

# STADIUMS

**GREEN BUILDINGS  
& OTHER**

**H1 2024**

**webuild** 



# STADIUMS

H1 2024

webuild 



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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.

# 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

---

# €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\*

---





# 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).

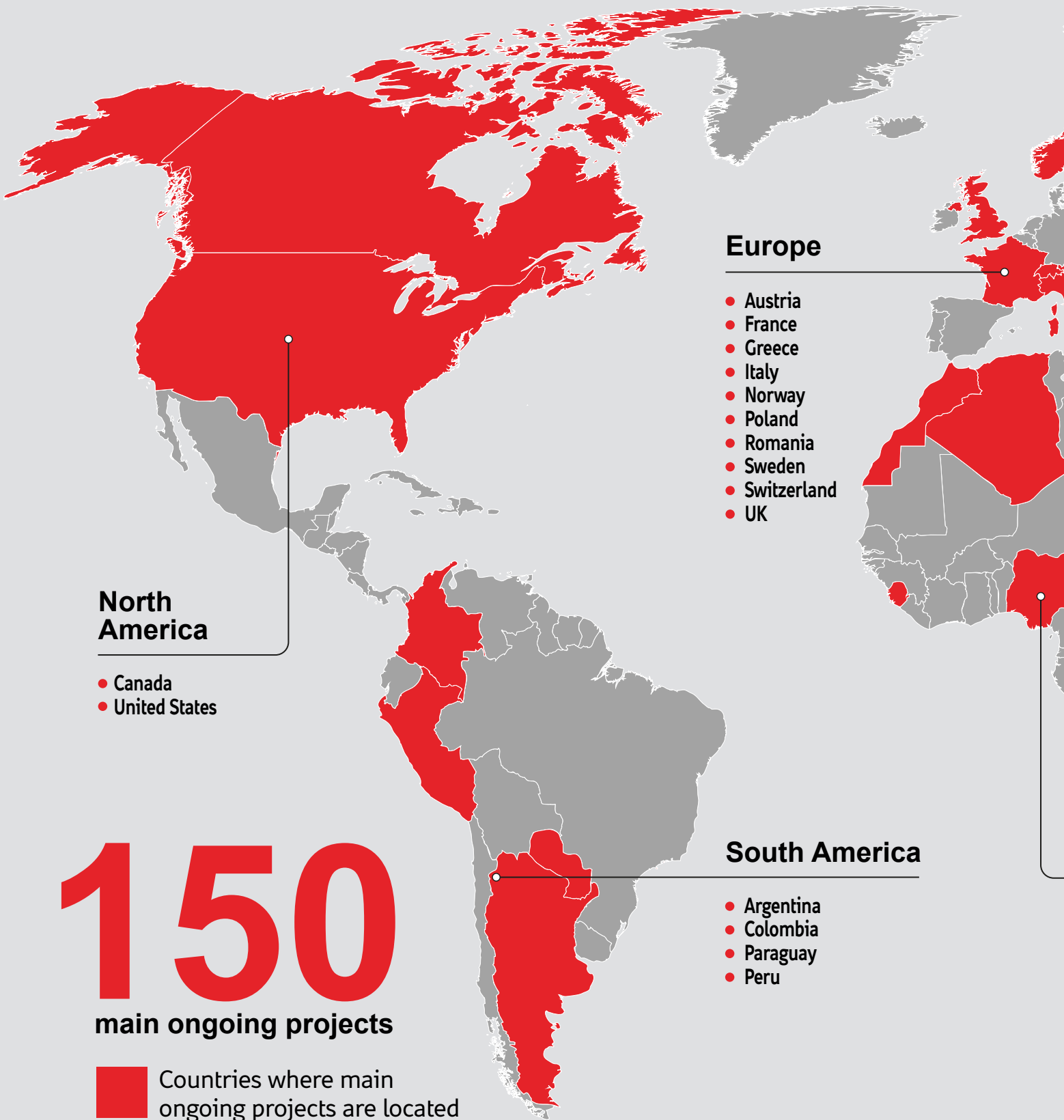


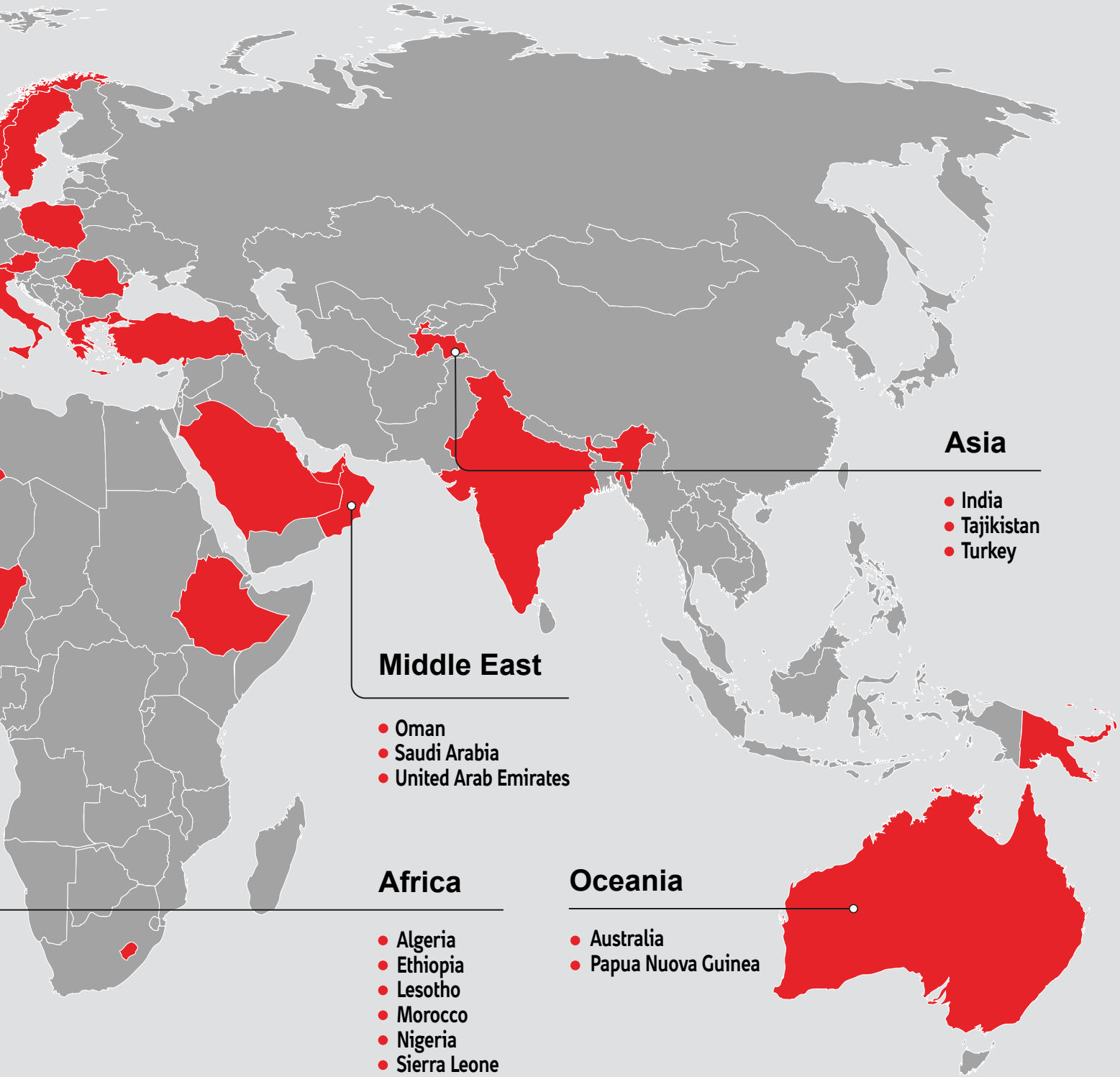
# 04

## FOOTPRINT



# Global footprint









A construction worker wearing a red hard hat and a high-visibility yellow safety vest is working on a large, white, perforated metal structure. The worker is using a tool to work on a hole in the structure. The background shows a construction site with orange safety fencing.

# 05

Build  
**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

---

**3,408 km**

of tunnels

---

**82,533 km**

of roads and motorways

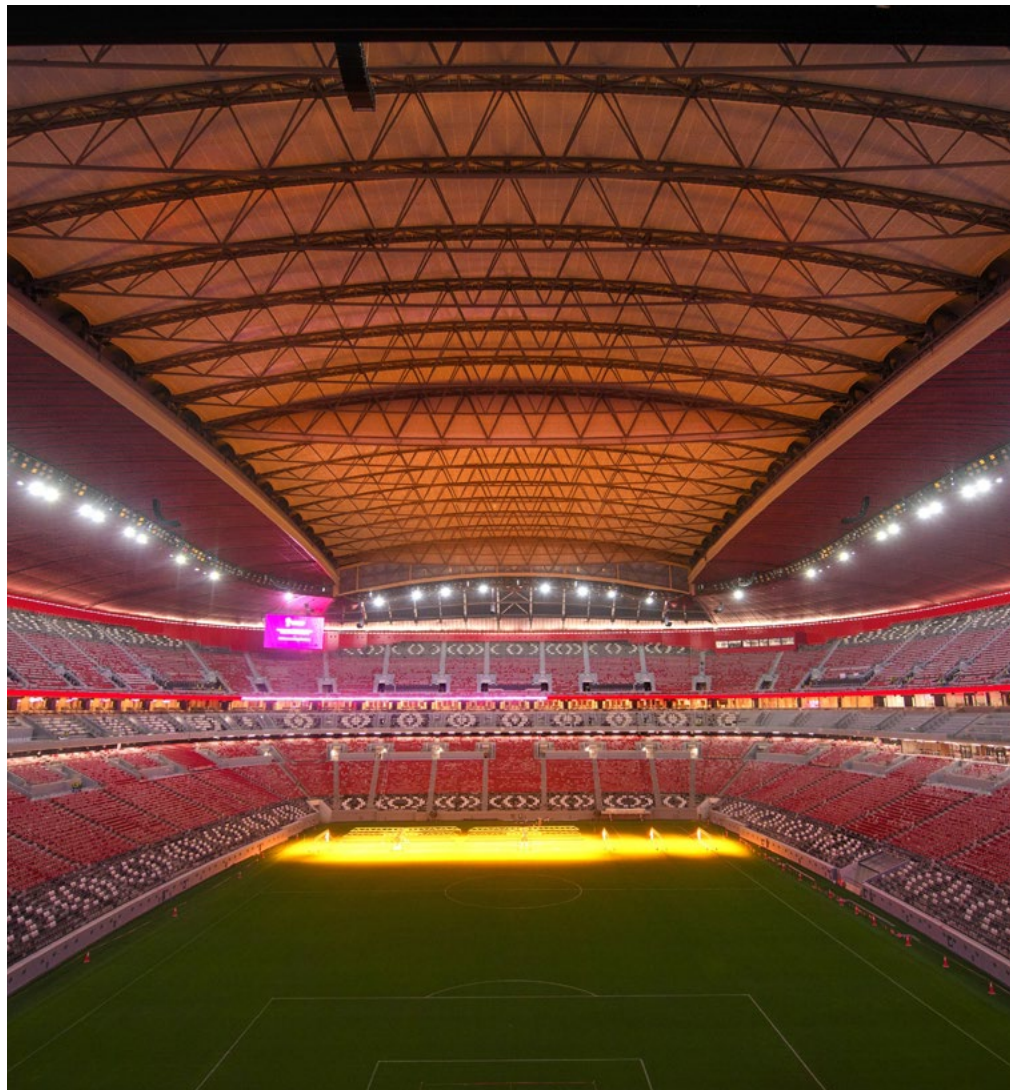
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**52,900 MW**

of installed capacity

**BUSINESS**

# GREEN BUILDINGS & OTHER



- Civil and industrial buildings
- Stadiums
- Hospitals
- Airports
- Projects for the Energy Transition

Green Buildings & Other: building the future sustainably. This is the vision of Webuild, a group which has spent years investing in environmentally responsible design to make cities everywhere more liveable. Faced with challenges such as growing urbanisation and pollution, Webuild responds with civil, industrial, commercial, cultural, leisure and religious buildings designed to reduce their environmental footprint or facilitate the energy transition.

Webuild has constructed more than 200 healthcare facilities, over 80 airport infrastructures, and countless other green projects around the world. These are iconic projects which, in many cases, have contributed to the regeneration of their local areas, expertly combining aesthetics with engineering, functionality and innovation with sustainability.

Some of the group's most notable flagship projects include the Stavros Niarchos Foundation Cultural Centre in Athens, the Al-Bayt Stadium outside Doha, the new ENI Management Centre in San Donato Milanese, the Hospital dell'Angelo in Venice-Mestre, and the Kingdom Centre in Riyadh. These projects - often made possible thanks to partnerships with internationally renowned architecture firms - are guided by the most up-to-date

sustainability criteria and stand out due to their innovative nature.

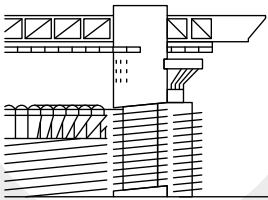
Adopting certification schemes defined by their green characteristics, such as LEED (Leadership in Energy and Environmental Design) – one of the most widely recognised sustainability assessment systems in the world – allows us to, for example, reduce the building's environmental footprint during construction by using raw materials with a low environmental impact and optimise production and logistical processes, as well as maximising the building's environmental performance over the course of its service life, which translates to lower energy and water consumption and reduced emissions.


The environmental benefits of using eco-design and construction systems are tangible: a number of official studies show that on average, a green building requires between 15% and 40% less energy than a traditionally constructed counterpart, which helps to reduce the emission of climate-changing gases and, consequently, its environmental impact.


# Webuild stadiums worldwide


## 9 stadiums in 3 continents

**1** Milan  
**"G. Meazza" Stadium**  
ITALY

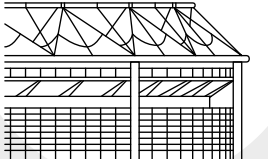



 **1987-1990**


 **50,500m<sup>3</sup>**


 **85,000**

**2** Rome  
**"Olympic" Stadium**  
ITALY

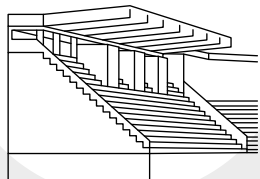



 **1987-1990**


 **89,950m<sup>3</sup>**

 **82,000**

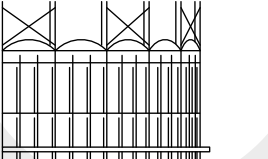
**3** L'Aquila  
**Rugby Stadium**  
ITALY





 **1998-2000**


 **9,200**

**4** Bucharest  
**Lia Manoliu National Stadium**  
ROMANIA



 **2007-2011**

 **80,000m<sup>3</sup>**

 **60,120**

 **Construction period**

 **Construction volume (m<sup>3</sup>)**

 **Stadium capacity (spectators)**

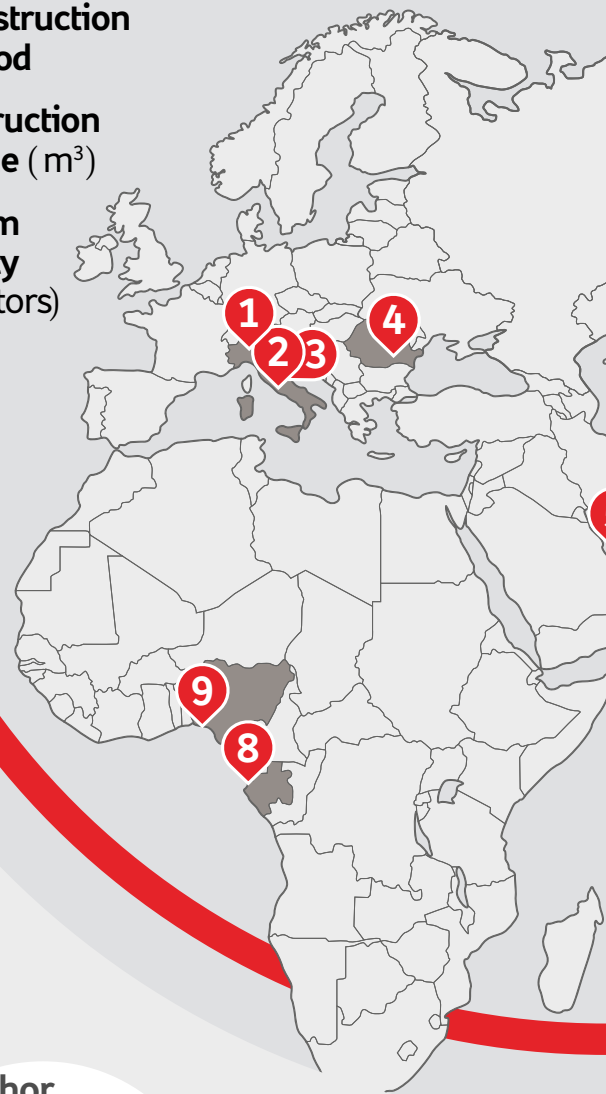
**5** Al Khor  
**Al Bayt Sports complex**  
QATAR

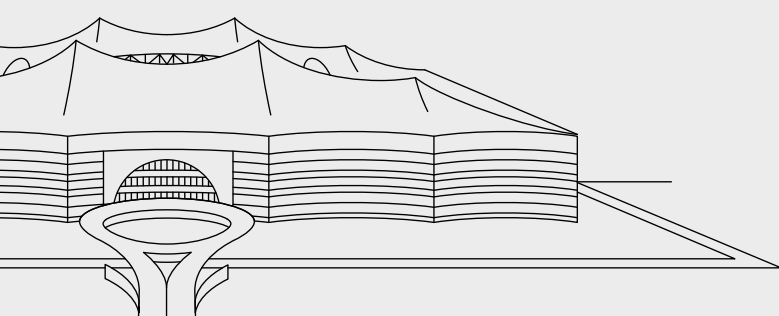


 **2015-2021**

 **283,919m<sup>3</sup>**

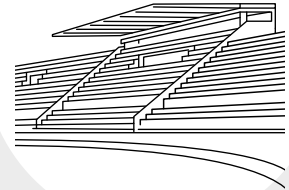
 **60,000**





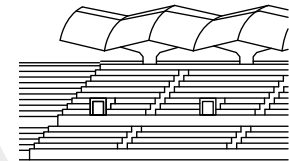
Lagos  
**National Stadium** **9**  
NIGERIA

1972   
45,000 



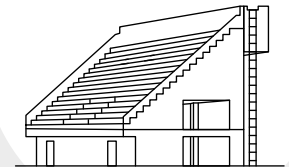
Libreville  
**Omnisport Stadium** **8**  
GABON

1980   
30,000 



Songkla  
**Sport complex** **7**  
THAILAND

1996-1998   
45,000m<sup>3</sup>   
20,000 



Chiang Mai  
**Sport complex** **6**  
THAILAND

1993-1995   
55,000m<sup>3</sup>   
20,000 





## Al-Bayt Stadium, Al Khor, Doha

**QATAR**

The hyper-technological sustainable desert "tent", one of the largest and most innovative sports facilities worldwide

A tent in the desert capable of accommodating 60,000 spectators. This is the vision that inspired the construction of the Al-Bayt stadium, the high-tech facility that hosted the 2022 FIFA World Cup built 40-km north of Doha, one of the largest and most innovative sports facilities in the world and a reference model for the sector, due to the construction techniques adopted and the ability to combine local cultural heritage, sustainability, and environmental protection. Designed to accommodate both recreational and commercial activities, the stadium resembles a Bedouin tent, the symbol of Qatar's welcoming culture and hospitality. The distinctive roof prevents sound leakage amplifying the experience. Many of the solutions used, such as the installation of water-saving components, make it a champion of sustainability. In 2020, it obtained two GSAS (Design & Build and Construction Management) certifications with 5-star ratings, exceeding the requirements set by FIFA.





#### KPI TECNICI / DI PRODUZIONE

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**286,000 m<sup>3</sup>**

total concrete volume

**52,000 t**

reinforcing steel

**30,000 t**

total steel for roofing

#### KPI DI SOSTENIBILITÀ

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Use of low impact building materials

Low energy consumption due to tent-shaped design

“Class A” Rating by GSAS (Global Sustainability Assessment System)



## Stade de Soccer de Montréal

CANADA

The LEED Gold certified, eco-sustainable, innovative football complex featuring a characteristic wooden roof

The complex was completed in 2015. Built with innovation and sustainability in mind, it was designed to be used even during the cold Canadian winters, with its 2 football fields (an outdoor one and a covered indoor one). Designed by Saucier+Perrotte architectes and HCMA architects, it stands on the edge of a former quarry, the latter evoking its shape and materials. The energy-efficient wooden structure also with recycled materials, is among the sports facilities with the highest quality standards. An imposing single-span wooden roof cantilevers over the entrance, bending towards the outdoor football field for which it becomes a grandstand. The building is 110 m long, 78 m wide, and is 18 m high. It spreads over 2 levels and houses a football field, public spaces, and offices. The roof has 13 beams that are 69 m long, 50 cm wide, 4 m and high, each weighing 77 t, supported by steel columns. The building is LEED Gold certified, due to its sustainability standards.



KPI TECNICI / DI PRODUZIONE

---

**~37,400 m<sup>2</sup>**

total area

**~11,000 m<sup>2</sup>**

footprint area of the building

**~12,600 m<sup>2</sup>**

gross floor area

KPI DI SOSTENIBILITÀ

---

**750**

seats (indoor field)

**600**

seats (outdoor field)



## Lia Manoliu National Arena, Bucarest

ROMANIA

One of the most important, modern stadiums in Romania

The stadium is one of the most important, modern stadiums in Romania. Resembling an arena stadium, due to its characteristics, it has been classified by UEFA in the 4th Category ("Elite"), the highest. On May 9, 2012, it hosted the UEFA Europa League final. The project involved demolishing the existing stadium and building a new arena with a capacity of more than 60,000 spectators, with the possibility of reaching 63,000. The stadium features state-of-the-art audio and video systems and a convertible-style transparent sheet roof that can be opened or closed in 15 minutes.

The structure is 23 m high and is divided into 6 levels. The 3 underground levels include spaces for athletes, coaches, referees and judges, administrative spaces, press rooms, conference rooms and parking spaces for 2,100 vehicles. The upper levels include 42 VIP skyboxes, an entrance lounge, restaurants, and restrooms. The total width of the main grandstand is approximately 55m.

### KPI TECNICI / DI PRODUZIONE

**24,400 m<sup>2</sup>**

built-up area

**44,800 m<sup>2</sup>**

horizontal and vertical roofing  
area

**10,700 m<sup>2</sup>**

of glass roofing area

### KPI DI SOSTENIBILITÀ

**+55,200**

seats

**63,000**

spectators (maximum capacity)



## Chiang Mai Sports Complex

THAILAND

A complex covering 392,000 square meters

The Chiang Mai sports complex, built in the north-east area of the city, covers a total area of 392,000 square meters. The facility includes a 20,000-seat main stadium, equipped with a football field and an 8-lane athletics track enabled for international competitions. The roof consists of 4,700 square meters of metal sheeting resting on 26 prestressed concrete beams ranging in length from 25.4 m to 30 m. The structure is completed with a football field for training, equipped with a 6-lane athletics track (also enabled for national and international competitions), a 50-m-long Olympic swimming pool, with a capacity of 2,000 spectators, a swimming pool with a platform for dives up to 10 m, 2 indoor gyms with a capacity of 5,000 and 3,000 seats, 12 tennis courts, plus a central court with stands for 1,000 spectators.

### KPI TECNICI / DI PRODUZIONE

**55,000 m<sup>3</sup>**

concrete used

**400,000 m<sup>3</sup>**

excavation volume

**273,000 m<sup>3</sup>**

volume of embankments

### KPI DI SOSTENIBILITÀ

**20,000**

seats main stadium capacity

**5,000**

spectators main gym capacity



## San Siro Stadium, Milan

ITALY

The 85,000 all-seated "Football Temple"

Milan's San Siro, currently Italy's largest stadium, is an architectural masterpiece, with its red beams and seemingly suspended roof that give it its distinctive look. Named in 1980 in memory of the footballer Giuseppe Meazza, the San Siro stadium is known by football fans as the "Football Temple". Its construction dates back to 1925, with the construction of the first 4 straight grandstands. In 1935, a first expansion operation brought its capacity from 35,000 to 55,000 seats. In 1955, a new structural intervention brought the stadium's capacity to 100,000 seats, later reduced to 85,000 for safety reasons. Webuild has carried out its last major renovation, a radical transformation carried out in 2 years in anticipation of the 1990 FIFA World Cup. The structure currently has 85,000 seats, all seated, featuring a transparent roof that can be extended to the entire stadium (excluding the playing field).

### KPI TECNICI / DI PRODUZIONE

**13,400 t**

metal carpentry

**6,000 t**

reinforcing steel

### KPI DI SOSTENIBILITÀ

**85,000**

seats (capacity)



## The "Stadio Olimpico", Rome

ITALY

A reference sports facility on the European scene

Completed in 1953, the Stadio Olimpico is the Italian capital's stadium. For this structure, Webuild oversaw a substantial renovation carried out in just under 3 years for the 1990 World Cup. The stadium has been totally rebuilt in reinforced concrete, its curves brought closer to the field, and the entire work has been covered with a white tensile structure. When works were completed, in 1990, the New Stadio Olimpico Stadium was modern, functional and impressive in design, with a capacity that increased from 54,000 to over 82,000 spectators, making it one of the world's top 15 stadiums by capacity. Today, the Stadio Olimpico is a reference sports facility on the European scene, not only for football, but also for athletics and rugby, the latter sport choosing it as the reference stadium for the Six Nations competition, the most prestigious rugby trophy in the Old Continent.

### KPI TECNICI / DI PRODUZIONE

**5,700 t**

steel used

**28,000 m<sup>2</sup>**

concrete and precast used

**42,000 m<sup>2</sup>**

total area of the new roof

### KPI DI SOSTENIBILITÀ

**+82,000**

seats maximum capacity





# OGG

## 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 technique around

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<sub>2</sub> 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

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# >4,000

engineers worldwide committed to ideating, designing and implementing innovative solution

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# ≈480

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

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A close-up photograph of a construction worker on a steel structure. The worker is wearing a red t-shirt, dark pants, and white work gloves. They are holding onto a large steel beam. A safety net made of metal mesh is visible in the background. The scene is brightly lit, suggesting a sunny day.

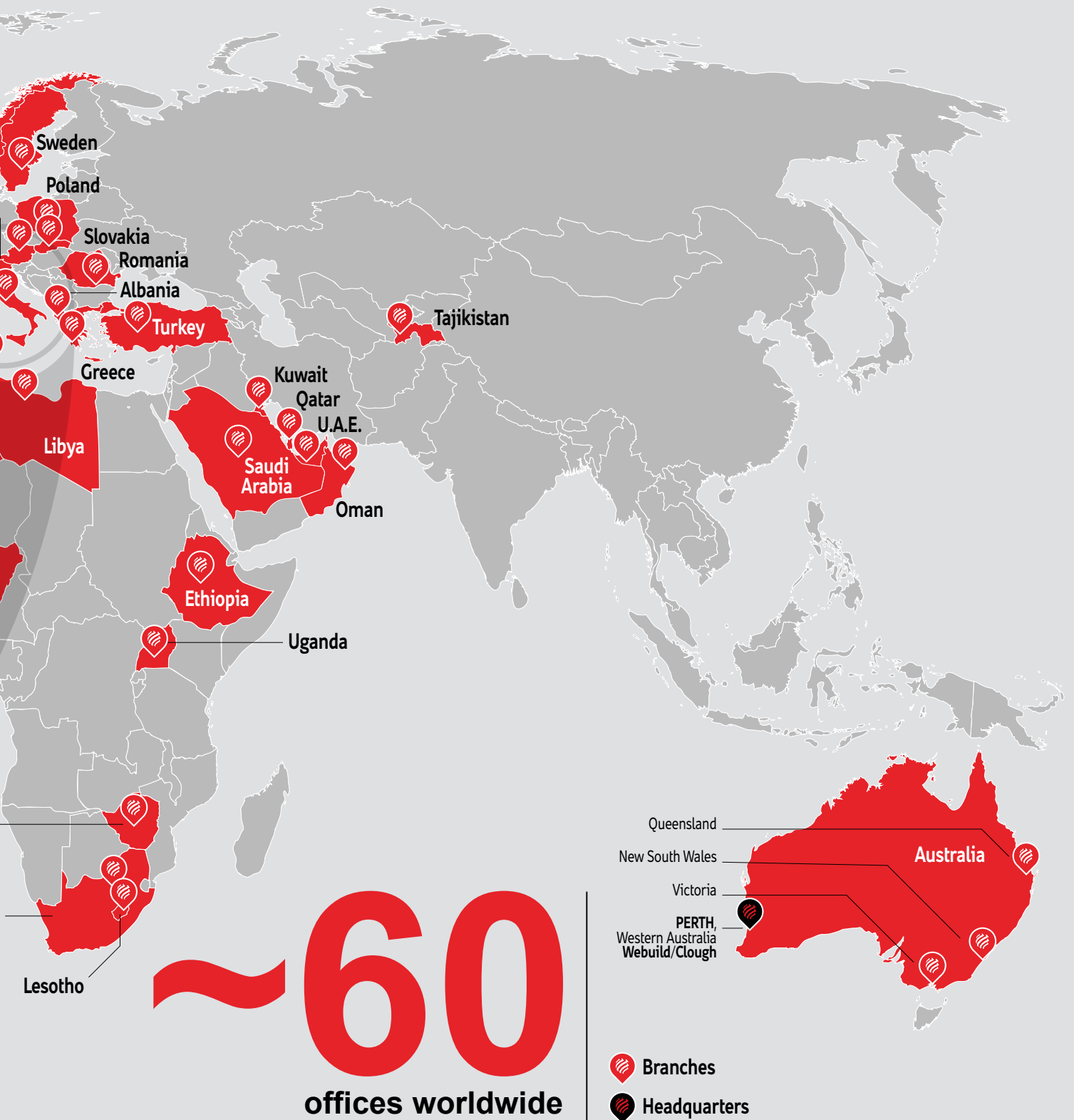
07

LANDSCAPE

# Global footprint







**Webuild S.p.A.**

www.webuildgroup.com

www.webuildvalue.com

**Project coordination**

Webuild Corporate Identity, Communication and Institutional Affairs

**Credits**

Webuild Image Library

**Photos by**

Moreno Maggi for Webuild

Edoardo Montaina for Webuild

Filippo Vinardi for Webuild

**Graphic concept**

Leftloft, Milan

**Data Visualization and Augmented Reality**

Viewtoo, Milan

**Edition**

November 2024



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