition, Soletanche Freyssinet ran a new Innovation Awards campaign in 2023 to shine a light on its teams around the world and reward their pioneering ideas. They submitted some 200 projects from December 2022 to May 2023, in one of the competition's five categories: Engineering & Technologies,

Management & Digital, Marketing & Business Development, New ideas for the future and Site knowhow. The panel, comprising the innovation directors from Soletanche Freyssinet's six brands and the Coordination committee, picked the winning entries in each category. The regional awards ceremonies were held in Mexico (Americas), Bordeaux (France), Warsaw (Europe, Middle East and Africa) and Singapore (Asia and Oceania), and the final ceremony took place in Paris.

First prize

Direcsol®, an innovation from Soletanche Bachy, won the *Grand Prix* at the ceremony in Paris on 14 December 2023. This pioneering process is designed to ensure piles built with a hollow-stem auger, for secant or contiguous walls, remain vertical.

The team from Soletanche Bachy Fondations Spéciales started with an existing system, also developed in-house, Starsol® (which uses a continuous flight auger). Direcsol® added a patented device to correct any deviation in real time. Direcsol®, as a result, uses a conventional drilling tool in a more efficient way: it consumes less fuel because it requires less energy than a traditional dual rotation system.



Scan the
QR code
to watch
the film

The principles
guiding our action

Solidarity in action in Rwanda

**Freyssinet, in association with Soletanche Freyssinet,
renewed its partnership with American NGO
Bridges to Prosperity in 2023.**

The Bridges to Prosperity initiative provided an opportunity for employees to help build a footbridge in Rwanda to connect villages and enable the people living in them to reach schools and shops more easily.

Eleven volunteers, from all Soletanche Freyssinet brands around the world, flew to Rwanda in October 2023 to play an active role in building this bridge over the Mitabi river. It turned out to be much more than an engineering job: the meaningful connections with the local community turned it into a memorable human adventure for everyone on the construction crew.



Scan the QR Code
to watch the film

Build Better
Together

soletanchefreyssinet.com



Communications Department | Soletanche Freyssinet, 280 avenue Napoléon-Bonaparte – 92500 Rueil-Malmaison – France • **Copywriters** | Guillaume Billaroch, Julia Dennis • **Contributors** | Mélanie Cadennes, Sophie Fromion, Richard Loudin, Alexandre Miletitch, Tiphany Moreau, Carla Varene • **Design and production** | Brainsonic / Marion Stepien • **Photo credits** | Soletanche Freyssinet, Soletanche Bachy, Menard, Terre Armée, Freyssinet, Sixense, Nuvia, Nicolas Rouane