

Complexity solved by Innovation.

A trusted partner in shaping complex infrastructures.

Built on a foundation of deep technical excellence, we deliver innovative, robust and optimized solutions for linear infrastructures — combining engineering rigor with a strong commitment towards sustainability, resilience and long-term value for our Clients.

dip: brings together senior engineers with decades of combined experience on major underground, structural and geotechnical projects in Italy and abroad. We work as an extension of our Clients' teams, taking ownership of the hardest technical problems — from the first site investigation to the last as-built drawing.

Independent in judgement, integrated in delivery: every solution we design must be buildable, measurable and defensible — in front of contractors, lenders and authorities alike.



Why we exist.

ABOUT US

dip: is an independent engineering company specialized in the design of complex infrastructures — tunnels, underground works, special foundations and heavy civil structures. Founded by senior engineers with international track records on major railway, metro and high-speed projects across Europe, the Middle East and the Americas, we combine design authority with genuine construction experience: our solutions are conceived to be built, not just drawn.

OUR MISSION

Thanks to our highly skilled technical team and a strong focus on research and development, we cultivate a deep and enduring relationship with our Clients throughout the construction industry — delivering engineering that stands up to the ground, to the schedule and to time itself.

OUR VISION

To become the reference design partner for complex infrastructures in Europe: the team Clients call when the ground is difficult, the deadline is fixed and the standard answer is not good enough.

What we do.

Six integrated service lines, one engineering culture: rigorous, construction-aware and Client-focused.

01 **Research & innovation**

Machine learning and AI turned into tangible engineering value.

02 **Tender support**

Value-driven optimization and alternative solutions for winning bids.

03 **Geotechnical & structural engineering**

Tunnelling, bridges, retaining structures, stability works and monitoring.

04 **Special foundations**

Jet grouting, compensation grouting, injections, deep soil mixing.

05 **Client-oriented services**

Flexible technical support, in our offices or at the Client's premises.

06 **Turnkey projects**

Design and construction combined into a single seamless commitment.



01

Research & innovation

Leveraging proprietary tools that enable the systematic adoption of machine learning and artificial intelligence, we convert technological innovation into tangible business value and a sustainable competitive advantage.

Our ongoing digital research directly enhances predictive accuracy, optimizes material use, and delivers smarter, safer engineering solutions for modern construction projects.

FOCUS AREAS

- Machine learning on geotechnical and monitoring data
- Parametric design and automated optimization
- Digital twins of ground-structure systems
- R&D partnerships with universities and Clients

02

Tender support

We act as a decisive partner during the bidding phase, helping our Clients enhance the competitiveness of their proposals through value-driven design optimization and the development of technically sound alternative solutions.

This strategic assistance minimizes estimated construction costs, reduces technical risks, and significantly increases your chances of winning profitable contract awards.

WHAT WE BRING

- Value engineering and design optimization
- Alternative technical solutions and variant design
- Quantity verification and risk-based pricing support
- Technical narrative for scoring-driven proposals



03

Geotechnical & structural engineering

The partner of choice for complex geotechnical and structural challenges, operating with absolute dedication. Combining engineering excellence with extensive on-site expertise, we deliver effective, buildable and tailored solutions for demanding projects — tunnelling, bridges, retaining structures, earth stability works, buildings and monitoring systems.



Our approach integrates advanced design with practical execution to successfully overcome difficult geological conditions. We consistently ensure long-term structural reliability, superior project safety and uncompromised technical quality for every Client.

CAPABILITIES

- Conventional and mechanized tunnelling design
- Bridges, viaducts and underground structures
- Retaining structures and deep excavations
- Slope stability and earth works
- Geotechnical and structural monitoring systems

04

Special foundations

Thanks to our experience, we select and apply the most appropriate ground improvement technique — jet grouting, compensation grouting, low-pressure injections, deep soil mixing and beyond.

This comprehensive expertise allows us to stabilize unstable soil conditions efficiently, significantly enhance load-bearing capacity, prevent critical structural settlement, and ensure long-term foundation safety.

COMPENSATION GROUTING — SETTLEMENT CONTROL UNDER EXISTING STRUCTURES



05

Client-oriented services

Flexible, Client-focused support delivered where it is needed the most: from our own offices or directly on site, at the Client's premises.

This agile operational approach guarantees close collaboration, rapid problem-solving, and complete alignment with your internal team throughout the project.

HOW WE WORK

- Resident engineering and site supervision
- Owner's engineer and independent design checking
- On-call technical support during construction
- Secondment of senior specialists to Client teams

06

Turnkey projects

We take care of your project from concept to completion. Combining design and construction capabilities, we deploy experienced on-site teams to deliver complex projects as a seamless turnkey solution.

This integrated approach ensures single-point responsibility, optimizes project timelines, minimizes financial risks, and guarantees that the final infrastructure fully meets your technical and operational requirements.

WHAT WE DELIVER

- Design-and-build foundation and ground improvement packages
- Integrated planning: method, plant, logistics and programme
- Experienced site management and specialized crews
- Single-point quality, safety and performance accountability



Emiliano Nuzzo

MANAGING DIRECTOR · TECHNICAL DIRECTOR
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Emiliano is a Civil Engineer specialized in mechanized tunnelling and transportation. He has a deep understanding of all geotechnical aspects, familiarity with structural design, soil-structure interaction and waterproofing systems, and the ability to handle complex engineering studies and evaluate innovative construction techniques.

With proven experience in managing large-scale underground projects from design to completion, he coordinates multidisciplinary teams and is skilled in risk assessment, cost control and planning. He inspires confidence in engineers and site personnel alike, promoting a culture of safety, innovation and continuous improvement — with strong interpersonal skills, able to mediate between Clients, contractors and internal teams.

EDUCATION

- Post-graduate Master in Geotechnical Design, "La Sapienza" University of Rome
- M.Sc. in Civil Engineering, University of Naples

BACKGROUND

- Member of the Order of Engineers of the Province of Caserta, n. 3906
- Member of the Order of Engineers of the Province of Łódź (Poland), n. 002/24

Track record

MAY 2025 — JAN 2026 · UAE	Abu Dhabi–Dubai High Speed Railway, Tender D&B Project Director (on site, Dubai) · WeBuild, TriStar / Limak, Doğuş, Ozcar 150 km HSR line at 350 km/h connecting Abu Dhabi to Dubai in 30 minutes, five stations.
2019 — 2026 · ITALY	Brenner Base Tunnel, southern section "Mules 2–3" Technical Director · JV Astaldi / BBT SE 64 km twin-tube system between Innsbruck and Fortezza — the longest underground railway stretch in the world.
JAN 2026 — MAY 2026 · ITALY	Fortezza–Ponte Gardena railway line Technical Director · WeBuild, Implenla 22.5 km high-capacity extension of the Brenner Base Tunnel on the TEN-T corridor.
OCT 2024 — FEB 2026 · CANADA	Scarborough Subway Extension, Toronto TBM Expert · Metrolinx Excavation method expertise and cake mix design for hyperbaric interventions.
OCT 2024 — JAN 2026 · SWEDEN	Kolmårdsentreprenaden HSR Technical Director · Trafikverket 15 km high-speed stretch including an 8 km double-tube tunnel.
2019 — 2026 · SWEDEN	E04 Haga Station, West Link Technical Director · ANG Haga (Gülermak / Astaldi / NRC Group) Design consultancy for monitoring, temporary and permanent structures.
2019 — 2020 · SWEDEN	E03 Kvarnberget, West Link Gothenburg Head of Geotechnics · ANG Haga (on site) 8 km new railway link through Gothenburg, 6.6 km in tunnel.
2017 — MAY 2026 · POLAND	Łódź Railway Node Project Manager · Energopol Szczecin / PBDiM 7.5 km TBM railway tunnels (Ø 8.8 / 13.1 m) beneath the city; project value €398 M.
2017 — MAY 2026 · FRANCE	Paris Metro, Line 14 South extension (Lot GC04) Head of Geotechnics · Salini Impregilo / NGE 4.1 km TBM tunnel from Pont de Rungis to Orly airport.
2016 — 2018 · ITALY	Circumetnea underground railway, Catania Tunnel Designer · CMC di Ravenna Detailed design of EPB TBM tunnels (Ø 10.3 m), Nesima and Stesicoro–Airport lots.
2015 — 2016 · RUSSIA	Kozhukhovskaya Line, Moscow Metro Deputy Project Manager & Head of Geotechnics · OAO Mosinzhproekt
2014 — 2015 · BRAZIL	São Paulo Metro, Line 5 Project Engineer · Companhia do Metropolitano de São Paulo
2013 — 2014 · INDIA	Bangalore Metro, Line UG-1 Project Engineer · Coastal LTD / BMRCL

Marco Bazzani

STRUCTURAL & PROJECT ENGINEER

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Marco is a structural engineer with extensive experience in design and computation for a wide range of engineering structures, from the tender phase through construction and completion. Most of his career has been spent on Design & Build infrastructural projects, including several years in the Nordic area (Norway, Sweden and Denmark).

In recent years he has worked as lead structural engineer on several detailed designs for tunnels built with mechanized excavation: underground structures, segmental lining, TBM, SFRC and model-based design are his daily tools.

EDUCATION

- M.Sc. in Civil Engineering, University of Brescia (2014)
- B.Sc. in Civil Engineering, University of Brescia (2012) · Erasmus, Universidad Politécnica de Madrid (2011)

BACKGROUND

- Member of the Order of Engineers of the Province of Brescia, n. A 6170
- Languages: Italian (native) · English (C2) · Spanish (C2)

Track record

2023 — 2026 · ITALY	Palermo–Catania HSR, Lot 4a Caltanissetta Xirbi–Enna Lead Structural Engineer · Webuild, Ghella, Tunnelpro 27 km of new line with ~3 km of viaducts and 4 tunnels totalling 20 km.
2024 — 2026 · ITALY	Palermo–Catania HSR, Lot 4b Nuova Enna–Dittaino Lead Structural Engineer · Webuild, Pizzarotti 15 km of new high-speed line: 3 tunnels (8.5 km) and 5 viaducts (~2 km).
2023 — 2026 · ITALY	Palermo–Catania HSR, Lot 3 Lercara–Caltanissetta Xirbi Lead Structural Engineer · Webuild, Ghella, Tunnelpro 47 km of new line with ~10 km of viaducts and 8 natural tunnels totalling 21 km.
2024 — 2026 · ITALY	Messina–Catania, Giampilieri–Fiumefreddo doubling Lead Structural Engineer · Webuild, Pizzarotti 13.9 km of new double track, underground Taormina station, bored tunnels of 3.3 and 6.1 km.
2024 — 2026 · ITALY	Messina–Catania, Lot 2 Taormina–Giampilieri Lead Structural Engineer · Webuild, Pizzarotti 42 km of double track on a new alignment, ~85% underground, with 7 tunnels.
2024 — 2025 · ITALY	Salerno–Reggio Calabria HSR, Lot 1a Battipaglia–Romagnano Lead Structural Engineer · Webuild, Pizzarotti 35 km at 300 km/h: 18 km underground, 20 tunnels (8 by TBM) and 19 viaducts.
2024 · ITALY / FRANCE	Turin–Lyon new line (TELT), CO 3–4 Independent Controller · TELT 57.5 km cross-border base tunnel, ~160 km of total excavation, overburden up to 2,000 m.
2022 — 2024 · ITALY	Fortezza–Ponte Gardena railway line Lead Structural Engineer · Webuild, Implenia 22.5 km high-capacity line extending the Brenner Base Tunnel, almost entirely underground.
2023 — 2024 · ITALY	Trento ring road Lead Structural Engineer · Webuild, Ghella, Collini 11 km double-tube railway tunnel and connections to the existing line.
2021 — 2024 · NORWAY	VAV E6 Rentvann, Oslo Lead Structural & Project Engineer · AF Gruppen, Ghella Drinking-water tunnels: 11 km by TBM and 7 km by drill & blast.
2019 — 2023 · NORWAY	Vestfold Line, Nykirke–Barkåker Lead Structural & Project Engineer · Webuild, Pizzarotti 13.6 km double-track railway with rock tunnels, bridges and a new station at Skoppum.
2019 — 2022 · POLAND	Świnoujście road tunnel under the Świna river Structural Engineer · Gulermak, Porr 1.44 km tunnel by Ø 13.46 m slurry TBM, with ramps and cut & cover approaches.
2019 — 2020 · SWEDEN	E04 Haga, West Link Gothenburg Structural Engineer · Gulermak, Astaldi Rock tunnel and new station largely excavated in clay.
2017 — 2019 · NORWAY	Follo Line, Oslo S Lead Structural & Project Engineer · Bane Nor 625 m cut & cover tunnel and 4 technical buildings in quick clay, with jet grouting.



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