METROS

SUSTAINABLE MOBILITY

H1 2024

webuild

SUSTAINABLE MOBILITY

Metros

H1 2024

webuild

SCAN THE QR CODES WITHIN THE DOCUMENT
TO DISCOVER EXCLUSIVE CONTENTS

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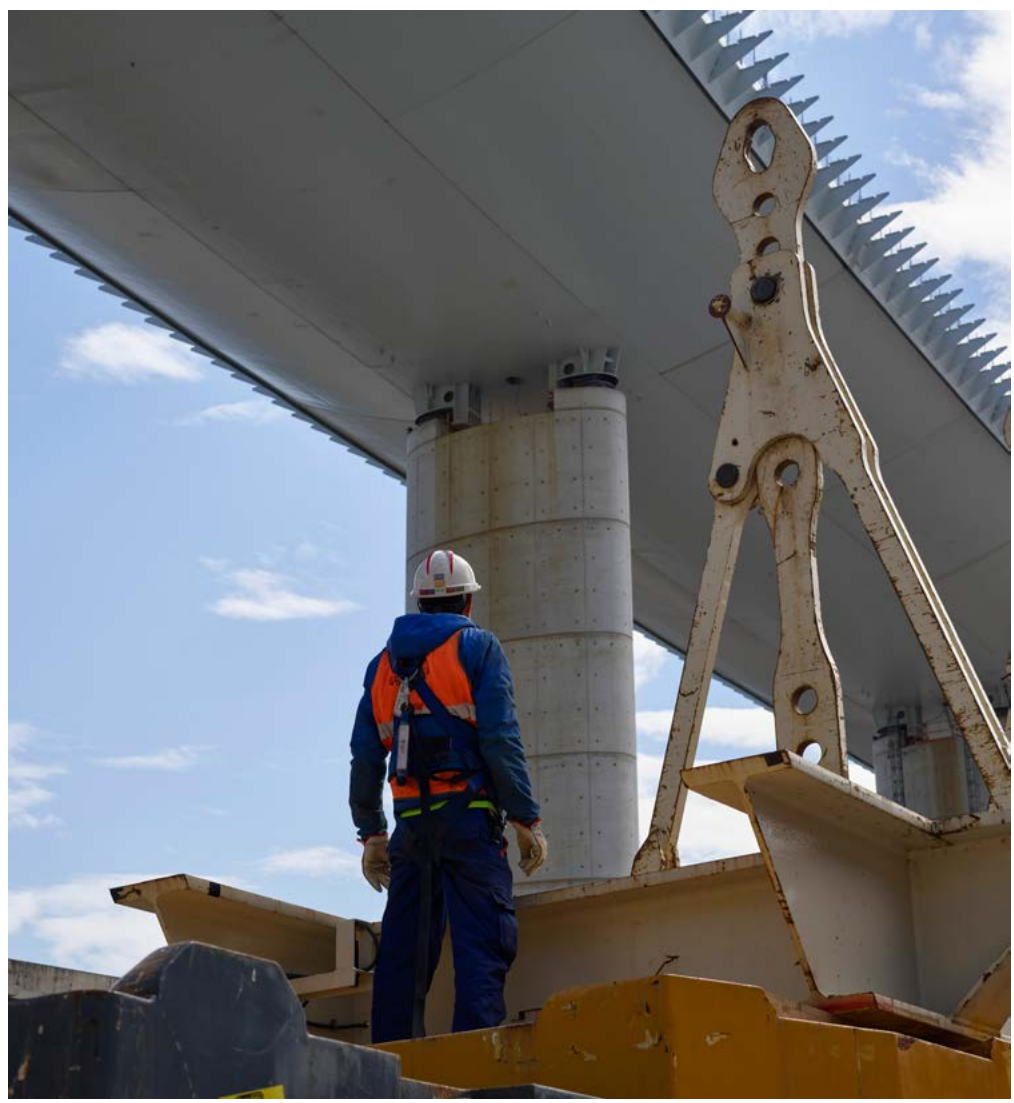
webuild


01
GROUP

GROUP

WHO WE ARE



Global player in the construction of large complex infrastructures, leader in the water sector, leading Italian contractor, among the 10 international top players in Australia, United States, Europe*.

For about 120 years we have contributed to the growth of the communities where we work, supporting clients in reaching their goals, with a “stay lean and go fast” approach, adopting flexible and safe solutions to satisfy our clients, pursuing efficiency and sustainable solutions to protect and enhance the environment, continuously delivering results in an uncertain world.

Webuild has a privileged position in the infrastructure sector as it is one of the few global operators with a strongly SDG-oriented core business directed towards the development and building of infrastructure that directly contributes to the achievement of the SDGs and transition to a low-carbon economy.

The company has a dynamic, constantly changing structure to underpin business growth in line with international best practices.

Listed on the Borsa Italiana stock exchange in Milan, the group has a qualified shareholders base, with CDP Equity and other Italian financial institutions to provide support to its development. Webuild is committed to creating value for its stakeholders, maintaining a close rapport with them through regularly meetings and communications about its activities.

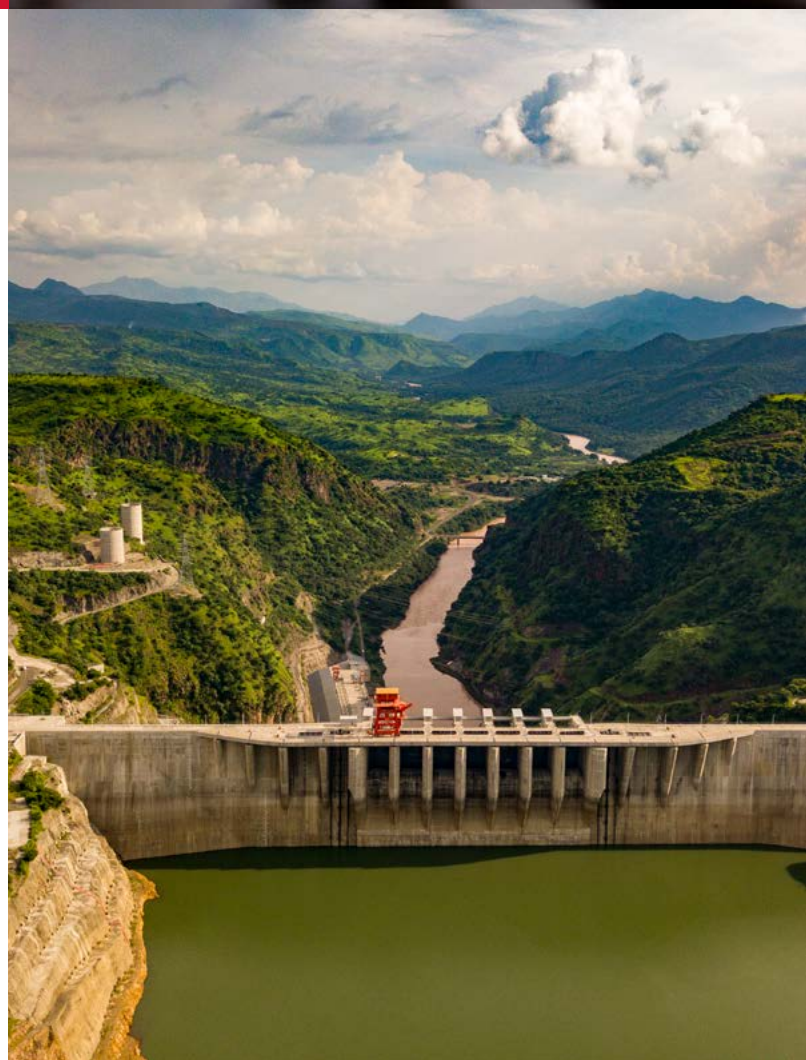
Our recent integration with companies like Clough, Astaldi, Seli Overseas, Cossi and Lane gives us a sharper competitive edge on international markets as a result of the new skills they bring to the group thereby enabling it to achieve more ambitious goals. Webuild intends to cultivate its role as partner to its clients in their climate and energy transition, taking on the challenges posed by the ongoing global megatrends, such as climate change, demographic growth, urbanisation and water scarcity.

* Ranking 2023 published by Engineering News-Record (ENR)

Sustainable Mobility

- → Metros
- → High Speed Railways
- → Railways
- → Roads & Motorways
- → Bridges & Viaducts
- → Ports & Sea works

Clean Hydro Energy



- → Hydroelectric Dams & Plants
- → Pumped Storage

Clean Water

→ Desalination & Water Treatment
→ Wastewater Management Plants
→ Hydraulic works
→ Irrigation Dams

Green Buildings & Other

→ Civil and Industrial Buildings
→ Stadiums
→ Hospitals
→ Airports
→ Energy Transition Projects

02

KEY FIGURES

Key Figures*

€10 bn

revenues in 2023

≈120

years of engineering and construction

≈90,000

average direct and indirect global workforce*

+110

nationalities

* 1H 2024 unless otherwise indicated

€65 bn

total backlog*

≈€56 bn

construction backlog*

>95%

percentage of new orders, including variation orders and best offers, in key markets with low-risk profiles*

>90%

of projects in construction backlog contribute to SDGs advancement*

* 1H 2024 unless otherwise indicated


webuild

03

STRENGTHS

STRENGTHS

OUR WAY OF DOING BETTER

Operational excellence

→ Global Group focused on large-scale civil engineering projects;
→ Outstanding skills and qualifications in key segments and key iconic projects worldwide;
→ Long and successful track record dating back about 120 years;
→ Proven ability to generate shared value in local markets, working closely with all the involved stakeholders.

Effective commercial strategy

→ Innovative Commercial Plan based on Reliability & Capability assessment;
→ Strong focus on market opportunities while managing risk;
→ Ability to compete selectively, focusing on projects with the best balance between available resources and risk/reward profile;

→ Strict selection of partners/suppliers of high quality;
→ Rigorous commercial strategy and target projects selection: re-engineered bidding strategy with a 360° analysis for each selected project.

Solid financial structure

→ Highly liquid balance sheet, with great attention to operating profitability and cash generation;
→ Low net debt/equity ratio, efficient use of capital;
→ Focus on maintaining adequate financial leverage for Group strategy for organic and acquisition-led growth.

Responsible behaviour: robust ESG standards

→ Strong set of ethical principles: integrity, correctness, transparency, sustainability;
→ Framework of policies and governance systems compliant with the highest standards;
→ Rules and procedures to safeguards people, environment and society at large;
→ Clear and transparent communication towards different stakeholders;
→ Climate action and circular economy: robust framework for reducing greenhouse gas emissions and supporting circular economy
→ Labour rights protection and promotion of safe and secure working environments for all workers.

Significant geographical diversification

→ Large and long-term backlog of orders;
→ Significant presence in high-growth markets: Italy, Australia, North America, and Europe;
→ Unique track record of large size projects performed in more than 100 countries;
→ Proven ability to penetrate new markets.

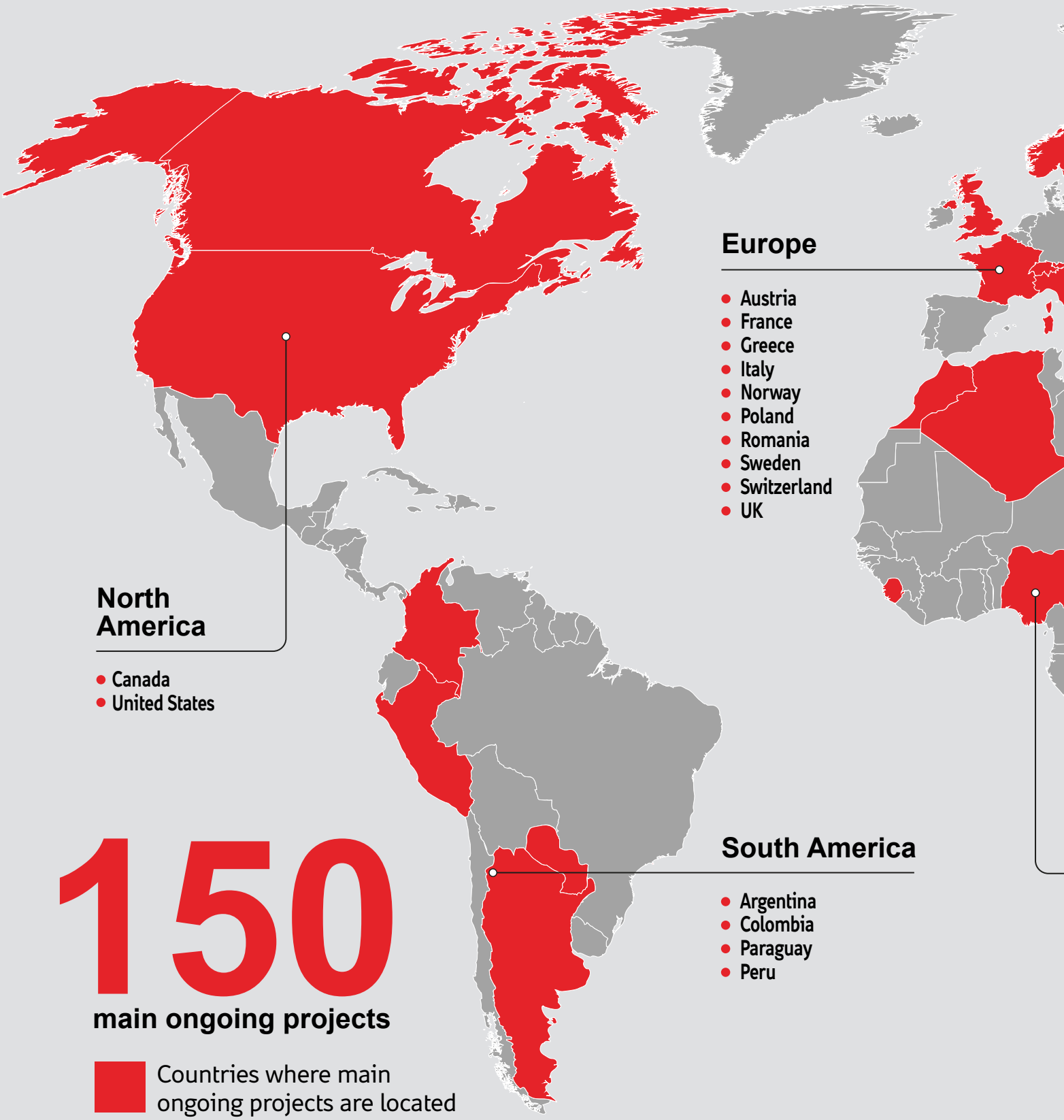
Efficient organization, change management, innovation

→ Proven M&A execution with skills integration and rationalization;
→ High level of expertise and optimized industrial processes, from the selection of potential projects to the preparation of bids, from supply chain management to contracts execution;
→ Some best in class innovation processes and products for design, planning and construction;
→ Innovative processes to increase competitiveness (cost, safety, quality, time of execution and environmental footprint).

04

FOOTPRINT

Global footprint



North America

- Canada
- United States

Europe

- Austria
- France
- Greece
- Italy
- Norway
- Poland
- Romania
- Sweden
- Switzerland
- UK

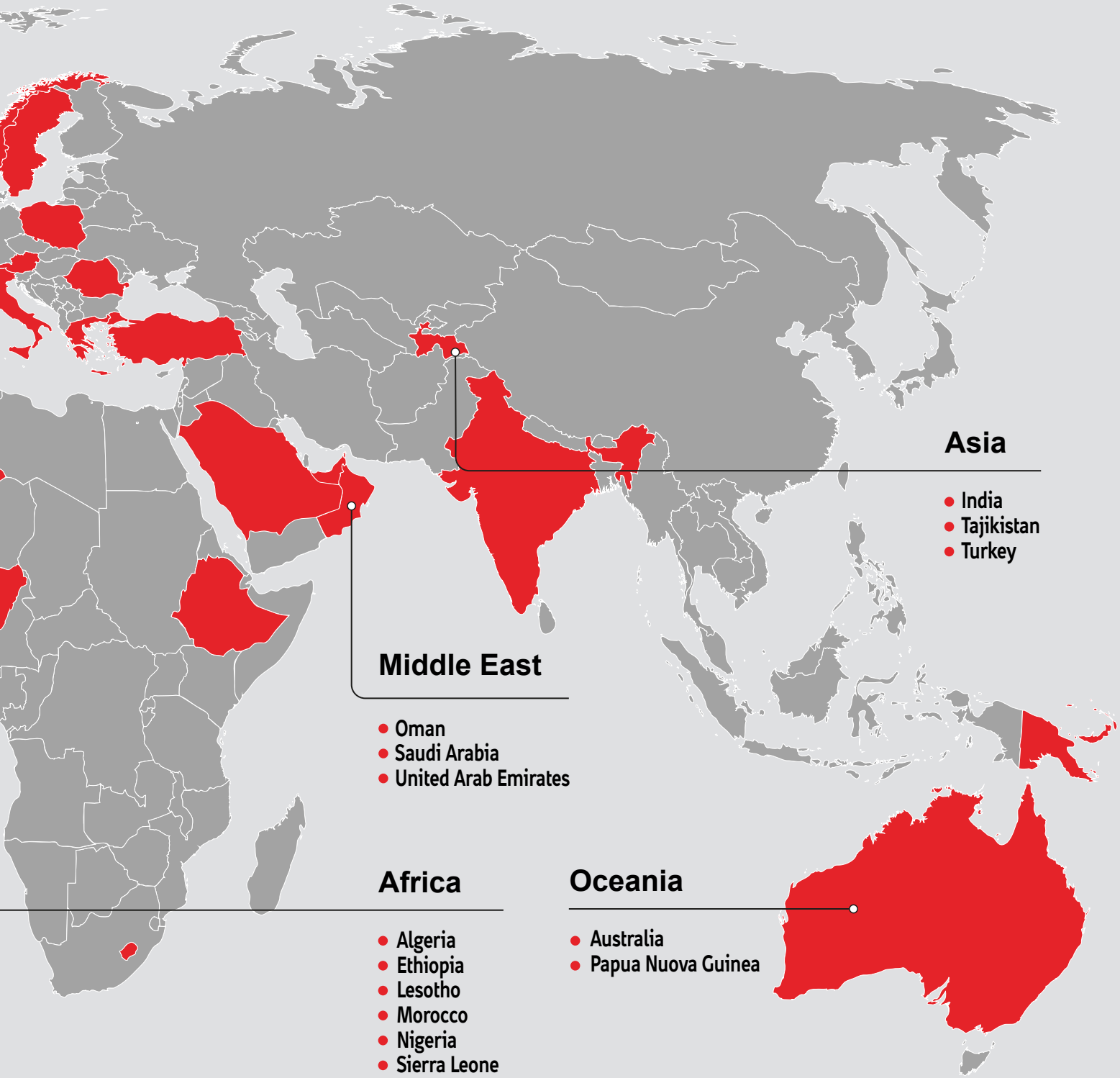
South America

- Argentina
- Colombia
- Paraguay
- Peru

150

main ongoing projects

Countries where main ongoing projects are located


Asia
India
Tajikistan
Turkey
Middle East
Oman
Saudi Arabia
United Arab Emirates
Africa
Algeria
Ethiopia
Lesotho
Morocco
Nigeria
Sierra Leone
Oceania
Australia
Papua Nuova Guinea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05 BUSINESS

BUSINESS

WHAT WE DO

Track record*

14,140 km

of railways and metros

1,020 km

of bridges and viaducts

313

dams and hydroelectric plants

* FY2023

3,408 km

of tunnels

82,533 km

of roads and motorways

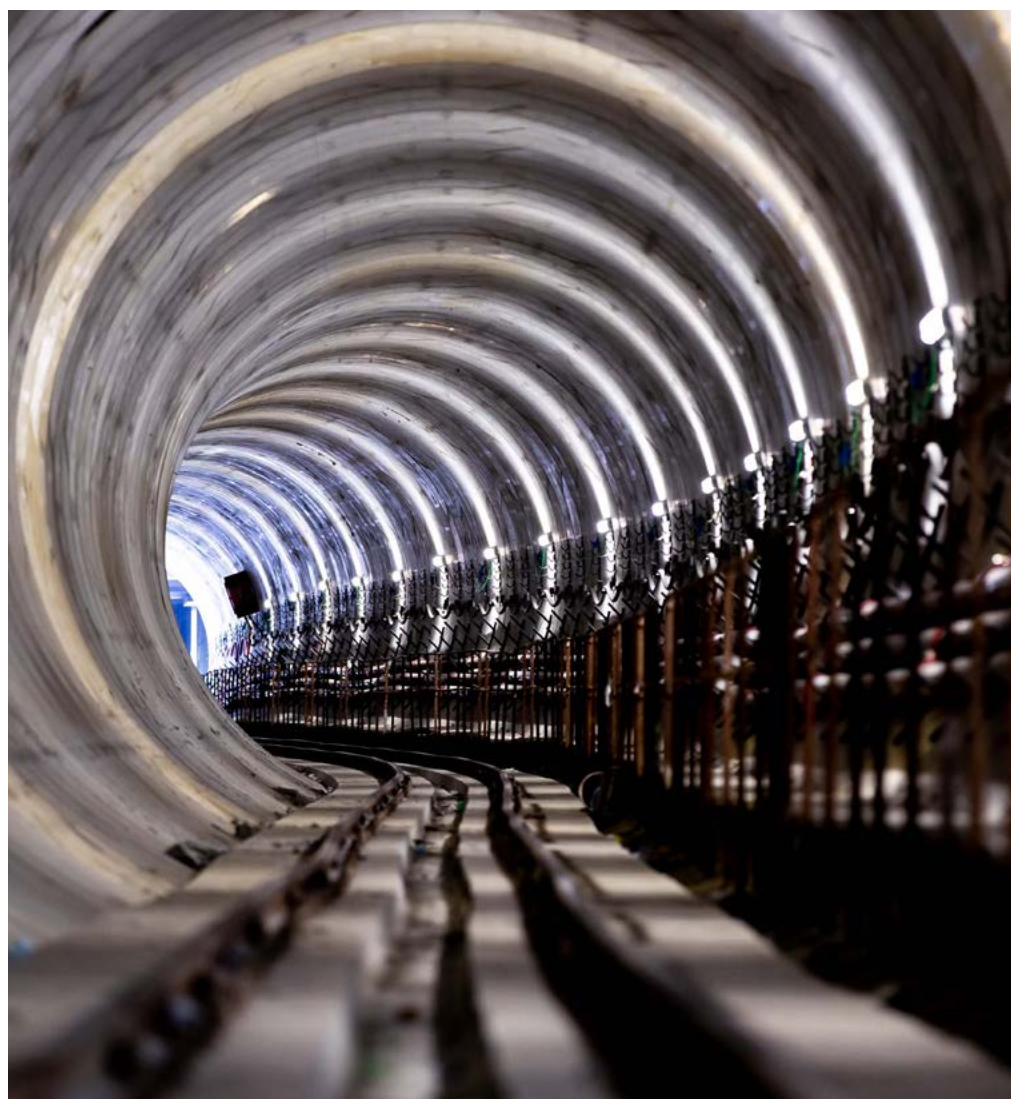
52,900 MW

of installed capacity

* FY2023

BUSINESS

SUSTAINABLE MOBILITY



— Metros
— High Speed Railways
— Railways
— Roads & Motorways
— Bridges & Viaducts
— Ports & Sea works

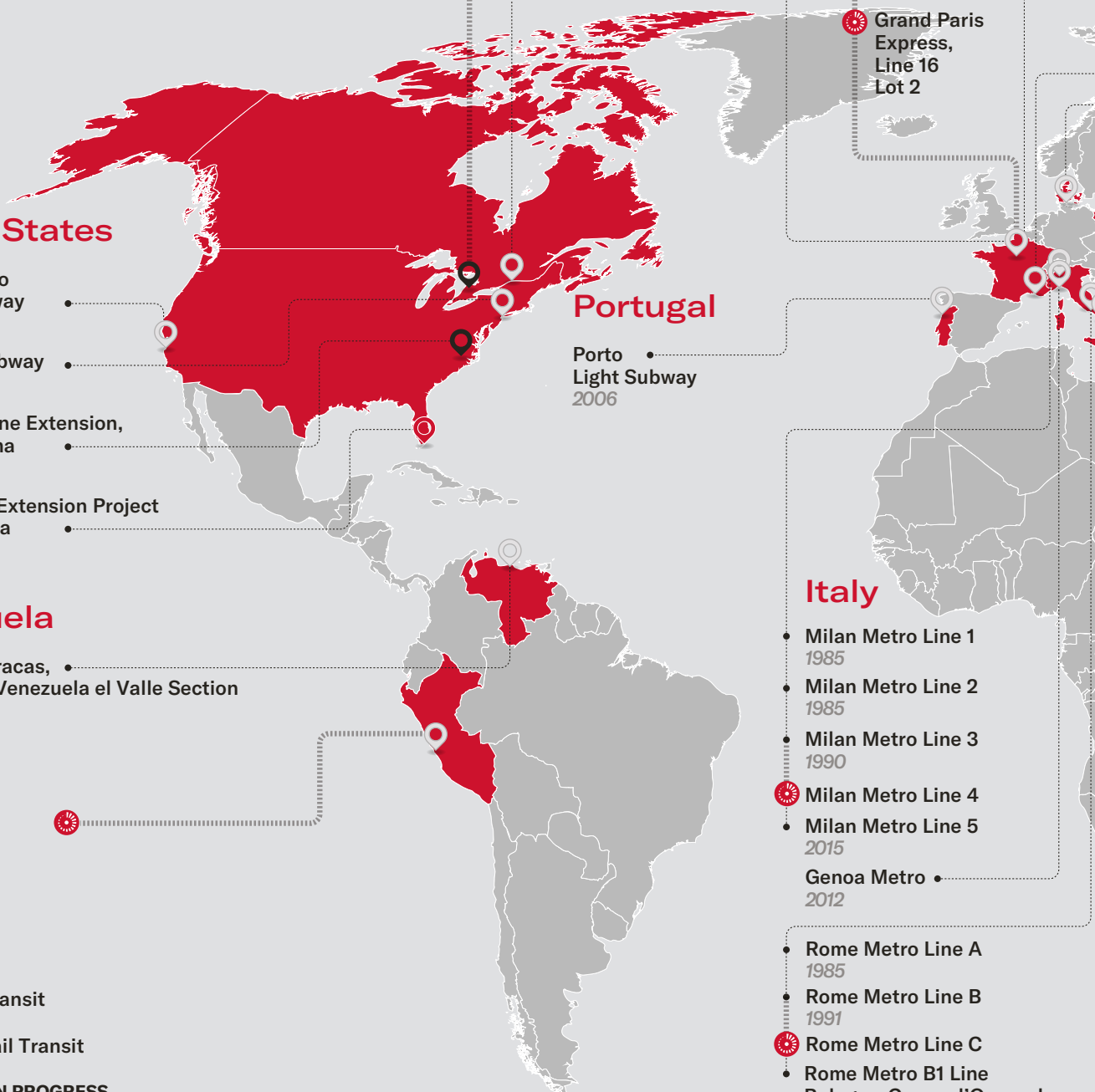
The sustainable mobility sector is one of the most promising business areas. It is expected that passenger traffic alone will grow by 50% within 2030, to then double by 2050, while only 16% of global urban travel currently takes place using public means of transport.

Rail transport is pivotal to government plans to counter climate change.
The role played by the metro systems in urban centres is equally important. Metro systems exist in around 180 cities, transporting more than 50 billion people a year and keeping the equivalent of 133 million vehicles off the roads each day.

The metro projects under construction alone will allow the fast, efficient and sustainable transportation of roughly 5.3 million people a day on state-of-the-art infrastructure, avoiding emissions of around 3 million tonnes of CO_2 a year.
The high-speed railway projects will shorten travel times by an average of 50%, providing around 37 million people with safe, rapid and low-carbon services one ninth of the most efficient aircraft.
The ongoing railway projects will lead to an annual reduction in emissions of about 9.3 million tonnes of CO_2.

Road infrastructure works will continue to be fundamental to move goods and people both in the developed economies (where the focus is mainly on modernisation and traffic decongestion) and low-income countries (where around one billion people still lack access to an all-weather road).

Main metros



Canada

Montreal Line 1
1975

Hurontario Light Rail Transit Project

France

Paris Subway Eole and Meteor Line
1998

Grand Paris Express, Line 15 Lot 2

Grand Paris Express, Line 16 Lot 2

United States

San Francisco Central Subway
2015

New York Subway
1984

LYNX Blue Line Extension, North Carolina
2017

Metromover Extension Project Miami, Florida
1993

Portugal

Porto Light Subway
2006

Venezuela

Metro De Caracas, Line 3 Plaza Venezuela el Valle Section
1995

Peru

Lima Metro

Italy

- Milan Metro Line 1 *1985*
- Milan Metro Line 2 *1985*
- Milan Metro Line 3 *1990*
- Milan Metro Line 4
- Milan Metro Line 5 *2015*
- Genoa Metro *2012*
- Rome Metro Line A *1985*
- Rome Metro Line B *1991*
- Rome Metro Line C
- Rome Metro B1 Line Bologna-Conca d'Oro and Conca d'Oro-Jonio Sections *2015*

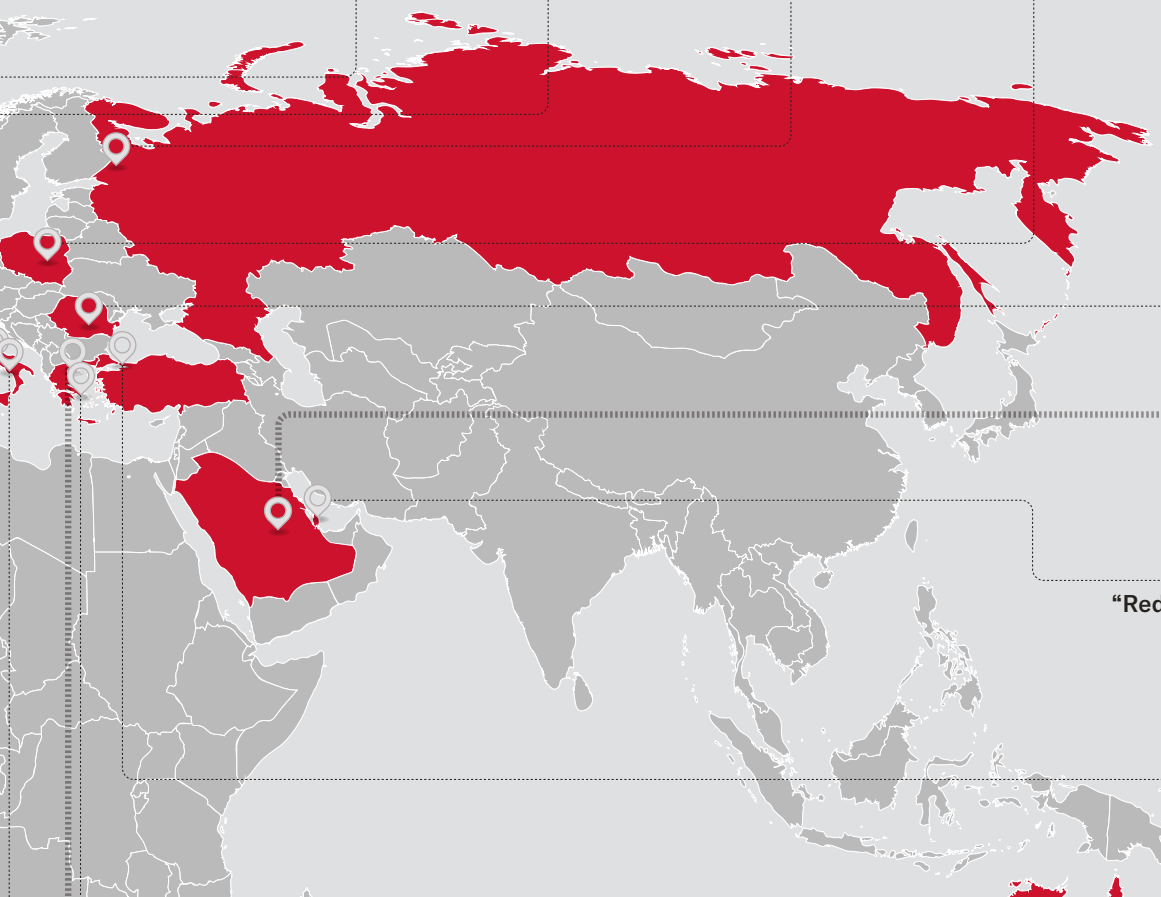
Metros

Mass Transit

Light Rail Transit

IN PROGRESS

XXXX COMPLETION DATE



Denmark

- Cityringen Metro Copenhagen
  2019

Russia

- Saint Petersburg Subway
  2004

Poland

- Warsaw Metro Line 2, Rondo Daszynskiego - Dworzec Wilenski Section
  2015

Romania

- Bucharest Subway Line 4
  2017
- Bucharest Subway Line 5
  2020

Saudi Arabia

- Riyadh Metro Line 3

Qatar

- Doha Metro System “Red Line North Underground”
  2020

Turkey

- Istanbul Subway Line 4
  2012

Australia

- Forrestfield-Airport Link, Perth
  2022
- Sydney Metro Northwest
  2018
- Western Sydney Airport Project
- Melbourne Metro
  1981

Greece

- Athens Metro Line 3
  2009
- Thessaloniki Metro System

France

- Extension of Line 14 South to Orly Airport
  2023
- Marseille Metro Line 1
  1991

Italy

- Naples Metro Line 1
  2012
- Naples Metro Line 6
  1998
- Naples Metro, Capodichino Station

FRANCE

Grand Paris Express Line 15 West Lot 2

Part of the most innovative sustainable mobility project in Europe

Webuild has undertaken a joint venture to design and construct four underground stations, 7km of tunnels and six functional works for Line 15 West of the Grand Paris Express, currently the most important and innovative sustainable mobility project in Europe.
The route of the line will run between Pont de Sèvres and Saint-Denis Pleyel stations. Its construction will be guided by the key principles of eco-design and reduction of the environmental impact of the works. As such, less carbon-intensive construction concrete and materials with a lower environmental impact will be used. Overall energy consumption will be mitigated thanks to energy recovered from the installations, technical equipment and train braking. There are plans for green terraces on the roof of each station, including 50% of the trees being native species to ensure biodiversity. To excavate the tunnels, Webuild intends to use a TBM (Tunnel Boring Machine) with a cutter head spanning 9.86m in diameter and a length of over 100m.

TECHNICAL/PRODUCTION KPI

7 km

of tunnels

500,000 m³

total volume of earth excavated (estimate)

79%

proportion of precast segments made of fibre-reinforced concrete

SUSTAINABILITY KPI

240,000

passengers/day expected to pass through the four new stations

19 mins (new) vs. 46 mins (current)

reduction in travel time between La Defense and Saint-Denis Pleyel

800,000

residents involved

ITALY

Rome Metro Line C

The capital's new metro line: a blend of sustainability, culture and innovation

Line C represents an unprecedented engineering challenge for the city's underground. Crossing the entirety of Rome from south-east to north-west, it connects the outskirts to the city centre. At 26km long – 17 underground and 9 aboveground – it comprises a total of 29 stations, from Monte Compatri/Pantano to Clodio/Mazzini. Construction work is proceeding in functional sections. The stretch from Pantano to San Giovanni is already in operation: 19km of tracks with 22 stations and a depot/workshop. The next stations to join the line will be Porta Metronia, Colosseo/Fori Imperiali and Venezia, which are currently under construction. These will be followed by Chiesa Nuova, San Pietro, Ottaviano and Clodio/Mazzini, which are in the design phase. The line's most unique feature is its archaeo-stations, which boast fully fledged museums integrated into the stations themselves, connecting the key cultural areas of the city by means of a route adorned with the archaeological finds unearthed during excavations: in addition to San Giovanni, which is now operational, Porta Metronia, Colosseo/Fori Imperiali and Venezia will also be archaeo-stations.

TECHNICAL/PRODUCTION KPI

1,830,000 m³
of concrete*

285,000 tons
of steel*

4,400,000 m³
of underground excavations*

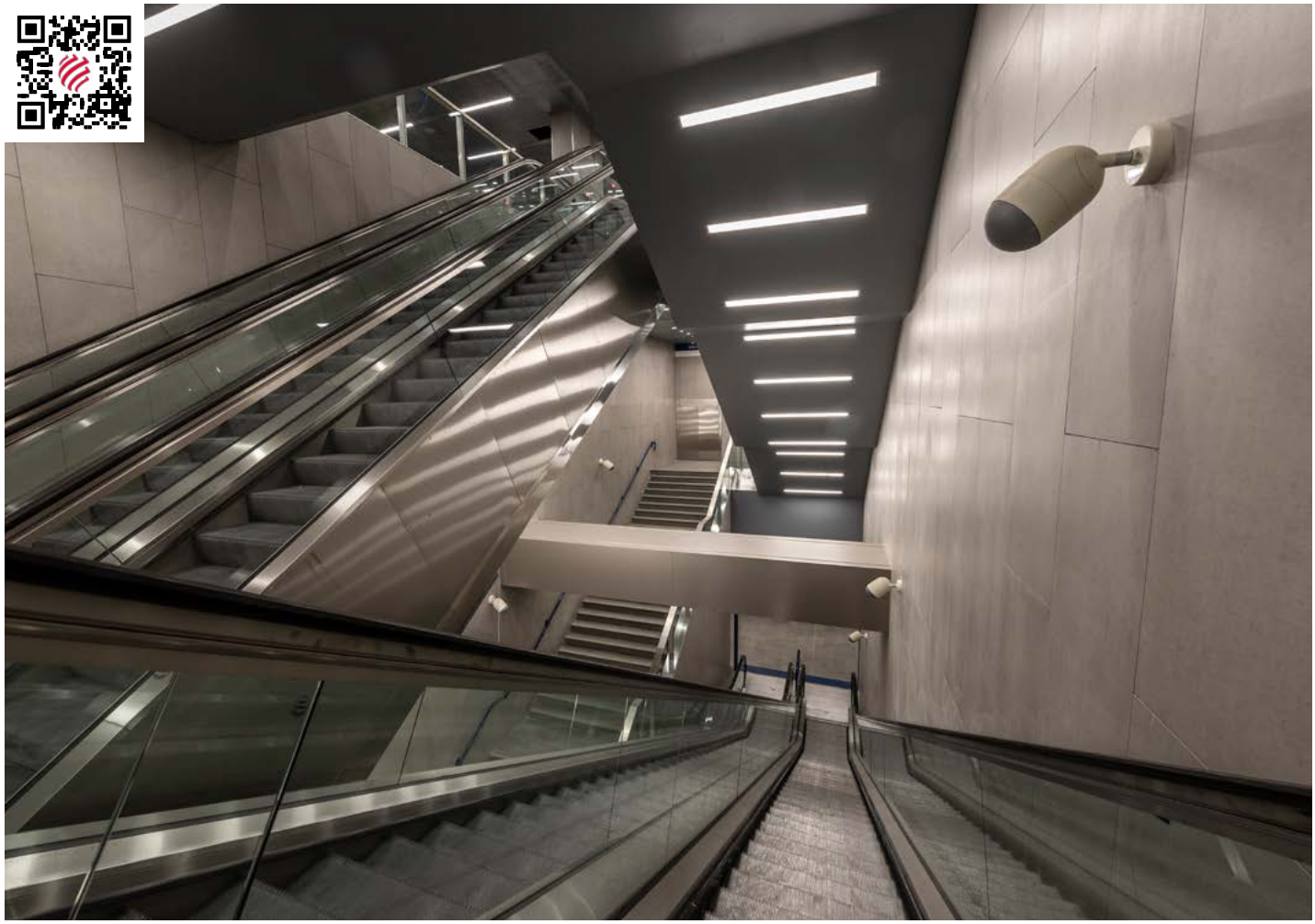
SUSTAINABILITY KPI

800,000
passengers/day
(maximum capacity)

-310,000 tons/year
CO_2 emissions

585,000 m3
of archaeological excavations

*Data pertaining to the main Monte Compatri/Pantano - Clodio-Mazzini section of the line.



ITALY

Milan Metro System, Line 4

The world’s fastest connection between an airport and a city centre (12mins)

Line 4 has a total length of approximately 15 km, with 21 stations, 30 auxiliary structures and 1 depot/workshop, two single tracked tunnels, excavation diameter of 6.50 m in the external sections, excavation diameter of 9.15 m in the central sectoin ("Rome method"). It creates a high-speed public transport link along the east/southwest axis, crossing the historic city centre. It is a driverless, fully-automated light metro with automatic platform doors and a CBTC signaling system (Communication – Based Train Control).

TECHNICAL/PRODUCTION KPI

770,000 m³	**67,800 tons**	**1,230,000 m³**
concrete	steel for reinforced concrete	open excavations

SUSTAINABILITY KPI

86,000,000	**-180,000**	**-75,000 tons**
passengers per year	trips by car per day	CO_2 emissions estimated per year

ITALY

Capodichino Station (Naples Metro Line 1)

A new mobility hub for the city of Naples

The station is part of the Naples Metro Line 1 upgrade and development project. Once completed, it will help to make Naples one of the first cities in the world that can boast a direct underground connection linking the port, airport and mainline railway network, including high-speed trains, with significant benefits for travel times and traffic volumes. The project involves the construction of a new station to serve Capodichino airport and the redevelopment of the surrounding urban area.
Designed by Ivan Harbour (RSHP Architects) and inspired by the Pozzo di San Patrizio in Orvieto, the areas of the station that will be open to the public will have a circular layout with a diameter of about 33m and a maximum depth of about 50m. The circular portion is a single open-plan area with eight central lifts and four spiral staircases that lead up along the walls to the open entrance hall at street level. The roof of the station – which is made of steel, glass and concrete – is reminiscent of a hangar and weighs 450 tonnes.

TECHNICAL/PRODUCTION KPI

70,000 m³
of concrete used for the entire structure

8,000 tons
of steel used for the entire structure

SUSTAINABILITY KPI

9 min
airport-city centre connection time

15,000,000
passengers expected per year

200,000 m³
of land reused to redevelop the area

SAUDI ARABIA

Riyadh Metro, Line 3

The longest line of the giant sustainable project of the Saudi Arabian capital

Line 3 runs from West to East for approximately 42 km and a total of 22 metro stations, including 2 iconic stations. The new metro will reduce traffic congestion and lower pollution in a city with a population that is expected to increase from its current 6 million inhabitants to 8 million by 2030. The project adopts the LEED – Leadership in Energy and Environmental Design - standard for two stations. About 21 km of viaduct are built with prefabricated blocks erected using a total of 7 launching girders to minimize the possible impact on the city's roads. One TBM and Cut & Cover method are used for the underground section. The trains travelling line 3 will have a capacity of 267 passengers and a maximum speed of 100 km/h.

TECHNICAL/PRODUCTION KPI

1,900,000 m³	**240,000 tons**	**35,000,000**
concrete	steel for reinforced concrete	man/hours without LTI

SUSTAINABILITY KPI

5,000	**-80,000**	**-100,000 tons**
passengers per hour in each direction	trips by car per day	CO_2 emissions per year

CANADA

Hurontario Light Rail Transit

Sustainable Urban Mobility for Growing Cities

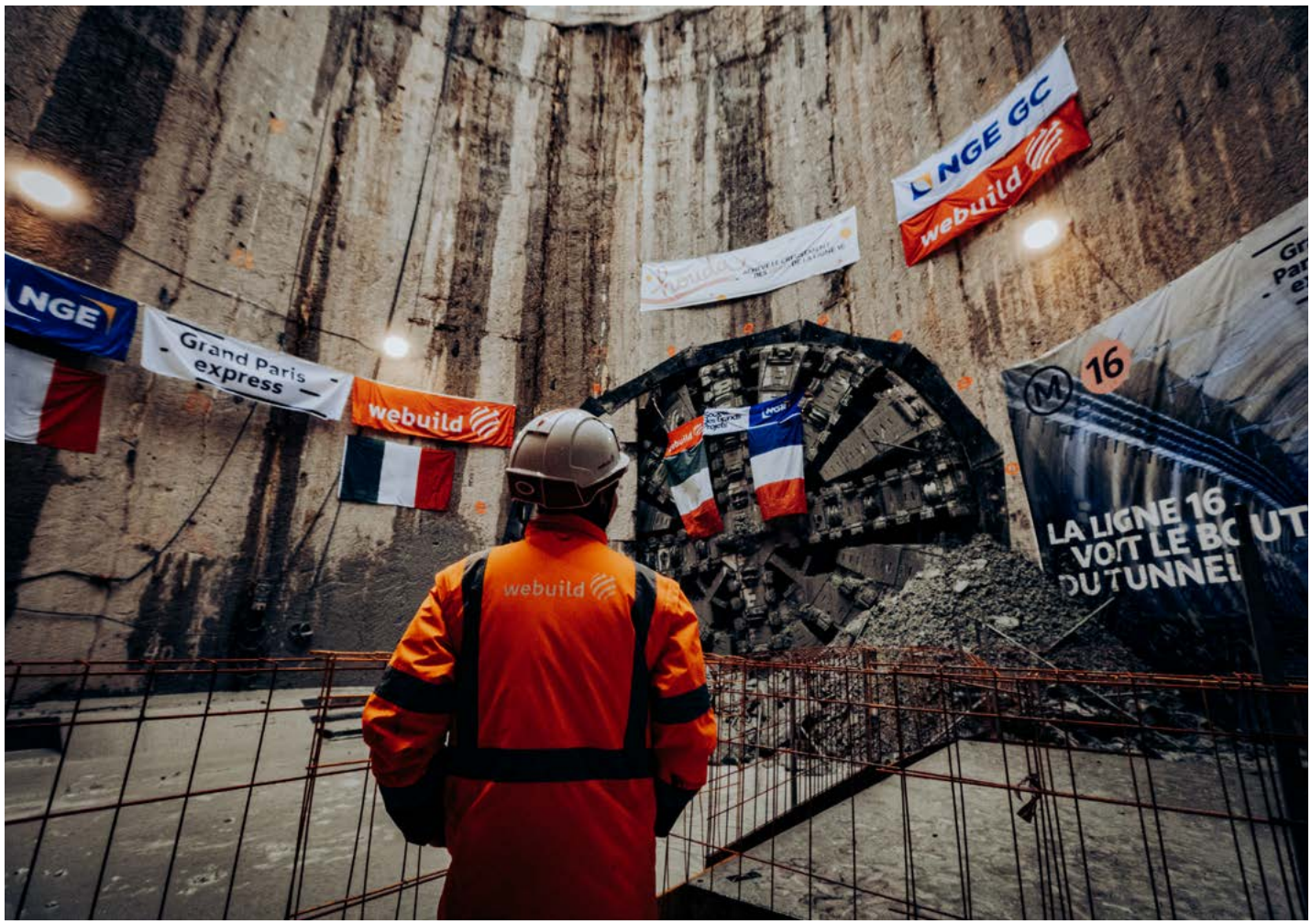
The HuLRT is an 18 km-long light rail transit system with 19 stops that runs along Hurontario Street from Port Credit in Mississauga to the Brampton Gateway Terminal. The HuLRT will operate in a separated guideway with traffic priority throughout most of the corridor, accommodating a double cycle path and becoming a people-oriented corridor connecting communities and accommodating growth anticipated over the next 30 years. The project also comprises upgrade and commissioning of third party infrastructure, road resurfacing and widening, construction, modifications and rehabilitations of bridges, traffic management and detours, road signing and lighting, parking areas and one Building for the Operations and Maintenance for the LRT vehicles.

TECHNICAL/PRODUCTION KPI

49,866 m³	**253,285 tons**	**531,143 m³**
concrete	asphalt	excavations

SUSTAINABILITY KPI

14,000,000	**-8,573 tons/yr**	**-30,000**
passengers per year	greenhouse gases (CO_2 equivalent)	trips by car per day



FRANCE

Grand Paris Metro, Line 16 Lot 2

Part of the biggest sustainable mobility project in Europe

The future Grand Paris Express Line 16 will serve several communes in the northern and eastern parts of the Paris metropolitan area. Lot 2 involves the excavation of 11.1km of tunnels and the construction of 4 of the 10 stations planned along the entire line (Aulnay-sous-Bois, Sevran-Beaudottes, Sevran-Livry and Clichy-Montfermeil), in addition to 11 connected works. The whole line will serve the Seine-Saint-Denis department, for a total of 16 communes, with an estimated capacity of 200,000 passengers a day, helping to alleviate road traffic and preventing the emission of 52,000 tonnes of CO_2 each year. Webuild construction sites are distinguished by their exceptional capacity for technical innovation and social inclusion. As such, the team working on Lot 2 includes 55 women: a higher number than for other lots of the Grand Paris Express. Fibre-reinforced concrete segments were used to line the tunnel, marking an innovation that effectively halved the amount of steel used in the project.
Excavations for Lot 2 have been completed and the entire project is scheduled for completion by next autumn.

TECHNICAL/PRODUCTION KPI

810,000 m³
TBM excavation

2,481 m³
traditional excavations

~49,000 kg
steel ribs used to line the tunnels

SUSTAINABILITY KPI

200,000
passengers/day*

154,000
fewer cars on the roads*

-52,000 tons/day
CO_2 emissions*

*Estimated data pertaining to Line 16 as a whole.

FRANCE

Extension of Line 14 South towards Orly Airport (Lot 4)

The Métro line connecting central Paris to Orly Airport

The extension of Line 14 South towards Orly Airport officially opened to passengers in June 2024. For this line, Webuild completed works in 2023 on Lot 4: a section of the line in tunnels spanning around 4km that connects Pont de Rungis station with the airport. The tunnels were excavated using a TBM (Tunnel Boring Machine).
Line 14 South links Saint-Denis station, in the north of Paris, with Orly Airport and is part of the Grand Paris Express: the new Métro network serving Île-de-France that is one of the most important and innovative sustainable mobility initiatives in Europe today. With eight new stations and passing through 11 communes along its 28km length, estimates suggest that the new line will greatly benefit the 260,000 residents to the south of Paris, in the Val-de-Marne and Essonne departments, carrying up to a million passengers a day by mid-2025.

TECHNICAL/PRODUCTION KPI

10,940 m³
of structural concrete used

2,207 tons
of concrete reinforcing steel used

4,026 m
length of excavated tunnels

SUSTAINABILITY KPI

300,000
passenger/day

-230,000
car journeys/day

-15,000 tons/year
CO_2 emissions

ROMANIA

Bucharest Metro Line 5 Lot 1

A new leap forward for the city's sustainable mobility

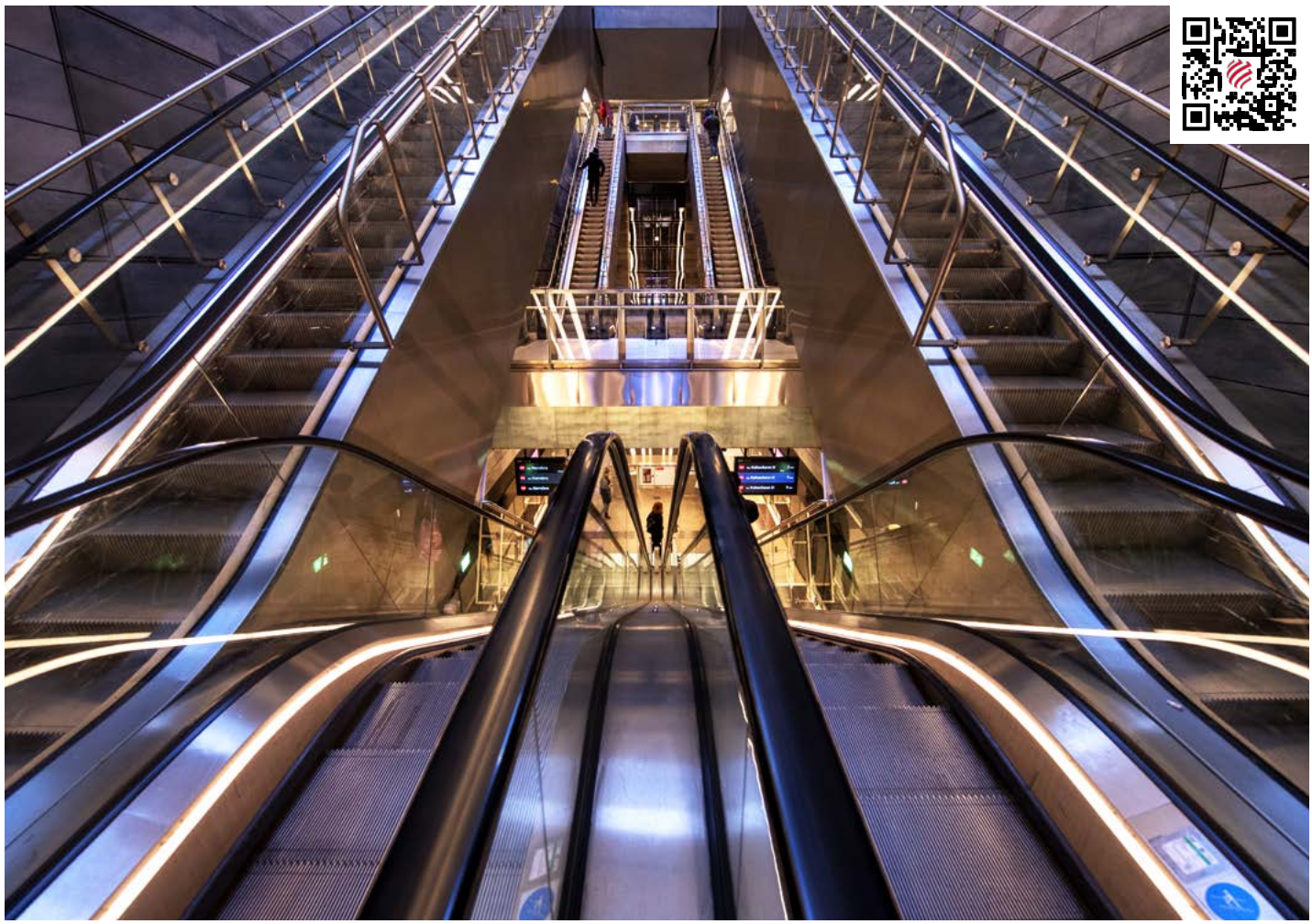
The plans for Lot 1 of Line 5 of the Bucharest Metro involved the design and construction of two single-track tunnels – each 4.2km long – as well as nine stations, over the section that runs entirely underground between Râul Doamnei and Eroilor stations (PS Opera).
In total, the works required the excavation of just over 8km of tunnels, using EPB TBMs (Earth Pressure Balance Tunnel Boring Machines), as they have characteristics that are particularly well suited to excavating the types of subsoils that sit beneath urbanised areas. Eroilor station provides a direct link with the rest of the metro network by means of a pedestrian underpass leading to the existing Lines 1 and 3. The other stations were placed along main thoroughfares served by street-level public transportation, in an effort to improve intermodal travel by facilitating interchanges between underground and overground means of transport.

TECHNICAL/PRODUCTION KPI

383,000 m³	**34,500 tons**	**385,000 m³**
of concrete	of steel	of underground excavations

SUSTAINABILITY KPI

-5,400 kg	**-293 kg**	**-541 kg**
CO_2 emissions/day	NO_x emissions/day	emissions of volatile organic compounds



DENMARK

Copenhangen Cityringen Metro

The underground loop line leading the city towards its goal of carbon neutrality

Cityringen, which was completed in 2019, is a modern, sustainable infrastructure that circumnavigates Copenhagen. Its construction involved the excavation of 31km of tunnels, connecting a total of 17 elegant stations located beneath the city's historical centre. The excavations were carried out with TBMs (Tunnel Boring Machines): enormous mechanical 'moles' which negotiated their way through the ancient wooden foundations of the city's buildings, all without putting them at risk or disrupting the day-to-day life of citizens with the noise of diggers, the traffic of heavy vehicles, or the encumbrance of loading and unloading cargo. An impressive feat of engineering that allowed the peace and quiet of Copenhagen to remain undisturbed. Cityringen was designed with an ambitious goal namely to support the city in its goal to become the first carbon-neutral capital in the world. With 85% of citizens now served by a station located within 600m of their homes, car use has dropped dramatically, with the effect of significantly reducing emissions.

TECHNICAL/PRODUCTION KPI

428,000 m^3	**115,000 tons**	**862,000 m^3**
of concrete	of steel	of underground excavations

SUSTAINABILITY KPI

240,000	**-96,000**	**-50,000 tons**
passengers/day	car journeys/day	CO_2 emissions per year

ITALY

Naples Metro Line 1

A gem of engineering that boasts the most magnificent Art Stations in Naples

Line 1 of the Naples Metro, built in multiple stages as part of the plan to improve the city's underground transportation network, is nothing short of a gem of engineering and art. The works carried out by the Webuild Group include the key stations of Università, Toledo, Dante, Museo, Materdei, Policlinico and Colli Aminei, as well as the section between Colli Aminei and Piscinola. Webuild's current focus is the construction of Capodichino Station.

The works form part of the overarching 'Art Stations' programme which, drawing upon the expertise of internationally renowned artists and architects, aims to transform places traditionally considered merely transitional into fully fledged art galleries. Toledo Station – designed by Spanish architect Óscar Tusquets Blanca and officially opened in 2012 – has garnered numerous awards, including the CNN Award naming it the most beautiful metro station in Europe. The project represented a significant feat of engineering, with the challenge lying in the geologically and archaeologically complex terrain to be negotiated for its construction.

TECHNICAL/PRODUCTION KPI

49 m

depth of Toledo Station

7,000 m²

surface area of Toledo Station

18 km

metro line in operation

SUSTAINABILITY KPI

135,000

passengers/day

06

INNOVATION

INNOVATION

OUR DRIVERS

— Construction efficiency improvement
— Project-specific challenges overcoming
— Construction risks reduction
— Environmental and safety improvement
— Open innovation through supply chain
— Core processes efficiency boosting

Innovation is the key we use to face global challenges in a sustainable way. Webuild develops technological, contractual and managerial innovations in order to be able to offer high added value services, meeting the global environmental challenges and help its customers move towards sustainable solutions. In 2022, Webuild designed the first Innovation Centre in Lecce (Puglia), aimed at researching and developing multiple complex solutions based on "disruptive" technologies, with the main objective of improving efficiency, sustainability and safety.

Supply chain

Webuild is investing resources in Open Innovation, to promote the innovation strategy through interaction with external innovation environment, like start-ups, universities and the most innovative companies. Our supply chain, managed through a dedicated Platform, consists of:
→ **+19,400 suppliers** from 80 countries,
→ **High quality supply base** with average vendor rating index 80/100
→ **High innovative suppliers involved in Supplier Meetings** to boost potential innovative proposals within the Group's projects.

Construction techniques

The Group applies the Lean Construction principles to re-engineer its processes, with a continuous focus on planning and monitoring to improve performance. In recent years the Group worked on some best in class innovative processes/ products, from tunnelling to special works. While contributing to improve the Tunnel Boring Machines techniquearound the world with high-pressures/high-grades/highly-connected TBMs, Webuild is continuing to innovate the tunneling industry developing, for example, innovative methods to install vertical pipes underwater such as the so-called Riser Concept applied in the Matanza – Riachuelo catchment basin in Argentina, or a robotised factory to design, manufacture and position tunnel segments using highly efficient robotic technology that integrates solutions for innovation, efficiency, circular economy, currently serving the railway lines being built in Sicily. In 2024, tunnelling began on the Naples-Bari HS line using hyperbaric excavation, considered a best practice at the European level. For the construction of part of the Casalnuovo tunnel on the Naples-Cancello stretch, excavations will be carried out by injecting compressed air to keep groundwater safely outside the work areas.
Another innovation comes in the form of the Force-Activated Coupling System (FACS), a pioneering segment assembly model capable of making the structure of hydraulic tunnels more secure. This innovation, designed and patented by Webuild, has been applied in the Snowy 2.0 project in Australia.

WEM (Webuild Equipment & Machinery)

In 2024, Webuild launched its WEM (Webuild Equipment & Machinery) project, rooted in the concepts of the circular economy and technological innovation in supply chains, launching its first TBM regeneration facility in Terni, Italy. In their ordinary life cycle, TBMs dig and build tunnels, only to be dismantled

and returned to the supplier. Webuild has now started a process at the Terni factory to regenerate used TBMs, becoming the first general contractor to invest in the idea of giving new life to these machines in a circular economy that guarantees project efficiency.

Digitalization

As a key component of the Group's innovation strategy, digitalization processes entail the development of innovative tools using artificial intelligence (AI) and the Internet of Things (IoT) to facilitate the processing of big data and making summarized and detailed outputs available in real time throughout the organization. Starting from 2022, the Tunnel WeView system, to assist management, monitor a project's production, safety and environmental aspects and its impact by the real-time collecting, processing, and viewing of operating, energy and environmental data, has been applied in the Snowy 2.0 project.

BIM & VDC

The development of Building Information Modeling (BIM) and Virtual Design and Construction (VDC) approaches, processes and tools allowed the company to implement innovative ways to foresee and optimize construction processes, relying on collaborative, multi-dimensional models shared across the different disciplines involved. In this scope, recent Research & Development activities include AI application to project data, construction *Big Data*, advanced construction simulations, and on-site virtual and Augmented Reality.

Innovative materials

Research on materials is aimed at improving structures' performance, operational efficiency while reducing costs and environmental impacts. In recent years such studies entailed the development of optimized concrete mixes, the development of advanced admixtures and the substitution of high emission cement with equivalent low-carbon materials. Main environmental improvements associated with such innovations include:
→ more than 220,000 tons of cement saved;
→ lower transport costs and associated environmental impacts;
→ more than 320,000 tons of CO_2 avoided.

Energy efficiency

The Group is investing increasing resources in innovating its energy-intensive processes both through specific projects such as the "Construction 4.0" electrical systems that allows to monitor work sites' electrical parameters and improve energy performances, and by replacing high-consumption processes with more eco-friendly ones. An example is the innovative high capacity conveyer belts developed in Tajikistan for the automated transportation of construction materials, that allows to increase transportation rates while avoiding the use of trucks, so reducing safety risks, fuel consumptions and emissions.

HSE innovation

Webuild, with the aim of continuously improving its safety performance, is also investing in Health and Safety innovation. New technologies and devices, currently already present in other sectors, are also being applied in the construction sector, allowing an increase in security levels, also through a greater perception and awareness of risks. In Genoa, for example, new technologies and devices, currently already present in other sectors, are also being applied in the construction sector, allowing an increase in security levels, also through a greater perception and awareness of risks. On the “San Giorgio” Bridge construction site as well as the Genoa – Milan HS/HC site, integrated Smart Safety systems were tried out and tested in the human-machine interaction, hazardous area perimeter, and suspended load fields.

Our key numbers for innovation

€165 mln

investments in innovation 2019–2023

>4,000

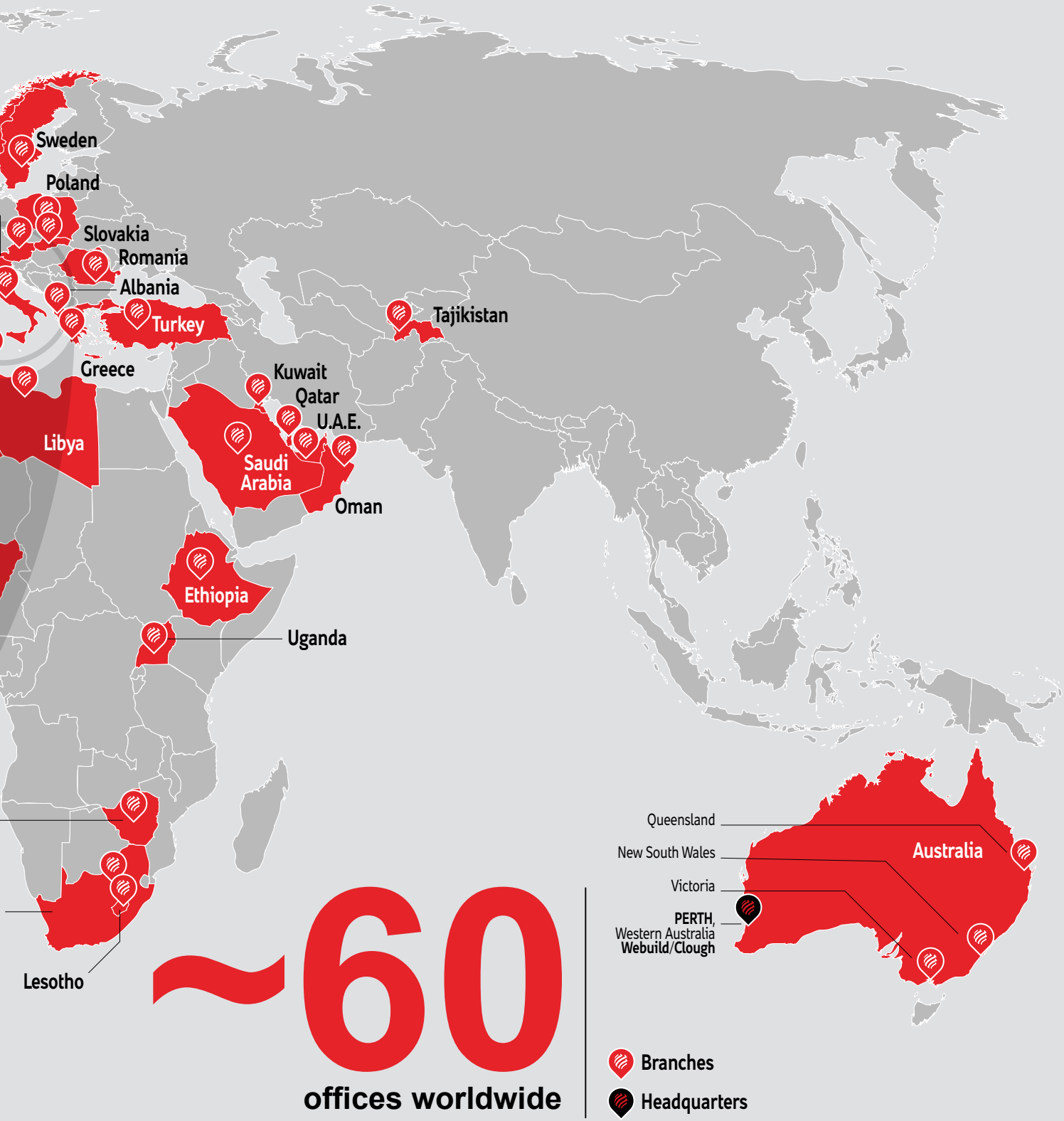
average annual employees involved in innovation and R&D activities in 2023

≈480

engineers worldwide committed to ideating, designing and implementing innovative solutions

07 LANDSCAPE

Global footprint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