Sustainability Report 2023

GHELLA

1894

GHELLA

1894

130TH
ANNIVERSARY

New Zealand, Central Interceptor
Photo by Giulia Parlato from the photographic project "Nuove avventure sotterranee"

Puketutu Island – known as Te Motu a Hiaroa to Mana Whenua – is a volcanic island off the coast of south-west Auckland and is sacred to Māori. In the 1950's, thousands of tonnes of scoria and basalt was removed for construction, including the expansion of the nearby Auckland Airport. Since 2012, Watercare has been rehabilitating the island by filling the former quarry with treated biosolids from the Māngere Wastewater Treatment Plant, as well as tunnel spoil and construction material from the Central Interceptor project.

Highlights 2023

36.76

tCO_{2eq} / Revenue in millions of euros

scope 1 and 2 emissions -> - 45% vs baseline 2021

3.32

LTIFR

Safety Index LTIFR -> -39% vs baseline 2021

0.96

Ml/ Revenue in millions of Euros

water withdrawals -> - 35% vs baseline 2021

~ 1.2

billion euros

of economic value generated

94%

of recovered non-hazardous construction and demolition waste

90%

procurement costs to local suppliers

87%

of non-contaminated excavated material reused on-site or off-site

18.7%

women in management roles -> +12% vs baseline 2021

81

GWh produced by photovoltaic

93%

economic value distributed to external stakeholders

Letter to our stakeholders

Growth, sustainability and the creation of shared value to build a brighter tomorrow.

2023 was a year of extraordinary growth and success for Ghella. Against a backdrop of global uncertainty, ***we strengthened our position*** in the construction sector, cementing our reputation as a trusted and dependable partner for significant projects and key strategic initiatives. Through our commitment to sustainability and pioneering ideas, we not only added ***value for all stakeholders*** but also contributed towards a more sustainable and greener future.

In Italy, we have significantly improved our positioning, contributing to key projects in the National Recovery and Resilience Plan (PNRR). Internationally, our deliberate strategy of selectivity and risk mitigation has resulted in securing new contracts in Australia and France, thereby reinforcing our global presence.

Our business strategy is inherently anchored in sustainable practices. We firmly believe that enduring success hinges upon ***environmental preservation*** and the ***welfare of the communities*** in which we operate. For this reason, we wholeheartedly embrace the Corporate Sustainability Reporting Directive (CSRD), demonstrating our proactive commitment to early compliance with deadlines for meeting the new standards.

All our activities align seamlessly with the ***European Taxonomy***, actively supporting environmental objectives. Whether it is our sustainable mobility initiatives, water infrastructure developments or photovoltaic plant installations, each initiative underscores ***our unwavering commitment*** to paving the way towards a ***decarbonised future***.

By 2023, our operations yielded a total economic value of ***1.1 billion euros***, ***benefiting a variety of stakeholders*** including employees, suppliers, government bodies, and local communities. We firmly stand by the idea that as a business grows, so should the development of the local area.

Recognising our business's environmental footprint, we are dedicated to reducing greenhouse gas emissions by 25% by 2030. In alignment with our commitment to the circular economy, we prioritised the use of excavated land and recycled nearly all construction and demolition waste in 2023.

The ***health*** and ***safety*** of our personnel is ***of utmost importance***. Through our renewed and enduring commitment to fostering a collective safety culture at construction sites, we significantly reduced the number of accidents in 2023.

Our sustainability efforts have garnered significant interest from major financial institutions. In 2023, we secured a "sustainability-linked loan" to support our investment plan for the refurbishing and enhancing of our photovoltaic plants. This recognition underscores the legitimacy of our commitment to sustainable finance.

Looking ahead, Ghella embraces the future with ***confidence***, ***optimism*** and shared pride, as we celebrate our 130th anniversary. Our unwavering commitment to ***innovation***, ***sustainability***, and ***expansion*** aims to generate value for all stakeholders and shape a better future for generations to come. I extend my heartfelt thanks to all who have been part of this journey and reaffirm ***our promise to build a brighter and more sustainable future***.

Enrico Ghella,
Chairman and Chief Executive Officer

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GHELLA

1894

Italy, Naples - Bari
Photo by Domingo Milella from the photographic project "Nuove avventure sotterranee"

Our company


Australia, Sydney
Sydney Metro - Western Sydney Airport

ONGOING PROJECTS

Brenner, Turin, Trento, Lyon - Turin, Salerno - Reggio Calabria, Naples - Bari, Palermo - Catania
ITALY — 12

Sydney, Brisbane, Melbourne
AUSTRALIA — 05

Buenos Aires
ARGENTINA — 01

São Paolo
BRAZIL — 01

Toronto, Vancouver
CANADA — 02

Lyon - Turin
FRANCE — 01

Auckland
NEW ZEALAND — 01

Oslo
NORWAY — 01

Hanoi
VIETNAM — 01

With a history spanning **over 150 years** in tunnelling, we founded our company in 1894, embodying our enduring **spirit of exploration**. Today, we are proud to be recognised as a major global force in the construction of **large-scale public projects**.

With expertise in underground excavation, spanning over **five generations**, we have completed over 190 tunnels, connecting more than 1,000 km of **metros**, **railways**, **motorways**, and **hydraulic works**.

Our commitment is rooted in a business model that prioritises **creating a better world for future generations**.

Our active presence in the **renewable energy sector** is marked by our successful execution of strategic **photovoltaic** and **hydropower projects** across Italy, Central America, and the Middle East.

Our corporate philosophy prioritises the well-being of society. We strive to enhance communication, foster freedom of movement, lessen environmental impact, and optimise the use of natural resources.

We build to the **highest standards of quality, innovation, and sustainability**. To achieve these objectives, we utilise **cutting-edge technologies** and **pioneering construction techniques**, while continually investing in **personnel development**. Occupational safety and environmental preservation are paramount to us. We are dedicated to catalysing economic growth and nurturing social development in every region where we operate.

With a legacy dating back to 1867, we persistently evolve with a **revitalised sense of exploration, conceptualising new opportunities and promoting progress**. We take pride in our diverse community of **over 6,000 people**, representing **24 languages**, residing in **15 countries**, and operating across four continents, primarily in **Oceania**, **Europe**, the **Americas**, and the **Far East**.

PRODUCTION *(km excavated as at 31/12/2023)*

273 ***km*** *with TBM*

255 ***km*** *with conventional method*

18 ***km*** *with pipe jacking*

ROADS AND MOTORWAYS

16
Motorways

>300
Km of roads

RAILWAYS AND METROS

41
Railways

18
Metro lines

WATER

30
Hydraulic works[1]

10
Hydroelectric installations

PHOTOVOLTAIC

1,132
MW in operation

COUNTRIES

15

LANGUAGES

24


Photo from the Historical Archive

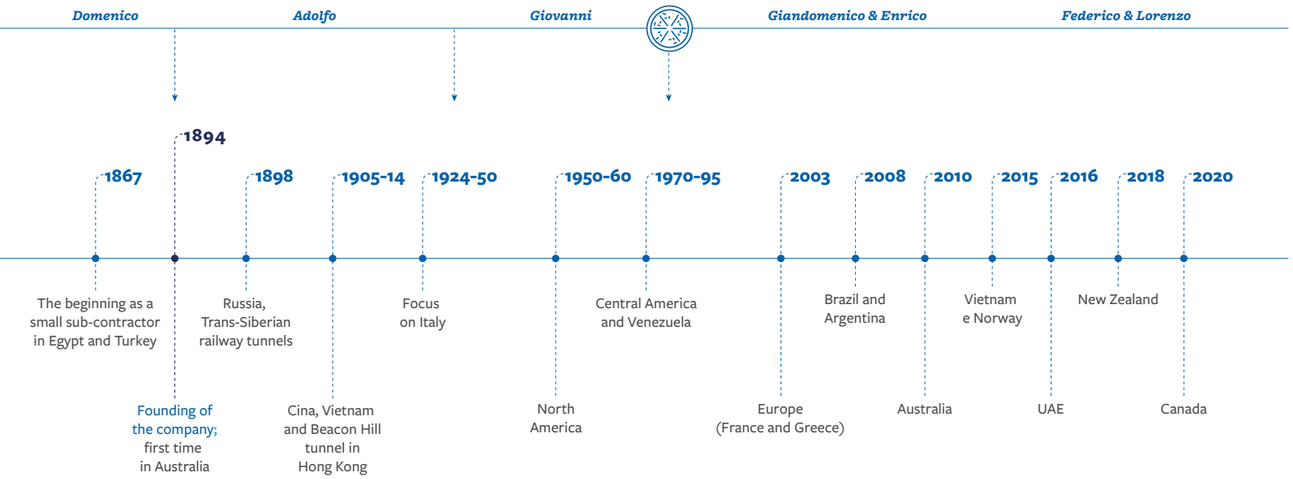



Photo from the Historical Archive

Since our founding 130 years ago, our company has witnessed and contributed to the unfolding of modern history through five generations. During this time, we have transmitted invaluable knowledge, technical expertise, and an enduring sprit of curiosity. Each generation has left a lasting legacy by overcoming formidable challenges, continuously pushing the boundaries of innovation and excellence.

Vision

LEAVE A BETTER WORLD FOR FUTURE GENERATIONS

Mission

BUILD EXCELLENCE IN A SUSTAINABLE AND INNOVATIVE WAY

Our sustainability journey begins with a clear **vision** of the future we aspire to create through thoughtful business decisions: aiming to leave a better world for **generations to come**.

We recognise that achieving this vision requires the collective efforts of various stakeholders including governments, organisations, companies, and civil society.

Therefore, we have embedded within our daily operations a corporate **mission** to uphold our legacy as 'builders of **excellence**' committed to **innovation** and **sustainability**.

This mission is guided by a clear set of **values** that govern the conduct of all members of our organisation. The company's vision and mission are intrinsically linked to sustainability. We strive to integrate sustainability principles into every aspect of our business: from project selection and execution to strategic management and on-site operational procedures.

1894 - 2024

Ghella commemorates its 130th anniversary by launching a series of cultural initiatives for the city of Rome.

In 2024, Ghella celebrates a remarkable milestone: **130 years** since **Domenico Ghella** laid the foundation for what has become a leading global entity in major public works construction. Throughout this journey, our unwavering dedication to excellence, innovation, future responsibility, and sustainable growth has been guided by the pioneering spirit of five generations of explorers. To further our commitment to fostering positive change in communities and regions, **we have launched a series of cultural initiatives in Rome, comprising three special projects**.

Inaugurating this series of events is the '**Nuove avventure sotterranee' exhibition at the Extra MAXXI - Museum for the Arts of the XXI Century in Rome**: the exhibition showcases photographic projects by **Stefano Graziani**, **Rachele Maistrello**, **Domingo Milella**, **Luca Nostri**, and **Giulia Parlato**, commissioned to document the beginnings of significant infrastructural works across **Italy**, **Canada**, **Argentina**, **Australia**, and **New Zealand**.

Curated by **Alessandro Dandini de Sylva**, who previously curated the "Di Roccia, Fuochi e Avventure Sotterranee" exhibition at the Extra MAXXI in 2021 and Maxxi L'Aquila in 2022, this second project juxtaposes the new photographic campaigns with archival images documenting Ghella's infrastructure projects from the late 1960's to the early 2000's.

The distinction between the two photographic collections lies in their stylistic approach. The five photographers use construction site observations as a starting point to contemplate the clichés of representation and the ambiguity inherent in photographic documentation. They contemplate excavation as a means of interpreting the intangible aspects of the landscape, the symbolism of the cave and abstraction, and the significance of a river's flow and the depths of the sea in revealing the character, form, and emergence of the city.

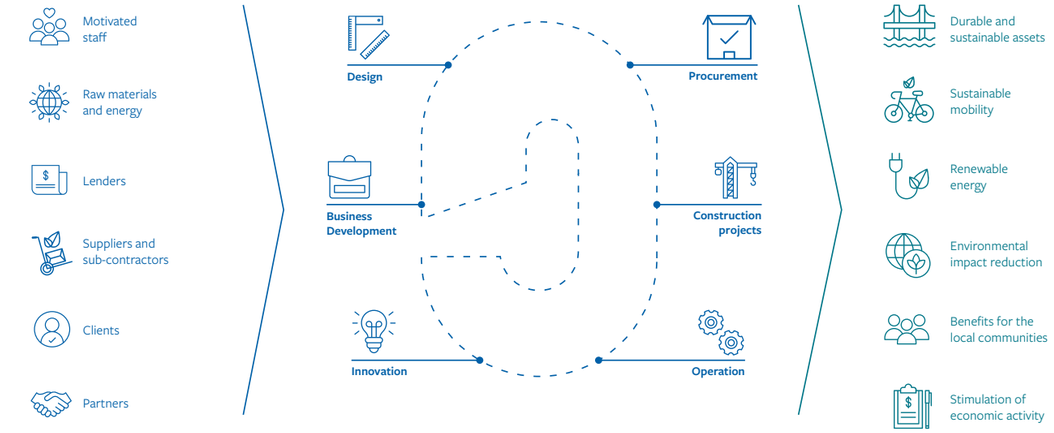
Our commitment and sense of responsibility to the city of Rome persist, with the completion of the first of three phases of **restoration** – involving the refurbishment of the interior vault, central fresco, and pillars – of the **Loggia dei Vini** at **Villa Borghese**.

Currently in the final stages of the first restoration phase, undertaken by R.O.M.A Consorzio, the Loggia is set to reopen to visitors as **LAVINIA**. It will feature site-specific artworks, gatherings, and educational activities.

Creating shared value

As a contractor, our core responsibility is to uphold the **quality** of execution by leveraging technical **excellence** and **innovation** while mitigating the environmental and social impacts inherent in the construction phase. Our efforts are directed towards creating value for the local area and communities where our projects are situated.

At the heart of our operations, our value chain functions as a pivotal hub within a virtuous cycle. Essential resources such as personnel, raw materials, and supplies are leveraged to create **shared value**[2] for both the company and society. The generation of **economic value** for the company serves as a catalyst for **social welfare** through the creation of sustainable infrastructure, the promotion of sustainable mobility, and continuous staff development. Moreover, we strive to generate positive impacts on the social and environmental performance of our supply chain. Community engagement initiatives, local workforce development, and the transfer of technological skills across different countries where we operate all contribute to leaving a lasting legacy that transcends the construction phase.



Shared value creation

Stakeholder engagement and the materiality matrix

The material issues highlighted in our Sustainability Report, which are integral to our corporate strategy, have been identified through consultations with internal and external stakeholders, coupled with a rigorous materiality analysis undertaken in 2022.

The analysis was conducted in alignment with reporting standards such as GRI and ESRS, while taking into account the evolving external and internal contexts. Moreover, we adhered to the principle of double materiality, ensuring that both the **impact** dimension - our effects on the external environment, and the **financial** dimension - the economic impacts of sustainability aspects on the company, were thoroughly addressed.

01. → Context analysis

We **benchmarked** with peers, competitors and clients, analysing the reporting standards to plot changes in the reference market.

02. → Identification of potentially relevant matters

The analysis we performed was integrated with a review of internal policies and documents. A **list of potentially relevant and priority issues** for Ghella was then drawn up.

03. → Engagement of stakeholders

A **short questionnaire** was handed to a sample of external stakeholders and to all Ghella employees and managers. The questionnaire was sent out to about 600 stakeholders, and around 40% of them completed it.

04. Prioritization of issues

The responses received were analysed, and a weight was assigned to each category of stakeholder based on the relevance of the relationship and their knowledge of Ghella's business activity.

Map of Ghella's key stakeholders

The outcome of this process (**materiality matrix**) is a list of **15 material issues arranged based on their impact**, as perceived by both internal and external stakeholders:

- Occupational health and safety
- Efficient waste management
- Ethical business conduct
- Pollution prevention and reduction
- Quality and innovation
- Employee welfare
- Enterprise risk management
- Integrating sustainability into corporate governance
- Sourcing sustainable materials and eco-design
- Protection of human rights
- Efficient management of water resources
- Personnel development
- Active role in the development of industry policies and standards
- Climate change mitigation
- Equal opportunities

The **five topics of financial materiality** are as follows:

- Health and safety at work
- Efficient management of water resources
- Quality and innovation
- Staff development
- Pollution prevention and reduction

Ghella's materiality matrix. The larger indicators highlight the top 5 topics with the most significant financial impact.

"Occupational health and safety" is of paramount importance, representing the most significant issue in terms of both impact and financial implications. Closely aligned with our ESG Strategy, it remains a top priority across all aspects of the company's operations.

Our objectives

Ghella's **ESG strategy** translates the corporate mission into **three pillars**, each comprising thematic areas. Each area is linked to long-term quantitative objectives and targets.

PLANET

Climate Change
Target **2030**
-25% Scope 1 and 2 emissions*
Target **2050**
Carbon neutral

Circular Economy
Target **2025**
Maximise the use of recycled materials and the reuse of excavated earth

Environmental Protection
Target **2025**
Include measurable biodiversity impact indicators in construction decisions
Target **2030**
-15% water withdrawals**

PEOPLE

Occupational Health and Safety
Target **2030**
-30% LTIFR index
Target **2050**
Zero Harm in our workplaces

Employee well-being and development
Target **2030**
30% of management roles held by women

Monitor and improve perceived well-being and job satisfaction

Local communities
Target **2025**
Quantitative monitoring of impacts on local commmunities

BUSINESS CONDUCT

Ethics andTranparency
Target **2025**
Adopt external ethics and anti-corruption standards

Risk Management
Target **2025**
Identify, monitor and consolidate ESG risk factors within the ERM frameworks

** tCO_{2eq} / Revenues in millions of euros; ** Ml / Revenues in millions of euros*

CROSS-CUTTING TOPIC: ***Sustainable Procurement***

ENABLING FACTORS:
SUSTAINABILITY CULTURE, GOVERNANCE AND INNOVATION

The **Sustainability Plan for 2023-2025** outlines the short to medium-term measures to be implemented by the corporate functions and company units. These actions adhere to directives from clients and project partners and aim to achieve the long-term ESG objectives and targets set out in the ESG Strategy.

The plan also includes so-called **enabling factors**, which are elements of the strategy not inherently linked to the business objectives but crucial for the strategy's effectiveness. Enabling factors include:

- The **culture of sustainability**, i.e. the sensitivity, conduct and technical training needed to translate objectives into projects.
- Effective **governance**, well-structured and equipped to facilitate and drive change.
- **Innovation**.

The plan benefits from a solidified sustainability governance, which, through the integration of synergies between the corporate and regional entities, ensures greater effectiveness in the implementation and control of levers and actions.

Measurable quantitative targets are another strength, as they provide concrete evidence of the company's commitment to ecological transition, reinforcing corporate social responsibility and strengthening our role as a trusted partner of internal and external stakeholders. The inclusion of measurable quantitative targets underscores our firm commitment to the ecological transition, amplifying corporate social responsibility efforts and cementing our reputation as a trusted partner for both internal and external stakeholders.

By adopting a systematic approach, the plan integrates sustainability goals into all business processes, starting from the pre-qualification and tender phases onwards, enhancing the sense of shared responsibility and motivation among the functions and production units involved. Externally disclosing this commitment serves as a formal declaration, enabling us to strengthen our competitiveness in tenders.

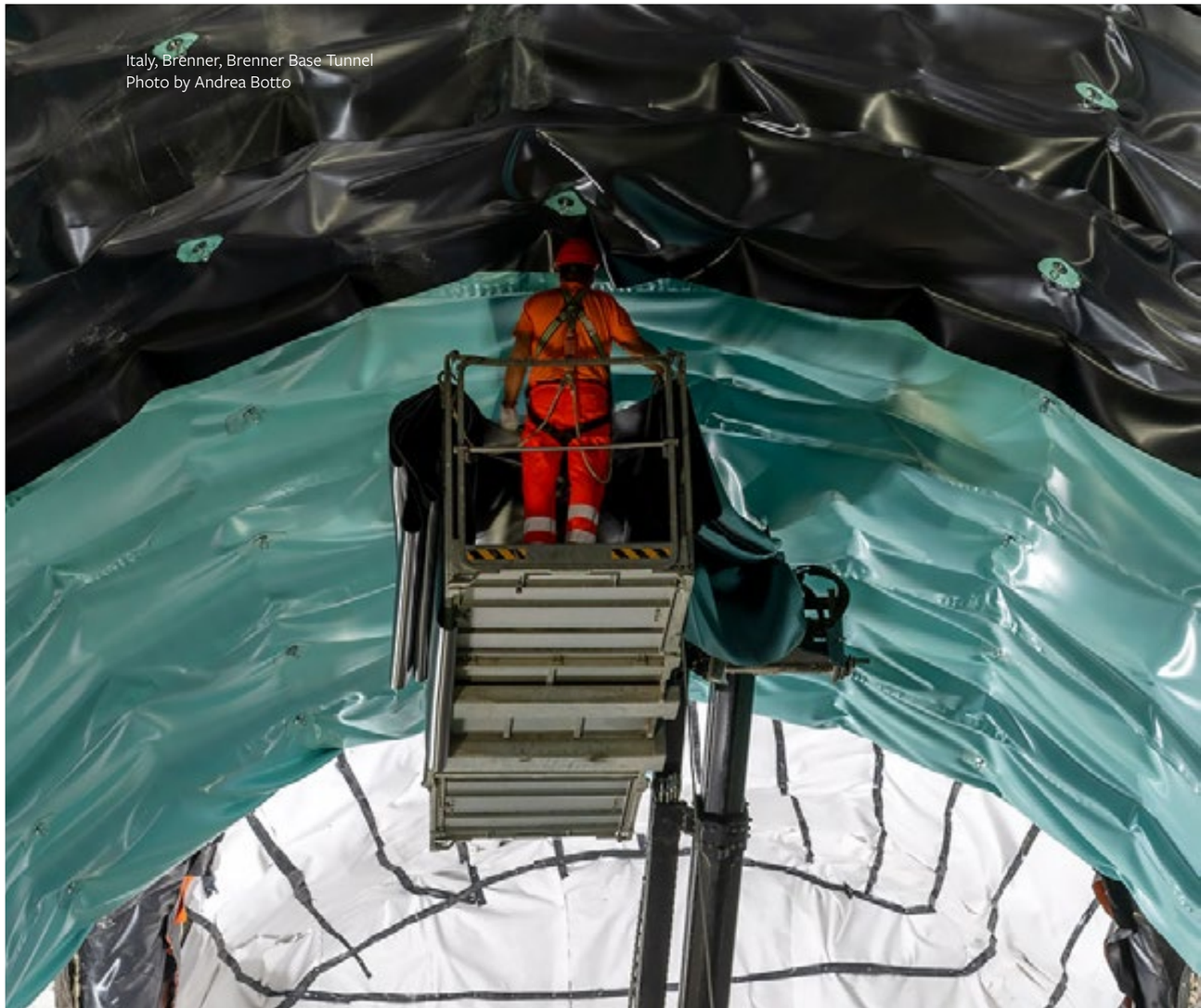
External performance evaluation

For the fifth consecutive year, we have been assessed by **EcoVadis**, a sustainability rating platform utilised by 200 industries across 180 countries and comprising over 125,000 companies.

EcoVadis awards the Corporate Social Responsibility (CSR) medal by comparing a company's sustainability trajectory for the assessment year, contextualising it within the broader evolution of sustainability performance across all assessed companies and the external environment.

In 2023, we maintained our previous year's score and achieved a Gold rating, placing us in the 95th percentile (top 5%) among the most competitive companies for sustainability. The EcoVadis assessment process is guided by 21 CSR indicators, categorised into four core themes: environment, labour practices and human rights, ethics, and sustainable procurement. This methodology integrates various international CSR standards, such as the UN Global Compact, the Global Reporting Initiative (GRI), ISO 26000, International Labour Organisation (ILO) conventions, and the principles of CERES (Coalition for Environmentally Responsible Economy). The EcoVadis rating serves as a covenant for monitoring Ghella's sustainability performance in green financing.

In 2023, we were recognised for the first time in Il Sole24Ore's "Sustainability Leaders" ranking as one of Italy's top-performing companies in sustainability. The list consists of 200 large companies evaluated by a leading market research firm based on over 40 performance indicators across three sustainability dimensions (environmental, social, economic). We are proud to maintain this recognition for the 2024 edition of the initiative.



Italy, Brenner, Brenner Base Tunnel
Photo by Andrea Botto

Governance

"The company structure is designed to put people at the centre, giving them the ability to interact effectively as a cohesive, widespread team"

Marco Gradella
Head of Human Resources

Corporate Structure

Ghella S.p.A. is an unlisted joint-stock corporation with indirect ownership, where 70% of the shares are held by Ghella Group S.r.l. and 30% by Geo 2007 S.r.l.

*Drill Pac Srl has 100% cotrolling interest in Pacchiosi North America and 95% in Pacchiosi Drill USA (5% by Ghella Spa)

Whilst remaining a family business, Ghella's governance model has developed over time in line with its continuous growth into new international markets. Ghella's corporate structure includes bodies such as the Board of Directors (BoD) and the Board of Statutory Auditors, both appointed by the Shareholders' Meeting, as well as the Auditing Company and the Supervisory Board pursuant to Legislative Decree 231/01, appointed by the Board of Directors. Below is the composition of the three Bodies:

BOARD OF DIRECTORS

Enrico Ghella	President and CEO
Federico Ghella	Vice president
Lorenzo Ghella	Vice president
Andrea Guerra	Board Member
Alberto Nigro	Board Member
Marco Tummarello	Board Member

BOARD OF STATUTORY AUDITORS

Riccardo Gabrielli	President
Francesco Farina	Statutory Auditors
Alberto Santi	Statutory Auditors

SUPERVISORY BOARD

Gianluca Tognozzi	External Member - Presidente
Federico Cantatrione	External Member
Paola Scillamà Irti	External Member

Ghella's **Board of Directors** comprises six directors, four of whom are Ghella Group employees. The Chairman and Chief Executive Officer hold the broadest powers for the ordinary and extraordinary administration of the company. In the absence or impediment of the Chairman, the two Vice-Chairmen are vested with the same powers. The Board Member and Director of Administration and Finance have the necessary authority in finance-related matters. The Board of Directors is responsible for establishing guidelines on ethics and transparency.

Ghella's **ESG Committee** is the collegial body responsible for defining the company's ESG strategy, setting priorities, commitments, objectives, and assigning responsibilities in line with business needs. The Committee consists of ten members chosen from the shareholders and the company's internal management, all of whom have specific expertise or representativeness, with five members also holding executive roles. The Chairman is Mr. Federico Ghella. The **Compliance & Sustainability** department assists the Committee in performing its functions. In 2023, the ESG Committee held four meetings as part of its efforts to monitor and guide the Group's ESG performance. Upon the recommendation of the ESG Committee, the Board of Directors approves the Sustainability Plan, the materiality analysis and the annual Sustainability Report.

The internal control body, known as the **Board of Statutory Auditors**, monitors compliance with the principles of proper administration, as specified in Ghella's Articles of Association. It consists of three regular members and two alternates, appointed and operating in accordance with the Civil Code.

In compliance with current legislation, the auditing activity is carried out by an **auditing company** listed in the Special Register and appointed by the Board of Directors.

In accordance with the regulations outlined in Legislative Decree 231/01, Ghella's Board of Directors has established a collective **Supervisory Board**, comprising three externally appointed members. The Supervisory Board is allocated adequate funding to ensure it operates with the necessary autonomy and independence.

Responsible business conduct

We have adopted a model of management and control principles, policies, and instruments to ensure the responsible governance of our activities. Business conduct serves as a fundamental aspect of our ESG Strategy, as we recognise that sustained value generation is achievable only through the consistency and integrity of our actions.

PLANET

Environmental Policy

PEOPLE

Health and Safety Policy

Human Resources Management Policy

Appropriate Workplace Behaviour Policy

Equality Diversity and Inclusion Policy (EDI)

BUSINESS CONDUCT

Whistleblowing Policy

Social Responsibility Policy - SA8000

Anti-Bribery and Corruption Guidelines

Anti-Bribery and Corruption Policy

Human Rights Guidelines

SUSTAINABLE PROCUREMENT

Sustainable Procurement Policy

SUSTAINABILITY, GOVERNANCE AND INNOVATION CULTURE

Code of Ethics

Quality Policy

Sustainability Policy

All employees of Ghella and its subsidiaries and affiliates are expected to uphold the values articulated in the Code of Ethics. Directors incorporate this obligation into the formulation of business objectives, and these same commitments are communicated to our third-party partners.

Argentina, Matanza Riachuelo
Photo by Luca Nostri from the photographic project "Nuove avventure sotterranee"

Organisation and Management Model pursuant to Legislative Decree 231/01.

Ghella has implemented an **Organisation, Management, and Control Model** to mitigate the risks of committing offences as per Legislative Decree 231/01. This decree holds companies administratively liable for offences committed in their interest or to their advantage, resulting in fines and disqualifications. These offences cover corruption, environmental and occupational safety violations, industry and trade infringements, anti-competitive practices, offences against the person (including human rights and labour practices), terrorism financing, and transnational crimes. Since 2021, the Board of Directors has adopted an updated version of the model, aligning with Legislative Decree 231/2001 and subsequent amendments and additions, to also address tax offences newly incorporated by the legislator in the list of predicate crimes.

Risk Management

Ghella has adopted an Enterprise Risk Management model in accordance with the ISO 31000 guidelines. This model effectively identifies and manages the key risks and opportunities inherent in the company's main strategic business processes across its various operational regions and projects. Our risk management model monitors the main risks inherent in business operations, including those related to sustainability issues such as environmental and climate risks, health and safety risks, human rights risks, corruption risks, responsible supply chain management and numerous others. The model, which is updated on an ongoing basis, periodically assesses the effectiveness of measures implemented to address the risks managed by process managers, thus promoting a culture of risk awareness throughout the company.

Management System

Given our extensive presence across culturally diverse nations, we have established an **Integrated Management System**: a multi-site structure that reflects Ghella's standardised organisational and operational approach, while allowing individual local units the autonomy needed to adhere to local regulations and meet customer requirements.The system is certified according to international standards **ISO 9001**, **ISO 14001**, **ISO 45001**, and **SA 8000** enabling us to oversee and regulate processes within the quality, occupational health and safety, environment, and social responsibility frameworks. We employ a risk-based approach to identify potential threats and opportunities that may impact the effective management of the organisation. Our primary objective is the ongoing enhancement of our processes and outcomes. The system applies to all activities undertaken by Ghella at operational sites. For activities related to contracts where we operate in a Joint Venture, the management system is designed so that each partner's own management system will be the starting point. In these cases, Ghella actively participates in designing the shared JV system to ensure that our own principles and regulations are fully integrated and upheld therein.

Anti-Bribery and Corruption

At Ghella, we operate in accordance with the highest standards of conduct, transparency, and ethics, guided by our policy of "zero tolerance for corruption". We have established a Code of Ethics, an Organisational Model pursuant to Legislative Decree 231/2001, anti-corruption guidelines, and procedures aimed at fostering a culture of legality and implementing control measures to prevent any form of corrupt behaviour or actions contrary to prevailing national and international standards and laws. In early 2023, Ghella's Management System was integrated and certified to meet the requirements of the UNI ISO 37001 "Anti-Bribery Management System" standard.

Human Rights

Dignity and **respect** for individuals are fundamental pillars of our corporate culture. The **Human Rights Guideline** serves as a tool for our internal and external stakeholders to identify and prevent potential violations of human and labour rights, in accordance with the highest international standards and conventions, such as the ILO Core Conventions. In addition to the 'Ethical Certification of Social Responsibility' in accordance with the SA8000 (Social Accountability) standard, we have achieved validation for **ISO 30415 "Human Resource Management - Diversity and Inclusion"**. This recently introduced international validation assesses an organisation's management of diversity and inclusion matters. Our **Australian subsidiaries** comply with local regulatory obligations by annually drafting and publishing a **Modern Slavery Statement**. These statements are accessible to the public on modernslaveryregister.gov.au. The legislation introducing this requirement outlines essential steps that companies must undertake to combat modern slavery and human trafficking. Our **Norwegian subsidiary** adheres to local regulatory mandates by annually drafting and publishing a **Statement of Transparency Act**. This statement is available on the company's website (https://www.ghella.com/en/branches/ghella-spa-nuf-succursale-norvegia). The legislation implementing this requirement aims to foster respect for human rights, promote decent work, and enhance transparency in all activities related to goods and services production.

Whistleblowing

A **whistleblowing** system is in place to manage the process of submitting confidential reports via communication channels accessible to both employees and external stakeholders. These reports address potential violations or suspected breaches of the code of ethics, policies, company guidelines, offenses under the 231 Model, or other inconsistencies in the application of internal procedures. A user-friendly computer portal is in operation, through which individuals can submit reports ensuring anonymity and confidentiality of the reporter's identity.

Greece, Athens, Metro Line 3
Photo by Marina Caneve

Projects

"Establishing and achieving sustainability goals demonstrates our social responsibility to the environment and the community, reinforcing our reputation for excellence in the construction industry"

Andrea Calì
Deputy Project Director

Broadway Subway Project, Canada

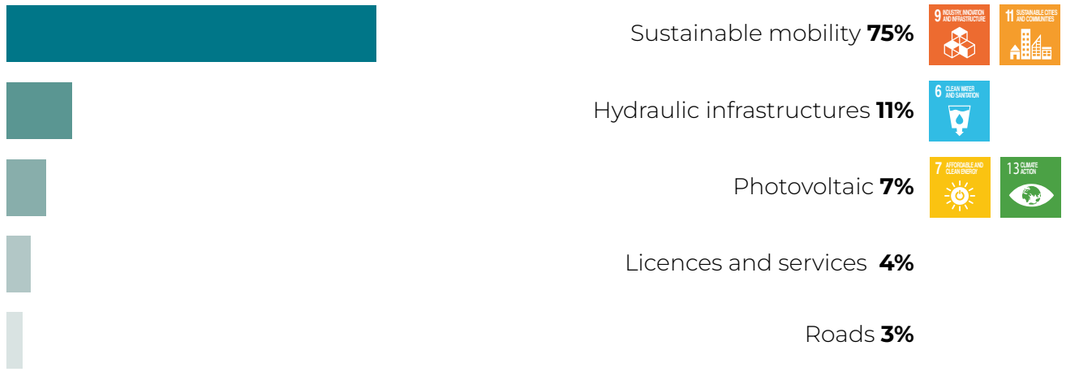
Norway, Oslo
Follo Line

Our work represents an important element in the realisation of **major public infrastructure projects**, driving progress and advancement of infrastructure development within the countries where we operate. These contributions are crucial elements for the achievement of all 17 Sustainable Development Goals set forth in the UN's 2030 Agenda.

Our involvement in infrastructure projects takes on even more significance within the framework of the commitment that Italy has undertaken with the European Union under the **Next Generation EU** initiative. The initiative is aimed to support a sustainable economic recovery post-pandemic and promote ecological transition. Notably, four[3] of our Italian projects awarded in 2023, are 100% funded by the **National Recovery and Resilience Plan** (**PNRR**), including the "Trento Railway Bypass - Section 3" and the "AV Battipaglia-Romagnano - Section 1".

Our projects, with a primary focus on railways, metro systems, and hydraulic infrastructures, are aimed at leaving a **lasting legacy** for the community in which we operate, with the goal of making the transition to more sustainable lifestyles increasingly accessible and tangible.

Specifically, an analysis of our 2023 project portfolio reveals that our activities fall into the following areas:



Portfolio of works by activity. Sustainable Mobility includes works related to Railways and Metro Systems.

In 2023, we initiated a comprehensive review of our sustainability reporting procedures to ensure compliance with the recently introduced European Corporate Sustainability Reporting Directive (CSRD). This review includes an assessment of Ghella's economic activities to determine their categorisation as either 'eligible' or 'aligned' with the European Taxonomy.

Our assessment based on the European Taxonomy guidance, reveals that 100% of our activities qualify for European classification. In other words, they could contribute to "Climate Change Mitigation," "Climate Change Adaptation,"[4] and "Transition to a Circular Economy"[5].

ELIGIBLE ACTIVITIES FOR 2023

3.5 Use of concrete in civil engineering → Circular Economy

4.1 Electricity generation using solar photovoltaic technology → Mitigation and Adaptation

4.5 Electricity generation from hydropower → Mitigation

5.1 Construction, extension and operation of water collection, treatment and supply systems → Mitigation

5.3 Construction, extension and operation of wastewater collection and treatment → Mitigation

6.14 Infrastructure for rail transport → Mitigation

7.1 Construction of new buildings → Mitigation

7.7 Acquisition and ownership of buildings → Mitigation and Adaptation

As the process continues, it will also confirm which eligible economic activities are aligned according to the European Taxonomy.

Sustainable mobility and water infrastructure

In addition to reducing the impacts of climate change globally, our projects produce numerous positive economic, environmental and social benefits at a local level:

→ **Railway projects** facilitate the transition from road to rail transport for both passengers and freight along strategically important national and international routes, leading to reduced air emissions and fuel consumption during transportation, while also improving safety standards on roads

→ Expansion of **metro** and **urban railway lines** enhances public transportation accessibility, benefiting a broader segment of the population. By connecting previously unserved areas and offering more comfortable and time-efficient commuting options, it effectively reduces traffic congestion and associated emissions in cities such as Sydney, Brisbane, Toronto, and Vancouver, thus improving the overall well-being of citizens

→ Improvements to the **water infrastructure** enables more efficient wastewater management addressing climate change issues, preventing hydrogeological instability risks, and curbing pollution from sewage backflow. Additionally, these improvements bolster drinking water supply to accommodate the demand of urban growth

In Australia and New Zealand, all our projects are governed by the Infrastructure Sustainability (IS) rating system, developed by the **Infrastructure Sustainability Council** (**ISC**). This system assesses the sustainability of infrastructure projects throughout their lifecycle, covering planning, design, construction, and management phases. With the increased importance of evaluating sustainability at each stage of a project's lifecycle, including construction, the expertise and skills developed through these projects give Ghella a competitive advantage.

Trento Railway Bypass (Section 3A)

Trento, ***Italy***

The Trento Railway Bypass is financed almost entirely by funds from the National Recovery and Resilience Plan (PNRR). From December 2021 to February 2022, the client RFI conducted a public debate process aimed at collecting comments and proposals from the local community to evaluate and improve the project. We are involved in the first phase of the project (Section 3A), which includes the construction of the railway bypass route, as a variant of the historic Verona - Brenner line in the section crossing the city. The bypass will separate freight traffic flows from passenger traffic, meaning that the urban area of Trento is bypassed. The new line will start at Roncafort, near the Trento interport, and connect to the existing line at Acquaviva after about 14km, with approximately 11 km running through the new natural double-bore "Trento Tunnel." This project is part of the larger effort to upgrade the Fortezza-Verona railway line, allowing access from the south to the new Brenner Base Tunnel under construction. The aim is upgrading the European TEN-T Scandinavian-Mediterranean Core Corridor, which is intended to improve the efficiency of international rail freight transport. The project is also part of a broader framework of interventions for the redevelopment of Trento and to foster the area's sustainable mobility.

PROJECT DETAILS

Start date
2023

Category
High Speed Railway

Client
RFI Rete Ferroviaria Italiana S.p.A.

Type of excavation:
TBM

BENEFITS

1. Modal shift from road to rail transport

2. Urban regeneration for the city of Trento

3. Contribution to the efficiency of international freight transport

4. Neutrality goals

5. Enhancement of infrastructure connections to support commercial activities, offering opportunities for the logistics sector, combined transport, and the import/export market

Naples-Bari High Capacity/High Speed Railway

Cancello - Vitulano, ***Italy***

The project involves the Naples-Bari line to allow for higher speeds, enabling the integration of the Southern Italian railway infrastructure with the "Scandinavia-Mediterranean" Core Corridor. Identified as a priority within the framework of infrastructure investments provided for by the 2014 "Sblocca Italia" ["Unlock Italy"] law and included in the National Recovery and Resilience Plan (PNRR), the project has us involved in three sections: Cancello-Frasso Telesino, Frasso Telesino-Telese and Telese San Lorenzo-Vitulano. The main objective is to speed up the current link and improve service accessibility in the areas covered, benefiting both national long – distance services and regional and freight services. Our client, Rete Ferroviaria Italiana Spa (RFI) has, for the first time in Europe, obtained the U.S. Envision accreditation at the Platinum level for the design of the Frasso Telesino-San Lorenzo section (which includes two of the sections awarded to Ghella). The Envision certification is a rating system for sustainable infrastructure which evaluates project performance in terms of improvements to community quality of life, stakeholder engagement, responsible use of natural resources, environmental and resident species protection, CO_2 emissions, and infrastructure durability.

PROJECT DETAILS

Start date
2019, Cancello-Frasso Telesino
2021, Frasso Telesino-Telese
2022, Telese-Vitulano

Category
High Speed Railway

Client
RFI Rete Ferroviaria Italiana Spa

Type of excavation:
Conventional tunnelling

BENEFITS

1. Reduction in travel time of 1h 40 min between Naples and Bari

2. Modal shift from road to rail

3. Reduction in greenhouse gas emissions

4. Improves accessibility to High-Speed rail service in areas at risk of becoming depopulated

Italy, Naples - Bari
Photo by Domingo Milella from the photographic project "Nuove avventure sotterranee"

Lyon Turin High Speed railway – Base Tunnel

Lyon - Turin, ***France - Italy***

The Lyon - Turin link consists of a new freight and passenger railway linel spanning 270 km, with 70% in France and 30% in Italy. It will form the central link of the Mediterranean Corridor, one of the 9 axes of the Trans-European transport network (TEN-T). The cross-border section, built by the bi-national promoter TELT, is the central part of the project, connecting 65 km between the two international stations to be built in Saint-Jean-de-Maurienne (France) and Susa/Bussoleno (Italy), where the tracks will then connect to the existing lines. The main work of the cross-border section is the Mont Cenis base tunnel: two single-track tubes 57.5 km long, with 45 km in France and 12.5 km in Italy. When completed, the tunnel will contend the title of longest in the world alongside the Brenner Base Tunnel, also built by us. The tunnel will transform the current mountain railway, which passes through the historic Fréjus railway tunnel at 1,300m above sea level, into a flat railway route, improving the competitiveness and safety standards of rail transport and reducing its energy consumption.

VILLARODIN - BOURGET MODANE, FRANCE

We are currently involved in the work on "Section 1" of the project: starting from Villarodin-Bourget Modane and excavating for about 3.7 km, using conventional tunnelling, in the direction of Lyon and for about 18 km, using TBM, towards Turin. The segment in the direction of Turin has the highest rock overburdens, with depths exceeding two thousand metres.

CHIOMONTE - SUSA, ITALY

The contract covers the construction of the Lyon-Turin tunnel in the Susa Valley (Piedmont, Italy), starting from the newly operational construction site in the Maddalena di Chiomonte area and extending to the Susa entrance, with a total excavation length of 28.5 km. In addition to the two base tunnel tubes, further excavations are planned: the Maddalena 2 tunnel, from where the tunnel boring machines will start, the bypasses between the two tubes, the Clarea safety site and the artificial tunnel at the east entrance to Susa.

On December 18th 2023, the official start date of the Chiomonte construction site, Ghella, together with other partners, signed the "Integrity and Sustainability Pact" of the Lyon-Lyon companies and the "Mission-S Charter", the safety programme for the worksite. These two contractual documents commit Tunnel Euralpin Lyon Turin 's (TELT) entire supply chain to adhere to the fundamental principles of sustainable development outlined by the UN Global Compact. Specifically, TELT is committed to making Chiomonte a "zero-emission" construction site. To achieve this, on the one hand, it is implementing a strategy that includes minimising emissions using energy from renewable sources, low energy consumption technological systems, and the employment of low-emission vehicles, including electric ones.

PROJECT DETAILS

Start date
2021, Villarodin-Bourget Modane
2023, Chiomonte-Susa

Category
High Speed Railway

Client
TELT

Type of excavation:
TBM and conventional tunneling

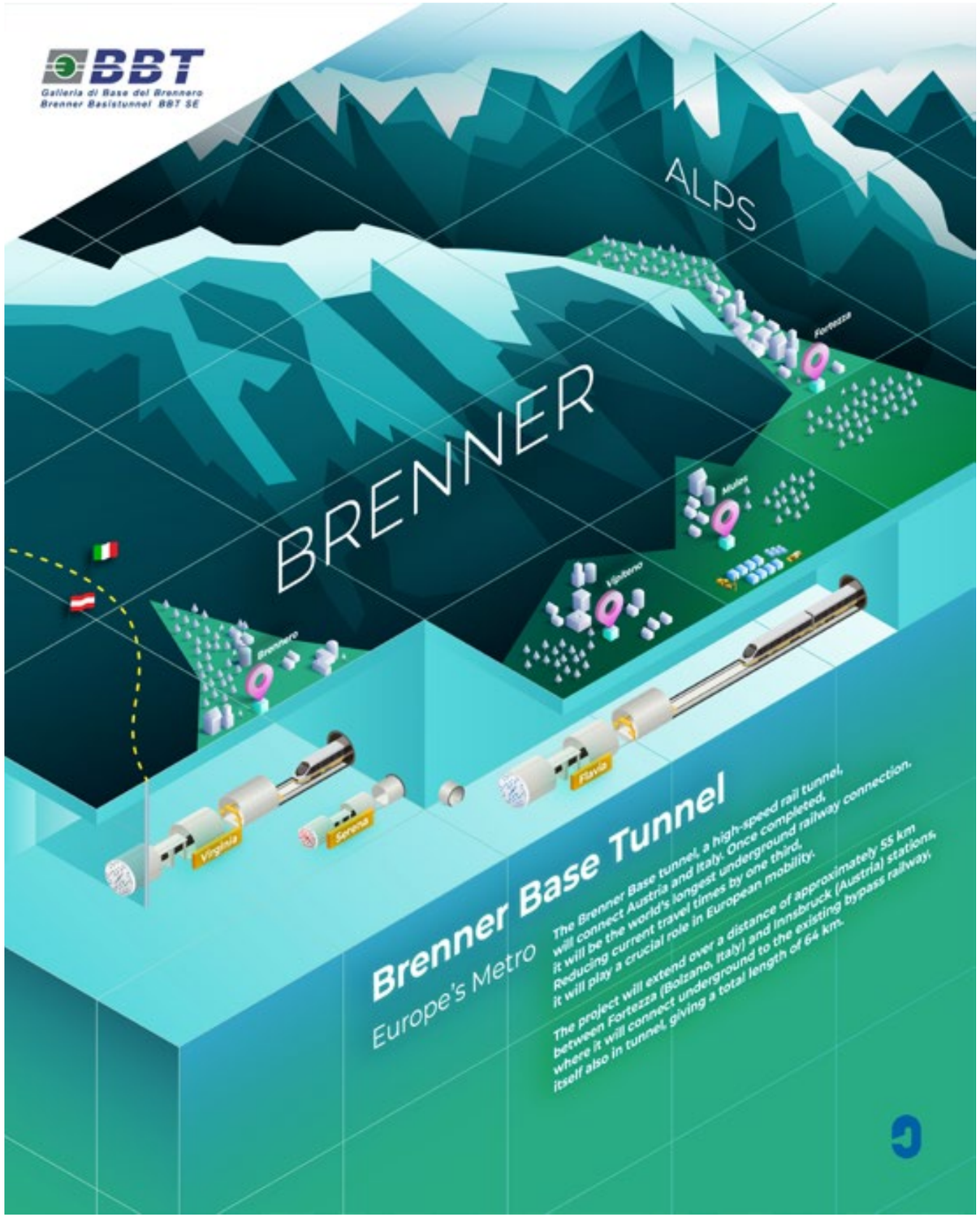
BENEFITS

1. Improved safety standards, cuts energy consumption and travel time compared to the existing railway link

2. Removal of roughly 1 million heavy road vehicles annually from the road

3. Cuts greenhouse gases in an amount of approximately 1 million tonnes of CO_2 equivalent once it is in operation

Argentina, Matanza Riachuelo
Photo by Luca Nostri from the photographic project "Nuove avventure sotterranee"



Brenner Base Tunnel, "H61 Mules 2-3" section

Mules, ***Italy***

The Brenner Base Tunnel will extend over a distance of approximatley 55 km between the stations of Fortezza (Italy) and Innsbruck (Austria), where it will connect underground to the existing bypass railway, also in a tunnel, reaching a total length of 64 km. Once completed, the Brenner Base Tunnel will be the longest railway tunnel in the world. The project is part of the overall upgrade of the Munich-Verona High Speed/High Capacity axis and is part of the TEN-T trans-European transport network, dubbed "The European metro line," and more specifically, part of the Scandinavian-Mediterranean corridor. The "Mules 2-3" construction section is the largest in the entire project area and extends from the northern border of the other Italian section, called "Isarco Underpass", to the Italian-Austrian border. This section includes the construction of the two main line tunnels, an exploratory tunnel, cross passages and the emergency stop station (one of the three located along the entire route and the only one on Italian territory) with the related access tunnel.

PROJECT DETAILS

Start date
2016

Category
High Speed/High Capacity Railway

Client
Galleria di Base del Brennero – Brenner Basistunnel BBT SE

Type of excavation:
TBM and conventional tunnelling

BENEFITS

1. Reduction in travel time, compared to the existing railway link, by 55 minutes for passenger transport, 1 hour and 10 minutes for freight transport

2. Modal shift from road to rail for connections between Austria and Italy.

3. Reduction in CO_2 emissions

Section 1A Battipaglia Romagnano

Battipaglia - Romagnano, ***Italy***

Fully funded by PNRR, the project includes the construction of a new high-speed railway line on the Salerno-Reggio Calabria route. This strategic route for passenger and freight transport will strengthen the connection between the north and south of Italy. The interventions will improve the railway system and significantly increase passenger traffic along the north-south axis of the peninsula, also benefiting connections with Sicily and resulting in greater transport system efficiency. Ghella will contribute to the construction of the section between Battipaglia and Romagnano (Section 1). This section involves designing and constructing approximately 35 km of railway, with trains travelling at speeds of up to 300 km/h. The route includes both underground and open-cut sections, comprising 11 tunnels totalling around 14 km, 19 viaducts with an overall length of over 6 km, and 8 artificial tunnels covering about 4 km. Additionally, an interconnection will also be built at Romagnano to link the new line with the existing line connecting Battipaglia, Metaponto, and Potenza.

PROJECT DETAILS

Start date
2023

Category
High Speed railway

Client
RFI Rete Ferroviaria Italiana Spa

Type of excavation:
Tunnel excavation is mainly planned with TBM-EPB (Earth Pressure Balance) machines, which are designed for safe excavation in gas-bearing conditions.

BENEFITS

1. Infrastructural development and sustainable mobility in the South of the country

2. Travel time from Rome to Reggio Calabria will be reduced by up to four hours

3. Increased freight traffic on the approach to the port of Gioia Tauro

4. Reduction in greenhouse gas emissions

Greece, Athens
Photo by Marina Caneve

Messina-Catania Palermo Railway Route. New Palermo Catania connection.

Fiumetorto - Nuova Enna, ***Italy***

The construction of the new Palermo, Catania, and Messina link is a strategic project for the infrastructural development of Sicily, falling under the larger PNRR infrastructure programme. It aims to upgrade and duplicate the railway line, providing higher train frequencies, increased operating speeds, and more efficient transportation of freight and passengers within the island. This project will reduce travel time between Palermo and Catania to about 2 hours, down from the current 3 hours, making rail transport more competitive. The Palermo-Catania-Messina Line is an essential section of the Scandinavian-Mediterranean Corridor No. 5 within the TEN-T Trans-European transport network, promoting interconnection with the rest of Italy and Europe. The upgrade works have been divided into five functional sections, all of which are currently in progress. Below are the sections in which Ghella is involved.

SECTION 1+2
FIUMETORTO-LERCARA

The scope of section 1+2 is to duplicate the Fiumetorto-Lercara Diramazione section, including the executive design and construction of 30 km of new railway line. In particular, the section includes the construction of a natural double-bore single-track underground tunnel of about 20 km, named 'Alia,' 2.2 km of rail and road viaducts, 7.3 km of connecting roads, and three stations. Among these, the Valle del Torto station will be built from scratch, while the other two, Cerda and Lercara, will be upgraded. The stations will be equipped with systems designed to ensure efficient water usage and the collection and reuse of rainwater.

SECTION 3
LERCARA-CALTANISSETTA XIRBI.

The scope of section 3 covers the executive design and construction of 47 km of new railway line, predominantly following a route that deviates from the historic line. This contract includes constructing about 22 km of tunnels (including interconnections), over 11 km of rail and road viaducts, 32 km of connecting roads, and the upgrade of Vallelunga station.

SECTION 4A
CALTANISSETTA XIRBI-NUOVA ENNA

The scope of section 4A includes the executive design and construction of 27 km of railway line from Caltanissetta Xirbi station (included) to Nuova Enna station (excluded), following a route that largely deviates from the existing line. This project also includes the construction of 20 km of tunnels and 3 km of viaducts.

PROJECT DETAILS

Start date
2023

Category
High Speed/High Capacity railway

Client
RFI Rete Ferroviaria Italiana Spa and Italferr Spa Construction Management

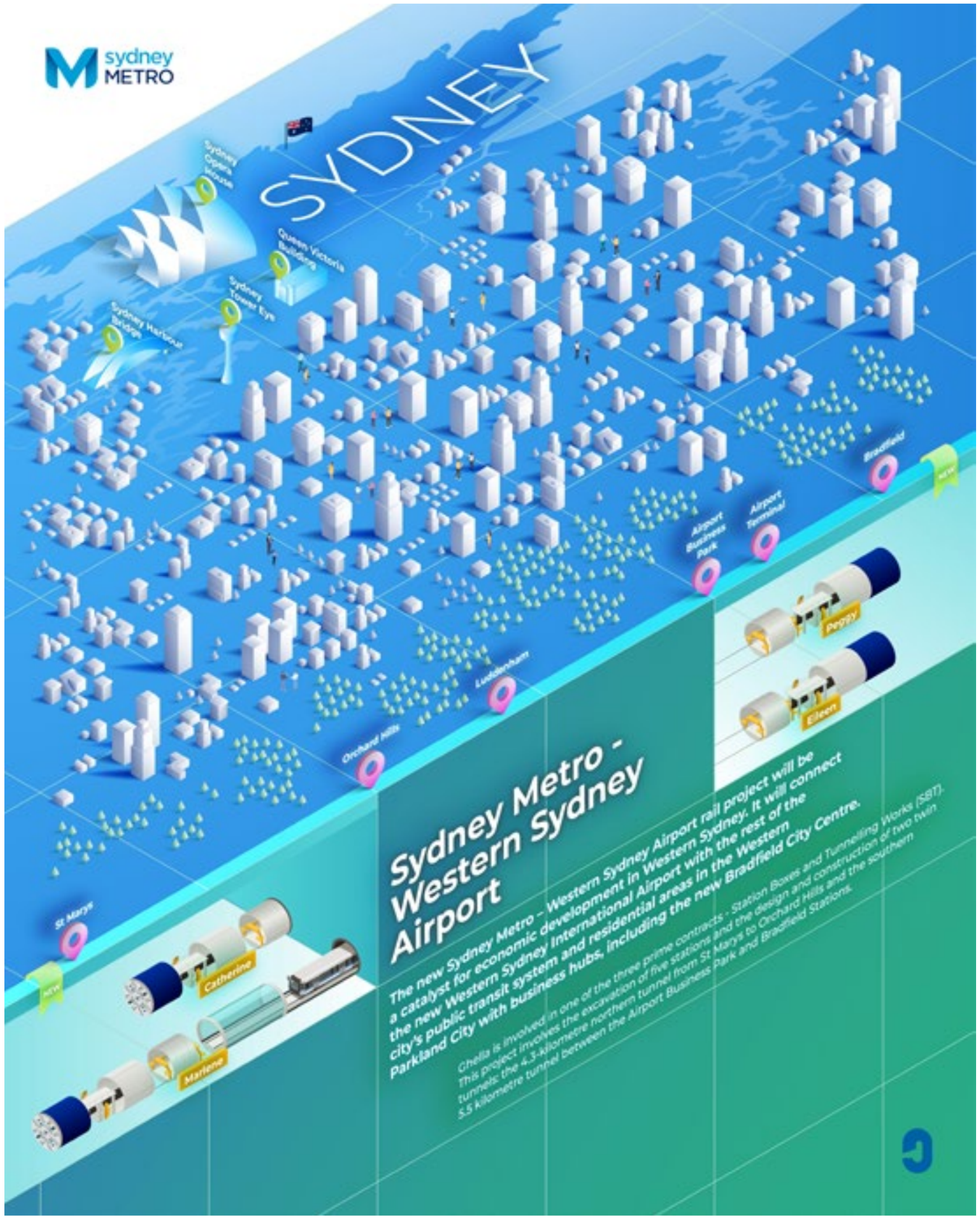
Type of excavation:
TBM-EPB (Earth Pressure Balance-Atex)

BENEFITS

1. Infrastructural development and sustainable mobility in the South of the country

2. Reduction in train travel time of about 1 hour between Palermo and Catania

3. Reduction in greenhouse gas emissions



Sydney Metro - Western Sydney Airport

Sydney, ***Australia***

The new Sydney Metro – Western Sydney Airport rail project will be a catalyst for economic development in Western Sydney. It will connect the new Western Sydney International Airport with the rest of the city's public transit system and residential areas in the Western Parkland City with business hubs, including the new suburb of Bradfield. It is estimated that construction of the metro line will generate 14,000 jobs - with a further 28,000 jobs to be created with the construction of the airport. The resulting development of Bradfield will in turn generate 200,000 skilled jobs in the aerospace and defence industries, and the manufacturing, cargo and logistics, tourism and research sectors.

Ghella is involved in one of the three prime contracts - Station Boxes and Tunnelling Works (SBT). This project involves the excavation of five stations and the design and construction of two twin tunnels: the 4.3 kilometre northern tunnel from St Marys to Orchard Hills and the southern 5.5 kilometre tunnel between the Airport Business Park and Bradfield Stations. Western Sydney Airport will be the first rail infrastructure project in Australian history to commit to "carbon neutral" certification for the construction and operation phases, under the Australian Government's Climate Active Carbon Neutral Standard. All Scope 1 and 2 greenhouse gas emissions will be reduced and offset.

PROJECT DETAILS

Start date
2022

Category
Metro

Client
Sydney Metro

Type of excavation:
TBM

BENEFITS

1. Acts as a catalyst for economic development in Western Sydney

2. Over 14,000 jobs will be created

3. Peak of 12 trains per hour in both directions

4. 100,000 fewer cars on the road by 2026

5. Reduces greenhouse gas emissions

Cross River Rail – Tunnel, Stations and Development (TSD) Package

Brisbane, ***Australia***

Cross River Rail (CRR) will be an essential part of Brisbane's city transport system, which is approaching the limit of its capacity with just one rail crossing of the Brisbane River.
CRR will provide a second river crossing at the core of the rail network, enabling an increase in frequency of trains, reducing congestion and increasing network reliability. The project involves excavation of 5.9 kilometres of twin tunnels under the river and the Central Business District (CBD) and construction of four new underground stations. Once operational, CRR will transform travel across the whole of South East Queensland. Journeys will be quicker; there will be new stations in more convenient locations; there will be capacity to increase train services as our population grows and public transport will become a more viable option for the whole of the region, helping to ease congestion on the roads. The project won the 2021 QMCA (Queensland Major Contractors Association) Innovation and Excellence Sustainability Award for its initiative in using recycled crushed glass as an alternative to aggregates and natural quarry products. In April 2022, the project won the Gold Quill Award of the International Association of Business Communicators (IABC) with the report "10,900 ways to build social license".

PROJECT DETAILS

Start date
2019

Category
Urban railway

Client
Cross River Rail Delivery Authority

Type of excavation:
TBM

BENEFITS

1. Improved transport capacity, supporting Queensland's population growth

2. Rush hour periods will be 24% shorter.

3. Modal shift from road to rail

4. Reduces greenhouse gas emissions

Suburban Rail Loop East - Package C

Melbourne, ***Australia***

Ghella has officially started the initial phase of excavations for the Suburban Rail Loop (SRL) East project in Melbourne, Australia, to construct a 16-kilometre section of the project's 26-kilometre twin tunnels, including tunnelling between Cheltenham and Glen Waverley, two new underground station boxes and construction works at the Southern Stabling Yard. This milestone holds great significance for Ghella as it marks its inaugural venture into the state of Victoria, whilst also bringing a profound and positive impact to the residents of Melbourne by transforming and enhancing the city's public transportation grid. Without a doubt, SRL is more than a transport project - it will help reshape how Melbourne grows in the decades ahead, offering solutions to longstanding transportation challenges by seamlessly reducing travel times and congestion, connecting millions of Victorians to key employment, health and education destinations in the city's East and Southeast. Trains will be running by 2035 with an end-to-end trip taking as little as 22 minutes. Furthermore, the areas surrounding the new stations will evolve into vibrant, bustling and inclusive communities for people to live, work, study and play – offering a diverse mix of housing options, local services and jobs closer to where people want to live and all within a short distance from a train station.

PROJECT DETAILS

Start date
2023

Category
Urban railway

Client
Government of Victoria

Type of excavation:
TBM Dual mode and TBM Mixshield

BENEFITS

1. Stimulus for residential and economic development in station vicinities

2. Reduced travel times

3. Reduction in traffic congestion

4. Reduction in greenhouse gas emissions

Broadway Subway Project, Millennium Line Extention

Vancouver, ***Canada***

The Broadway Subway Project is an extension to the existing Millennium line that will connect VCC-Clark station with a new terminus at Arbutus Street, passing through six new stations and having a length of 5.7 km, with both underground and elevated route sections. The Broadway Corridor is one of the most densely populated areas in British Columbia not yet served by a rapid transit system, yet at the same time experiencing strong population growth, with a 57% increase in population projected by 2040. Once in operation, the Millennium Line extension will provide fast, frequent and convenient SkyTrain service to B.C.'s second largest jobs centre, world-class health services, an emerging innovation and research hub, and growing residential communities.

PROJECT DETAILS

Start date
2020

Category
Metro

Client
Province of British Columbia

Type of excavation:
TBM

BENEFITS

1. Have the capacity to move three times as many people as the current 99 B-Line

2. Save the average transit commuter almost 30 minutes a day and relieving congestion along Broadway

3. Reduce congestion and improve travel time for transit commuters

4. Connect to bus, HandyDART, walking and cycling for a complete multi-modal experience

5. Support the environment by reducing greenhouse gas emissions

New Zealand, Central Interceptor
Photo by Giulia Parlato from the photographic project "Nuove avventure sotterranee"

Eglinton Crosstown West Extension

Toronto, ***Canada***

The multicultural Greater Toronto Area's transit system is experiencing major growth. One of the main projects underway is the Eglinton Crosstown West Extension (ECWE), a new rapid transit line that will improve connectivity along a key east-west corridor in Toronto, improving travel towards the west end of the city into nearby Mississauga, Canada's sixth largest city, thereby improving the quality of life for numerous commuters who travel daily between these two cities overlooking Lake Ontario. The ECWE project is a 9.2-kilometre extension of the Eglinton Crosstown light rail transit project. The extension will run from the future Mount Dennis station to Renforth Drive. The system will have connections to several local and regional transit services, including Union Pearson Express and Kitchener GO train lines, GO bus routes, and local TTC and Mississauga MiWay bus services. Plans are also being explored to connect ECWE to Toronto Pearson International Airport. The project considers forecasted population growth in the Greater Toronto and Hamilton Area population from 7 million to more than 10 million by 2041. By the same year, the extension will see close to 70,000 daily rides and bring 37,500 more people within walking distance to transit.

PROJECT DETAILS

Start date
2021

Category
Metro

Client
METROLINX / INFRASTRUCTURE ONTARIO AND LANDS CORPORATION

Type of excavation:
TBM

BENEFITS

1. Modal shift from road to rail

2. Reduces annual greenhouse gas emissions up to 5,800 tCO_{2eq} per year

3. Improved transport capacity, supporting GTHA's population growth

4. Improved quality of life for people commuting between the cities of Toronto and Mississauga

Sydney Metro West – Eastern Tunnelling Package

Sydney, ***Australia***

We are involved in the construction of the final section of the Sydney Metro West – Eastern Tunnelling Package (ETP). The ETP works include construction of tunnels under Sydney Harbour, between The Bays and the Sydney Central Business District (CBD), and the excavation of Pyrmont and Hunter Street stations. Sydney Metro West will double the rail capacity between Greater Parramatta and the CBD, with an estimated journey time of around 20 minutes between the two centres. With this project, we are once again excavating a railway crossing under Sydney Harbour, having completed the tunnel and station excavation works for the Sydney Metro City & Southwest project in 2022, where we built the first rail tunnels beneath Sydney Harbour, a testimony to the quality of our work.

PROJECT DETAILS

Start date
2022

Category
Metro

Client
Sydney Metro – Transport for NSW

Type of excavation:
TBM

BENEFITS

1. Over 10,000 direct jobs and 70,000 indirect jobs will be created

2. Doubles rail capacity between Greater Parramatta and the CBD

3. Reduces congestion

4. Reduces travel time

5. Reduces greenhouse gas emissions

Metro São Paolo – Line 2, Section 2

São Paolo, ***Brazil***

Ghella is involved in the design and construction of the extension of Green Line 2 of the São Paulo metro. The project entails construction of a main double-track tunnel with a diameter of 11.4 meters and a length of approximately 6 km, two underground stations, and ancillary works. Once completed, Section 2 will make it possible to connect the Municipality of São Paulo to the Municipality of Guarulhos, through various interconnections to the urban lines, both rail and road, extending the public transport service to various city districts and to a much wider passenger user base than at present.

PROJECT DETAILS

Start date
2021

Category
Metro

Client
Companhia do Metropolitano de São Paulo

Type of excavation:
TBM

BENEFITS

1. Extends the public transport service out to various city districts

2. Improved public transport capacity

3. Reduced congestion

4. Reduction in travel times

5. Reduction of greenhouse gas emissions

Sydney M6 Stage 1

Sydney, ***Australia***

The construction of Transport for NSW's M6 Stage 1 in Sydney plays a key role in the NSW Government's 40-year transport strategy, which is aimed at improving the connectivity and quality of the state's infrastructure network. We are involved in the construction of two 4 km road tunnels which will link the new M8 expressway at Arncliffe with President Avenue at Kogarah, as part of the CPB Contractors, Ghella and UGL joint venture. The South Sydney region will finally be connected to the city's growing expressway network, making travel easier, faster and safer. Directing the road traffic underground will allow vehicles to bypass 23 sets of traffic lights on the Princes Highway, thus cutting driving time and reducing traffic congestion. At the same time, the surface road section will be more usable by the local community, enhanced by the creation of a new 5 km pedestrian and cyclist pathway. All of this will increase the area's liveability and help make Sydney a more accessible city.

PROJECT DETAILS

Start date
2021

Category
Highway tunnel

Client
NSW Government

Type of excavation:
Roadheader

BENEFITS

1. The number of trucks on surface roads will be reduced by more than 2,000 per day

2. The project will reduce traffic on General Holmes Drive by 10,000 vehicles per day providing the opportunity to improve the foreshore amenity of Brighton Le Sands

3. Improved travel times and reliability for road users travelling between Southern Sydney and strategic centres in Greater Sydney while supporting faster and more reliable times for local bus customers and road users in Southern Sydney

4. Transformed parklands that connect with Country and enhance the natural environment for the community to live, play and experience

New Zealand, Central Interceptor
Photo by Giulia Parato from the photographic project "Nuove avventure sotterranee"

Turin Median Collector

Turin, ***Italy***

Nicknamed the "idropolitana", the Collettore Mediano di Torino [Turin Median Collector] will become the new backbone of Turin's sewage network, running parallel to the existing one. It will extend 14 km under Turin at a depth of 20 metres, connecting the southern part near Moncalieri with the northwestern area, and directing water flow to the Castiglione Torinese sewage treatment plant. This project will tackle climate change-related issues, such as the increased mixed flows that the old collector can no longer support. It will also enable extraordinary maintenance of the current network and play a key role in environmental depollution by transporting mixed and pure quality rainwater, often laden with pollutants, to SMAT's Water Reclamation Centre in Castiglione Torinese, thereby reducing wastewater pollutants and preventing reflux into the River Po. As part of the project, remediation work will tackle the presence of World War II ordnance and environmental upgrades will be made: for every shrub removed to facilitate work along the collector route, a new tree will be planted.

PROJECT DETAILS

Start date
2023

Category
Hydraulic Tunnel

Client
Società Metropolitana Acque Torino (SMAT)

Type of excavation:
TBM, micro-tunnelling, and manual excavation with forward movement

BENEFITS

1. Increased capacity of the sewer network.

2. Adaptation to climate change

3. Reduction of pollutant concentration in wastewater

4. Reduction of wastewater runoff into the River Po

Central Interceptor

Auckland, ***New Zealand***

Watercare's 14.7 km long wastewater tunnel will be the longest bored tunnel in New Zealand. In older parts of Auckland, there is a combined sewage/rainwater network. During heavy rain, the system becomes overwhelmed, and overflows occur into local streams and beaches. The Central Interceptor tunnel will capture the combined flows and convey them to Māngere Wastewater Treatment Plant for processing. The Central Interceptor project will reduce around 80 per cent of these wet-weather overflows and will improve the water quality of local waterways. The tunnel will be 4.5 m in diameter and will start in Grey Lynn and run underneath the Manukau Harbour to central Auckland to depths of between 15m and 100m below the surface.

PROJECT DETAILS

Start date
2019

Category
Water tunnel

Client
Watercare Services Ltd

Type of excavation:
TBM

BENEFITS

1. Reduction of wastewater overflows into local streams and beaches

2. Cleaner waterways and beaches

3. Improved network capacity to serve the expanding city of Auckland for the next 100 years

E6 Clean Water Tunnel

Oslo, ***Norway***

This project involves the construction of a new water supply system for the population of Oslo, which currently gets its drinking water from Maridalsvannet Lake. At the moment, a disruption to the existing supply system could have serious consequences for the entire city. The project includes a feeder tunnel for bringing water from Holsfjorden Lake, 19 km from the city boundary, a groundwater treatment plant at Huseby, and a tunnel for the transfer of clean water across the city. In a joint venture with AF Gruppen, Ghella is responsible for the construction of the clean water distribution system. The network will connect to the already operational water treatment plant in Oset, reinforcing the connection between East and West Oslo. This will ensure that the city will have two major water reservoirs and a redundant water supply system, thus protecting the people of the Norwegian capital from the consequences of any malfunctions.

PROJECT DETAILS

Start date
2022

Category
Water tunnel

Client
Municipality of Oslo

Type of excavation:
TBM and conventional tunnelling

BENEFITS

1. Ensures clean water supply for a rapidly growing population

2. Reduces network losses and water wastage

Campolattaro Dam - Sections 1-2

Campolattaro, ***Italy***

Ghella is involved in two of the three sections for the design and execution of works at the Campolattaro Dam, in the province of Benevento. This project is one of the seven national strategic interventions included in the PNRR and involves one of the main water storages in the centre-south of Italy. Designed in the 1960s by the Cassa del Mezzogiorno for irrigation purposes, the construction was stopped, leaving it incomplete and non-operational. Once completed, branch networks will extend from the reservoir to supply water resources to twenty municipalities in the Benevento area and other aqueducts in Campania, aiming to ensure water autonomy for the region.
In particular, the first section includes the construction of a diversion tunnel approximately 7.5 km long, building a drinking water plant with a maximum capacity of 3,000 l/s, and a 30,000 m³ storage tank and the commissioning of both a water purification plant and a hydroelectric plant. The second section involves building a drinking water adduction line, an adductor branch line, and related works to upgrade the aqueducts in the Benevento area by laying about 110 km of pipelines with diameters ranging from 400 mm to 1,800 mm.

PROJECT DETAILS

Start date
2023

Category
Hydraulic tunnel

Client
Campania Region

Type of excavation:
TBM-EPB (Earth Pressure Balance) with an excavation system designed for use in the presence of gas

BENEFITS

1. Enhanced drinking supply benefiting more than 2.5 million people

2. Irrigation of approximately 15,000 hectares supporting agricultural production

Italy, Canosa Sannita
Canosa 1

Renewable energy

In addition to our presence in the major public infrastructure sector, we are active in the **renewable energy** sector through the development, construction, and operation of power generation plants from renewable sources, with a focus on photovoltaic and hydroelectric projects in Italy, Central America, and the Middle East.

Since 2010, alongside our core business in tunnelling infrastructure projects, we have expanded into the **construction and operation of photovoltaic plants in Italy** through our subsidiary **Gransolar Ghella**.

This business branch directly supports the objectives outlined in the Ecological Transition Plan[6], aiming to achieve a 72% share of electricity from renewable sources by 2030, compared to the current 35%. Additionally, it indirectly promotes the expansion of production and employment opportunities within an increasingly significant **supply chain**. To date, we have installed a combined capacity of **66 MW** in photovoltaic plants located in Abruzzo, Lazio, Molise, and Puglia. The total energy production since the start of operations until 31 December 2023 exceeds **1,087 GWh**, resulting in **greenhouse gas emission savings** of **over 544 thousand tCO$_{2eq}$**. In 2023 alone, our plants generated **81 GWh** of clean energy, equivalent to **68%** of Ghella's global electricity requirements for the same year, with a corresponding reduction in greenhouse gas emissions of about **41 thousand tCO$_{2eq}$**.

Our plants include both privately funded projects and **projects realised through partnerships** with **Municipal Administrations**, such as those in Abruzzo and Lazio. This dual approach underscores our commitment to being a catalyst for **opportunities** in both the **social** and **environmental** domains within the communities where we operate.

Since becoming operational, our facilities have generated substantial economic benefits for the municipalities involved, thereby creating **shared value** with the community through:

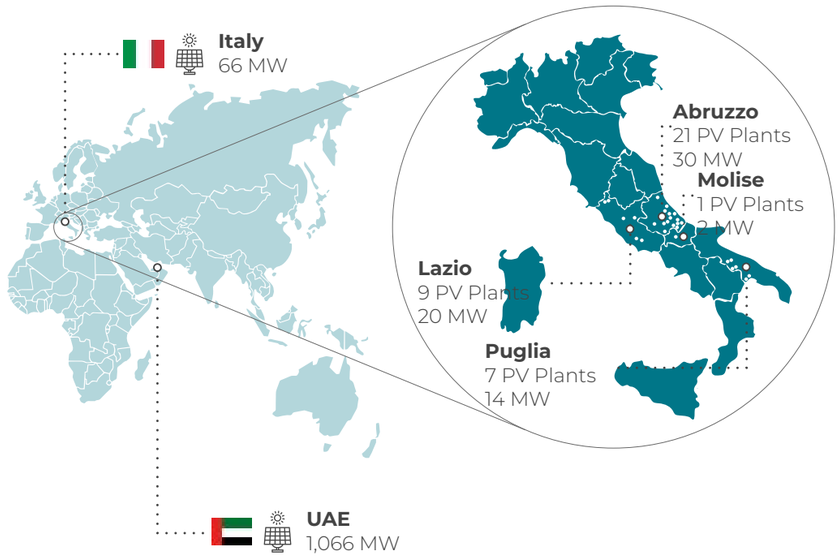
- the improvement of **citizen services**, such as school bus shuttles, reduced taxes, sports facilities for youth, and support for low-income families.
- the implementation of **measures to decrease electricity consumption** through LED lighting systems or small-scale photovoltaic installations for municipal utilities.
- the landscaping of **municipal green areas**.

In addition, our long-standing presence in the area has nurtured a relationship of trust and support with local governments, which, in some cases, has led to our direct involvement in municipal road maintenance projects, contributions to social events for youth, and organising school visits to our facilities to raise awareness about renewable energy. Since the end of 2021, we have initiated a series of studies dedicated to **revamping** and **repowering** photovoltaic plants with module degradation exceeding the 2010 executive design forecasts, some of which are still within their life cycles. In **2023**, revamping activities addressed 8 MW of capacity, supplementing the 8 MW already replaced in 2022, with a **4 MW capacity boost** through repowering, while during 2024 an additional 11 MW is scheduled for replacement.

By the end of 2022, Ghella Spa had established Ghella Green, a wholly owned subsidiary, whose purpose is to construct new photovoltaic plants in Italy and optimise energy sales through managing Power Purchase Agreement (PPA) contracts with major energy traders. In 2023, Ghella Green installed three 1 MW plants in the industrial area of Pontinia (LT) and preparations are in progress for another 1 MW installation in the industrial area adjacent to the Moricone (RM) depot, owned by Ghella Spa, in 2024. Additionally, Ghella Green aims to secure authorisations for approximately 20 MW of new plants in Italy by 2024.

To maximise **recovery** opportunities and promote a **circular economy**, we conducted a comprehensive inventory of recoverable materials and facilitated the valorisation of recyclable materials through dedicated collection processes. Additionally, we conducted a comprehensive study to assess the overall impact of revamping operations in terms of CO_2 emissions, with the aim of minimising their environmental footprint. Particularly relevant is the initiative to **donate** a portion of the **modules that are still operational** to the **municipalities** where the plants are situated. These modules will be employed to develop small-scale systems catering to municipal utilities, thus alleviating the financial repercussions associated with the substantial rise in energy costs recorded in recent years. In addition, during 2023 approximately 420 kW of modules that are still operational were **repurposed** for use in the **barracks and base camps** of the Cancello-Frasso Telesino section of the AC/AV Naples-Bari Railway project.

Lastly, in the United Arab Emirates, we participated in the construction of a 1,066 MW power plant through our involvement in the DEWA Phase III PV Solar Power Project, securing a construction, operation and maintenance (EPC and O&M) contract targeting an average annual production of 2,000 GWh.



Recently completed projects

Athens Metro - Line 3 extension

The Athens Metro Line 3 extension to Piraeus, and the opening of the three new stations called “Maniatika”, “Piraeus”, and “Dimotiko Theatro”, were announced by the AVAX-Ghella-Alstom consortium on 7 October 2022. The first three stations, “Nikaia,” “Korydallos,” and “Ag. Varvara” had been completed two years earlier. At the opening ceremony, the Prime Minister of Greece, Kyriakos Mitsotakis, congratulated all parties involved for completing the project so timely. He pointed out that Greece had set a benchmark for constructing projects like this metro, demonstrating that infrastructure like this can be built while still prioritizing cultural heritage. This project will ease traffic congestion in Greece’s largest port and provide a link to Athens International Airport in under an hour.

Follo Line

On 12 December 2022, King Harald V of Norway was joined by the Crown Prince, the Prime Minister, the Minister of Transport, and the CEO of Bane NOR to officially launch the Follo Line project, primarily constructed by the Acciona-Ghella JV. Following the ceremony, the King travelled by train from Oslo to Ski, a trip that took just 11 minutes. The project will help decongest the Norwegian capital and reduce the amount of traffic caused by commuters, enabling residents to live outside of the city while enjoying their journey there and back, leaving their cars at home.

Sydney Metro City & Southwest

The Sydney Metro City & Southwest project entered its testing phase in 2023. The metro’s new trains are undergoing trial runs inside the 15.5 kilometre twin railway tunnels extending the Metro North West line from Chatswood to Sydenham, and for the first time in the history of NSW transport they are traveling deep below Sydney’s harbour. Testing will last until the end of 2023, while from 2025 onwards it will be open to the public. At this point, passengers will be able to travel from Central station to Chatswood station in 15 minutes, from Martin Place station to Sydenham station in 11 minutes, and from Victoria Cross station to Barangaroo station in just three minutes. The initiative was given the highest-ever ISC IS rating score of 100, or the ‘Leading’ level, for its efforts. This achievement is mostly attributed to the Tunnel Boring Machine’s (TBM) novel assembly process, which is performed not only on the surface but within the tunnelling site itself. This innovation’s sustainability advantages include less resource consumption, lower community impact, and better worker safety. The final project resulted in a reduction of 47,987 tonnes of CO_2 equivalent and 33% fewer materials consumed compared to the footprint quantified for the Base Case.

Matanza Riachuelo

On 30 November 2022, the building of the hydraulic collector for Section 1 (Left Margin Collector) of the Matanza Riachuelo Project was finished. This section is about 40 km long. The contractual 12-month warranty and maintenance period commenced on 1 December 2022. Once finished, the Matanza Riachuelo Basin environmental remediation project in Buenos Aires will rank among the most globally significant aquifer purifying projects. It will improve water quality and greatly lessen pollution in the Rio de la Plata, one of the most polluted rivers in the world.

Profile

Michele Petris

Tunnel Construction Manager
Central Interceptor, New Zealand

1) How long have you been with Ghella and what has your journey been so far?

I have been working in this sector for 30 years and over time I have taken part in several tunnel construction projects employing both mechanised and traditional excavation methods. My work has afforded me the opportunity to travel extensively for projects, spanning continents from Asia to Europe to America.

I have been with Ghella for a decade now, and from day one I’ve felt like part of the family. My journey began in Greece, as a Site Manager on Line 3 of the Haidari-Piraeus project. Later, I was transferred to Sydney as Tunnel Manager, where I played a pivotal role in a groundbreaking project—the first of its kind in Australia. This project involved a dual excavation beneath Sydney Harbour, presenting unique challenges like shallow overburden and high excavation pressures due to water depth.

Presently I am based in New Zealand, overseeing the excavation of the main tunnel for the Central Interceptor project as Tunnel Construction Manager. This project presents unique challenges due to the substantial size of the shafts and the considerable length of the tunnel (14.7 km), which must be excavated using a TBM. Given the diverse geological compositions and operational complexities, thorough planning is paramount to ensure effective maintenance of the machine.

2) Can you briefly describe your role?

In New Zealand I have a dual role, that of Tunnel Construction Manager and A-Grade Tunnel Manager.

As Construction Manager, I am responsible for overseeing the project’s management across different aspects: from personnel management to the scheduling of the works to cost optimisation. I am involved in design and planning processes and coordinate all aspects related to TBM excavation. Additionally, I am involved in the production of segment and the disposal of excavated soil, while also maintaining external communication with the client.

As A-Grade Tunnel Manager, my main role involves overseeing the safety of underground work and ensuring compliance with New Zealand’s stringent mining regulations, which mandate high standards of workplace health and safety.

Obtaining this position required a year of balancing work with studies to attain the A-Grade Tunnel Manager Diploma, which involved passing multiple written exams and undergoing an oral interview conducted by a national commission.

Additionally, I lead accident investigations, even those involving minor incidents, which carries significant responsibility.

3) How do you think your work can contribute to improving the sustainability performance of Ghella’s projects?

The tunnelling industry has seen substantial advancements in safety and environmental protection over the last 30 years, reflecting a significant evolution in practices and standards.

The adoption of mechanised excavation with TBMs has been instrumental in reducing environmental impact, both in rural and urban settings. This technology has streamlined tunnel construction timelines and simplified the management of excavated materials.

As a team, we are committed to minimising the risks associated with TBM operations and to continuously enhancing safety standards. To achieve this, we have installed electronic interlocks to reduce certain potentially hazardous movements and have developed comprehensive procedures to protect workers from exposure to risks as much as possible.

I believe that my experience, spanning a significant technological transition, helps me to create a working environment where safety and environmental protection are consistently prioritised.

4) What is the most stimulating aspect of your job?

There are many stimulating and positive elements to this job, contributing to a rewarding and enriching experience in multiple ways.

What truly motivates me is being challenged. In a dynamic and ever-changing environment, there’s always room for new learning and improvement. Each day offers chances for personal development as I tackle technical and logistical hurdles head-on, continuously pushing my boundaries.

Likewise, another aspect that I find equally invigorating is the opportunity to interact with new people, which complements my lifelong love for travel and discovering diverse cultures.

LED lighting systems
Reduces energy consumption

Electrical vehicles for transportation of muck, materials and/or personnel
Improves air quality in the tunnel; possibility of selecting electricity produced from renewable sources and reducing CO_2 emissions during logistics

Automatic control systems in construction plants
Reduces waste and wear through real-time monitoring

Recovery of excavated materials on site and off site
Reduces the amount of material to be extracted from quarries and the amount of material to be disposed of

Steel fibres or hybrid fibres for segment reinforcement
Reduces the material CO_2 emissions

Concrete with reduced cement and cement-free mixes
Reduces CO_2 emissions of materials

Use of a refurbished machine
Reduces resource consumption and CO_2 emissions in comparison to producing a brand new machine

Electric machine
Possibility to select electricity produced from renewable sources and reduce CO_2 emissions during excavation

Software for operational parameters optimization
Reduces energy consumption and soil conditioning

Internal closed circuit with heat exchanger
Reduces water consumption during machine cooling

TBM+
Towards a more sustainable excavation

Bentonite recirculation to ensure stability at the excavation face with a Hydroshield TBM
Reduces resource consumption

Selection of biodegradable soil conditioners, machine oils and other lubricants
Minimizes soil pollution

Continuous mining system for ring assembly
Reduces operation time and resource consumption

People

"Amidst growing awareness for social welfare and environmental conservation, felt by us today and in years to come by the next generation, it fills me with immense pride to know that I am part of a community dedicated to these causes"

Alessandra Tana
Precast Concrete Tunnel Lining Manager

Italy

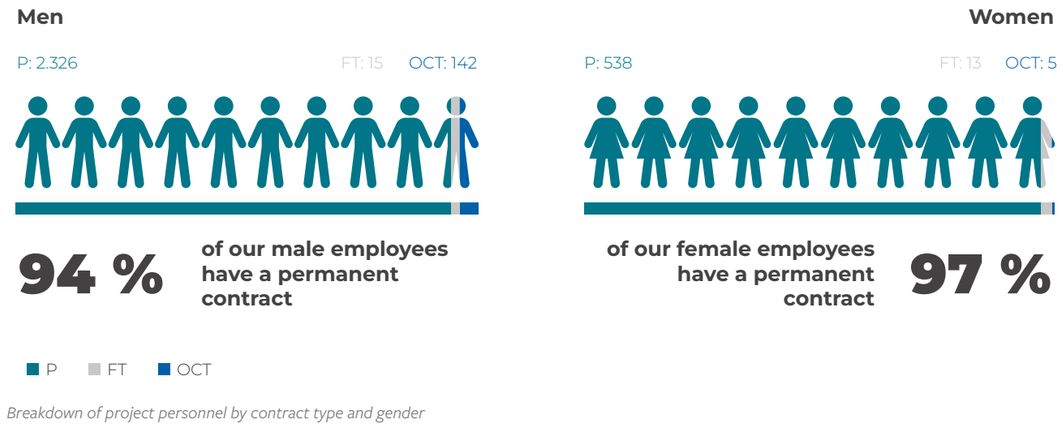
Valuing individuals lies at the heart of our ethos. Concern for people is a **pillar** of our ESG Strategy, and in our newly launched Sustainability Plan 2023-2025 we have reconfirmed our commitment to prioritising workplace health and safety, to enhancing employee welfare and growth, to championing equal career opportunities, and actively listening to the needs of local communities that will benefit from the projects we undertake.

Our social targets consist of achieving zero accidents, beginning with a 30% decrease in the LTIFR (Lost Time Injury Frequency Rate) by 2030 compared to 2021, and striving for 30% female representation in management positions by 2030.

The certification of our management system to the SA8000 standard and its validation through the new ISO 30415 highlights our ongoing commitment to nurturing and preserving human capital.

Our people

In line with our Code of Ethics, our people are our most valuable **strategic asset**. This is not only because having dedicated and highly skilled personnel is essential for executing work with expertise, but also because we believe that sharing and exchanging ideas and values is crucial for achieving excellence. Through diligent and conscientious management, we promote trust, transparency, and collaboration, nurturing an environment that is open and inclusive. The Human Resources department is responsible for planning the workforce required to implement our organisational strategies. It oversees and approves the recruitment and selection of personnel for both headquarters and for **key roles** in production units and international offices, ensuring uniform coordination and excellence in the areas of expertise. During the construction phase of projects, operational oversight and monitoring of significant human resources aspects are managed by the Human Resources departments responsible for projects which report progress as part of regular updates to clients and to the company's head office.



Breakdown of project personnel by contract type and gender

Norway, Oslo
Follo Line

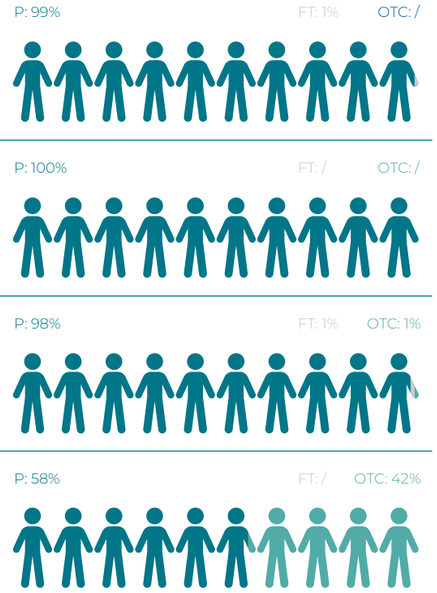
Approximately **94%** of our personnel have permanent employment contracts. When only considering site personnel, this percentage slightly decreases to 93%, while approximately 7% of our workforce consists of casual workers, typically specialised personnel required for complex yet time-limited tasks. To enhance both the personal and professional growth of our existing workforce and enrich the company's assets and expertise, we prioritise transferring existing personnel to new contracts.

In 2023, the companies and foreign offices alone employed 845 direct employees, with women comprising 24% of this workforce.

Overall, our total number of employees stands at 3,039, with 72% of them engaged in projects. The region with the highest female representation is Oceania, averaging at 19%. In contrast to earlier reports, we have expanded the scope to include the most significant subsidiaries in terms of workforce. Specifically, we have incorporated 2 Italian and 4 foreign companies, resulting in a total of 632 employees.

Given the nature of our industry and the specific expertise required for our activities, projects are typically executed through joint ventures, where the percentage of our participation varies.

Of the personnel employed on contracts through joint ventures or consortia, 90% are recruited locally, or reside permanently in the country where the contract exists to which they have been assigned. This percentage mirrors that of previous years and underscores our deliberate strategy of integrating the local community into the company's activities.



Breakdown of project personnel by contract type and geographical area (please note that Europe excludes Italy)

P = Permanent, FT = Fixed Term, OTC = Other type of contrat

In Canada, workers with different contract types are typically union labourers employed under a collective agreement, which outlines the terms and conditions of employment specific to the project. In 2023, our records indicate a total of over 5,000 non-employee workers, primarily comprising labourers hired by subcontractors. This group also includes consultants and designers. As of 31 December 2023, we had 74 interns, mainly young engineers. Furthermore, in Australia, there are opportunities to participate in a project aimed at integrating new immigrants into the workforce, such as refugees or asylum seekers. Often, many individuals involved in these valuable experiences join our organisation as permanent employees.

Good to great initiative for worker wellbeing in Central Interceptor

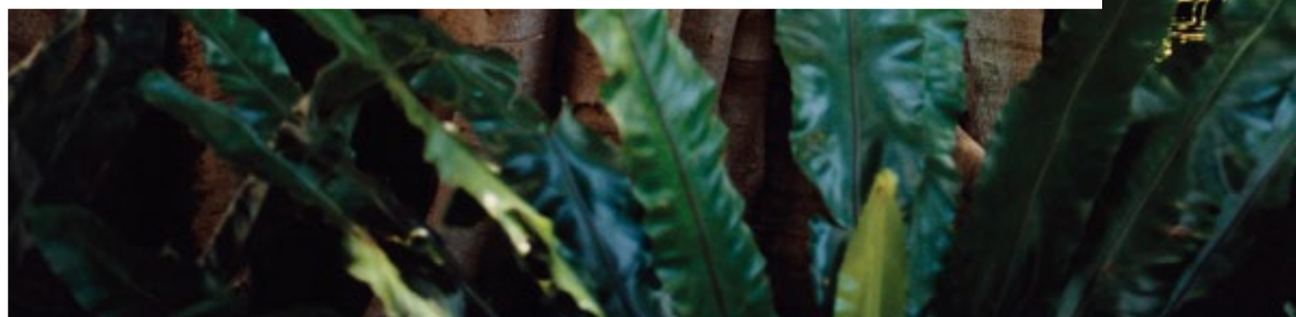
People care is a pillar of our ESG Strategy. It is ingrained in our company ethos. At Watercare's Central Interceptor project in Auckland, New Zealand, constructed by Ghella Abergeldie JV, looking after our people is key and was the motivation for the 'Good to Great' initiative. This groundbreaking initiative focuses on improving the health, safety and wellness of the project's workers and lifting the standard in every aspect of their working environment.

It begins with a mandatory 2-day project induction, addressing all aspects of safety on the project, including the promotion of good mental health through 'MATES in Construction', an organisation providing training and support for which the Central Interceptor was an NZ founding member.

A purpose-built Training Centre is home to all inductions and training. The need for safe and secure working environments has resulted in world class site facilities, which include covered/delineated walkways, heating in outdoor areas, coffee machines, shower facilities, drying rooms, high-quality PPE (also provided to subcontractors free of charge). PPE is laundered at Te Whare Manaaki, the project's purpose-built laundry facility.

Good nutrition was seen as a key component of staff welfare. A commercial restaurant was engaged to design and deliver a catering service for staff across 16 sites, providing an average of 4000 subsidised hot and nutritious meals per month. These meals are provided for night shifts as well.

'Good to Great' demonstrates the Central Interceptor's commitment towards improving industry standards and placing greater importance on worker wellbeing.



Diversity and equal opportunities

We meticulously follow best human resources management practices by embedding diversity and equal opportunity principles into our Integrated Management System, which involves defining specific policies and procedures, such as the "Human Resources Management Policy", the "Equality, Diversity and Inclusion (EDI) Policy", and the "Human Resources and Organisation Procedure".

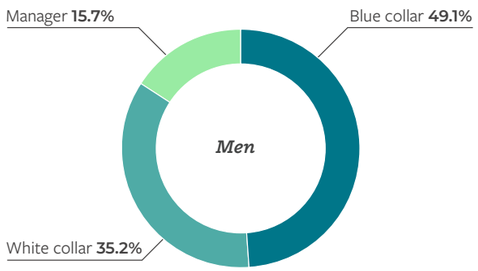
Our procedures ensure that personnel are hired solely based on the skills they possess, and applications received by the company, keeping a record of the CVs reviewed during the selection phase. Today, the company employs individuals of diverse nationalities, genders and ages, in a multicultural and stimulating working environments.

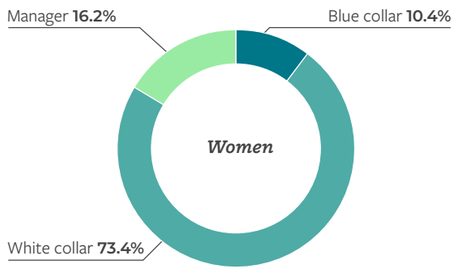
We condemn any kind of discrimination and promote a culture of respect for EDI principles, including through specific training. The 'Policy for Appropriate Behaviour in the Workplace' clearly defines the forms of inappropriate behaviours censured by the company and provides guidance on the reporting channels available to employees through the 'Whistleblowing Policy'. The ISO 30415 validation confirms that the organisational approach adopted is strongly oriented towards valuing diversity and promoting an inclusive environment and demonstrates, once again, that caring for people and their well-being is a core value for our organisation.

In 2023, the breakdown of employees by gender into the three professional categories was confirmed, as shown in the below table. Overall, females make up about one third of the white-collar workforce.

		2021		2022		2023	
		Men	Women	Men	Women	Men	Women
Manager	n.	245	49	393	78	390	90
White collar	n.	695	252	991	403	873	408
Blue collar	n.	668	9	685	33	1.220	58
Total	**n.**	**1,608**	**310**	**2,069**	**514**	**2,483**	**556**
Manager	%	83.3%	16.7%	83.4%	16.6%	81.3%	18.7%
White collar	%	73.4%	26.6%	71.1%	28.9%	68.1%	31.9%
Blue collar	%	98.7%	1,3%	95.4%	4.6%	95.5%	4.5%

Comparison in 2021, 2022 and 2023 of the gender breakdowns in each professional category





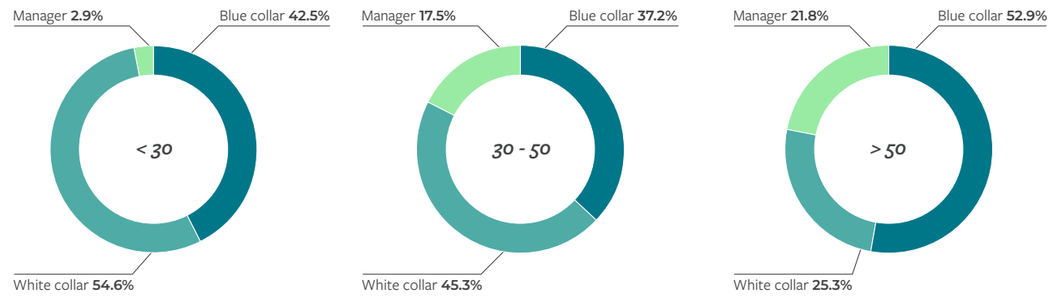
Distribution of employees by professional category in 2023 (total % according to gender)

In 2023, women in managerial positions represent **18.7%** of the total number of employees in the same category. Women in management and coordination roles are more prevalent in Australia and Canada.

We promote the hiring of young resources in all company areas to create a pool of young professionals who can be trained internally to manage the process of generational changeover, both in the offices and at contract sites, while maintaining and expanding the wealth of technical knowledge acquired. In fact, the proportion of personnel under 30 years of age is growing steadily, reaching 19% in 2023.

		2021			2022			2023		
		<30	30-50	>50	<30	30-50	>50	<30	30-50	>50
Manager	n.	2	179	113	6	305	160	17	301	162
White collar	n.	220	544	183	339	789	266	315	778	188
Blue collar	n.	97	400	180	129	405	184	245	640	393
Total	**n.**	**319**	**1,123**	**476**	**474**	**1,499**	**610**	**577**	**1,719**	**743**
Manager	%	0.7%	60.9%	38.4%	1.3%	64.8%	34.0%	3.5%	62.7%	33.8%
White collar	%	23.2%	57.4%	19.3%	24.3%	56.6%	19.1%	24.6%	60.7%	14.7%
Blue collar	%	14.3%	59.1%	26.6%	18.0%	56.4%	25.6%	19.2%	50.0%	30.8%

Comparison in 2021, 2022 and 2023 of the number of employees by occupational category and age group



Breakdown of project personnel by professional category in each age group

Considering only the companies within the scope of reporting, around 54% of the company's workforce are office personnel. On the other hand, in contract companies, about 52% of the personnel are employed as manual workers.

Australia, Sydney
Eastern Tunnelling Package

Smoking Ceremony and blessing TBMs

Pre-employment programs in M6 Stage 1

Equality, diversity and inclusion (EDI) represent key priorities for Ghella, underpinning our activities at both corporate and project level. With this spirit, the M6 Stage 1 project in Sydney, Australia, activated pre-employment programs to contribute to the integration of disadvantaged groups within its workforce and to boost gender diversity.

Empowering the Indigenous Community

In 2023 CGU, the joint venture building Transport for NSW's M6 Stage 1, in partnership with MobReady, a socially inclusive Group Training Organisation, ran a three-week pre-employment program for Aboriginal and Torres Strait Islander participants. The aim of this project-based initiative was to provide pathways into the construction industry for the Indigenous community through a supportive and culturally safe program.

This program forms part of CGU's commitment to Aboriginal Participation and Workforce Development and is just one of the many programs that contribute to the project's ongoing culture journey.

Over the three weeks of extensive training, the candidates had exposure to work health and safety, white card training, local risk control initiatives, planning and organising work, site visits, superintendent interviews, operating equipment and various hand tools and personal wellbeing in the workplace. The training then finished with a graduation and presentation ceremony.

CGU offered full-time employment to a number of the participants who successfully completed the program who are now members of the M6 Stage 1 team.

Untapped potential – Supporting women to enter construction industry through training

This year, five new program graduates were welcomed to M6 Stage 1, as part of a Women in Construction Pre-employment Program. The program first ran last year and has had positive results for the project and construction industry. With no previous construction experience necessary, the program was designed to boost female participation on major project sites like the M6 Stage 1 and create a step change to benefit the entire industry.

Over the three-week comprehensive program, the participants undertook various training to obtain qualifications that set them up with skills to kick start their careers in construction, including work safely at heights, load and unload plant, provide first aid, conduct local risk controls and more. They also visited underground at the Rockdale tunnelling site to see first-hand tunnel construction.

Five of the women graduating from the training program are now working on M6 Stage 1 while also completing their Certificate III in Civil Construction.

Human capital development

The training process involves identifying the training needs of all our personnel. We engage with each employee to understand their situation and identify the most appropriate training methods, including on-the-job training, e-learning, and in-person training. Training plans are formulated, based on both the development needs identified in collaboration with departmental managers and the strategic requirements for skill enhancement.

Resources for providing courses are procured from inter-professional funds, ensuring there is always a budget available for development activities.

In 2023, 12,781 hours of training were delivered to the 845 direct employees of Ghella S.p.A. and other companies within the reporting scope, averaging about 15 hours of training per employee. The joint ventures and consortia within this scope reported approximately 40,000 hours of training[7]. Consequently, a total of **54,354 hours** of training were provided in 2023. In addition, we provided more than 21,000 hours of training for non-employee personnel, focusing on sharing our compliance programme, health and safety topics, and technical refresher courses.

New Zealand, Auckland
Central Interceptor

21 hours
average hours of training | 2021

25 hours
average hours of training | 2022

26 hours
average hours of training | 2023

19 hours
average hours of training | 2021

23 hours
average hours of training | 2022

17 hours
average hours of training | 2023

Comparison of average training hours provided in 2021, 2022 and 2023 for female and male employees

These figures demonstrate our dedication to ensuring equal access to training opportunities for all employees.

Blue-collar personnel are offered 50% of health and safety training and 30% of technical training.

Moreover, numerous courses are available to support the development of **effective leadership**, such as the highly qualifying course leading to PMP® (Project Manager Professional) certification.

Finally, in 2023, 75% of the employees of Ghella S.p.A., along with those in the companies and contracts within the reporting scope, completed a performance assessment course. This figure, as usual, is affected by the sector's dynamism, resulting in the continuous onboarding of new resources during the year who have not yet acquired sufficient experience in the company to be involved in the activity.

Since 2021, we have implemented the **Rookies Programme** to bring young talent into our organisation. Graduates or undergraduates in Civil, Building or Management Engineering, Economics and Management are given a personalised development path, supported by a mentor to familiarise them with the organisational environment. This year, we introduced the concept of a 'buddy', where a peer of similar age to the 'rookie' helps with their integration. We also offer rookies a comprehensive benefits package, including accommodation, transport, and return trips to their home. In 2023, we have also opened the programme to graduates.

Labour management and employee welfare

Compensation, defined in accordance with principles of fairness, reflects the expertise and professionalism of each employee.

Within an environment where the majority of specialised technical professionals in the industry are male, we actively work towards ensuring equal pay for equivalent duties and job levels.

In Italy, all employees, whether on-site or at headquarters, are bound by the CCNL Edilizia e Industria. Outside Italy, collective labour agreements apply to blue-collar workers, while other direct employees are subject to individual agreements in compliance with local regulations. Another measure to ensure worker engagement is the establishment of the Social Performance Team (SPT), implemented after SA8000 certification, composed of representatives from both workers and management and responsible for conducting regular risk assessments in areas aligned with the SA8000 Standard, as well as monitoring workplace activities.

At the beginning of 2023, the **Welfare** Plan was rolled out to the entire Ghella S.p.A. workforce. Crafted based on the feedback and needs of our employees, it stands as a tangible demonstration of our commitment. A comprehensive selection of services aimed at positively impacting families' purchasing power has been curated. The plan caters to workers, apprentices, clerical personnel, and executives across Italian offices and worksites. Among the offerings are school textbooks, language courses, holiday packages, and memberships to affiliated and non-affiliated sports centres. Additionally, access to platforms providing psychological support is available. Any remaining funds are allocated to charities or organisations supported by Ghella, such as the Sant'Egidio community.

Sustainability culture

Recognising the importance of a corporate culture rooted in sustainability principles, we view it as essential for the successful execution of our ESG Strategy.

Understanding that shared values and awareness are fundamental for reaching collective objectives, we conduct awareness-raising campaigns at both central office and site levels. These campaigns address various aspects of workplace life where all individuals can contribute, such as promoting diversity, implementing effective waste management practices, and conserving energy and water resources. In 2023, a series of training meetings were organised for country and corporate representatives responsible for driving the ESG Strategy within their areas of operation, to share strategic guidelines from top management and engage in discussions on their practical implementation. Additionally, all Ghella S.p.A. employees have access to an internally developed course, in collaboration with a training organisation, focusing entirely on key sustainability topics at Ghella. This course covers topics such as life cycle thinking, carbon footprint, employee welfare, and sustainable procurement, while also assisting in contextualising our efforts within the evolving external landscape. Using the **Intranet**, the **Ghella app**, **LinkedIn** profile, and **Instagram** page is instrumental in disseminating our company culture. These platforms serve as hubs for diverse content, including news updates on various subjects, information and site developments, a brief overview of our company's history, our involvement in humanitarian or social causes, and sustainability initiatives at headquarters and on-site locations. Working in conjunction with other channels like the company **photo archive**, these platforms facilitate ongoing connections between headquarters and worksites, inspiring curiosity through visual content and shared stories fostering lively engagement and interaction.

Valuing individual efforts: sustainable mobility initiatives in Broadway Subway Project

We recognize that achieving sustainable outcomes requires acting on all aspects of our footprint, including the contribution that our people can individually make through their choices.

In 2023, the **Broadway Subway Project** in Vancouver, Canada, conducted a sustainability survey to gauge the current environmental initiatives of our staff and to identify ways the Project can further support their efforts. The survey suggested two initiatives:

Transit Subsidy

The survey revealed that staff members would be more inclined to use **public transit** if they received a **subsidy** to help with the costs. Utilizing public transit over driving a car has the potential to greatly reduce annual carbon emissions. Users of British Columbia's transit system collectively save 307,000 tonnes of greenhouse gases in one year by not driving. Considering this, the Project has implemented a transit subsidy program for its employees. As of January 2024, 127 employees have signed up to the program.

Carpool Program

Many respondents indicated they would be interested in participating in a carpool program if one were available. It is estimated that with 20 participants, the carpool program could reduce Project CO_2 emissions by 7.2 tonnes annually. The Project is supporting this employee lead initiative and is working to have this program operational in 2024.

Besides generating a reduction in **scope 3 emissions** for the project, these initiatives contribute to fostering a **culture** grounded in **sustainability principles** that will effectively facilitate the execution of our **ESG Strategy**.

Health and safety

At Ghella, health and safety are top priorities. We are dedicated to upholding the well-being and safety of our workers as we strive for excellence in our work, with the overarching objective of achieving **zero accidents**.

Ghella's Occupational Health and Safety Management System, certified according to the international standard **ISO 45001:2018** and the **SA8000 Standard**, reflects our unwavering dedication to effectively managing these essential aspects, which have long been central to our operational philosophy.

The nature of our activities exposes workers to potential risks that could have significant impacts on their health and safety. Therefore, within our Management System, we have established protocols for identifying hazards, evaluating risks, and identifying prevention and protection measures. Leveraging the **expertise** gained over many years in the industry, we integrate **lessons learned** and promote **knowledge sharing** throughout the organisation. To continuously enhance our performance, we periodically assess our progress through forums such as the Annual Management System Meeting and **Health and Safety Committees**, including the SA8000 Social Performance Team.

During project implementation, we effectively manage potential health and safety risks by leveraging our expertise and experience, while actively **engaging** with stakeholders. Our engineers are committed to developing more effective and innovative safety measures to maintain strict oversight of all operations. The **hierarchy of controls** involves all levels of the organisation, enabling everyone to report unsafe conditions or offer improvement ideas. To facilitate this culture of transparency, we have established **dedicated communication channels** consistent with our Whistleblowing Policy and SA8000 Social Responsibility Policy.

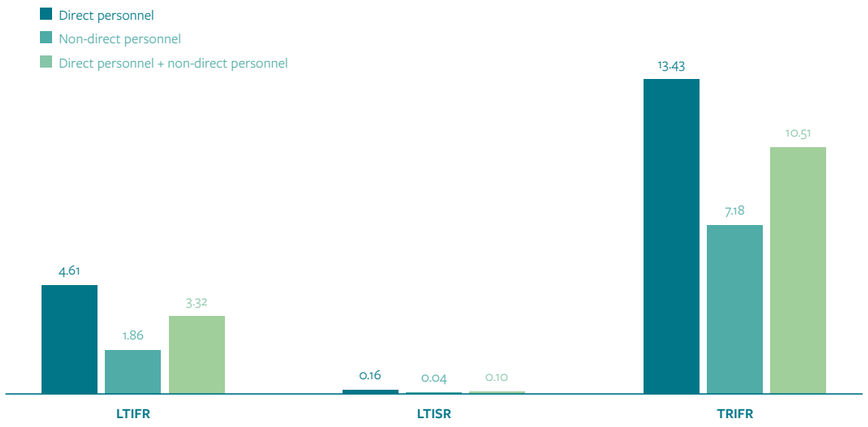
Training is a fundamental tool in fostering and spreading a **culture of health and safety** within our organisation. By nurturing the capabilities of our workforce, we aim to bolster awareness and engagement in health and safety matters. Our training programmes encompass a range of methods, including induction sessions, on-the-job training, internships, e-learning modules, toolbox talks, and routine safety discussions such as daily or weekly meetings and job safety analysis reviews. These methodologies are tailored to meet specific needs and objectives, while also considering the prevailing context and regulatory landscape.

Accident incidence rate

We systematically monitor accidents by conducting thorough analyses to identify root causes and devise improvement measures to mitigate future occurrences of hazardous situations.

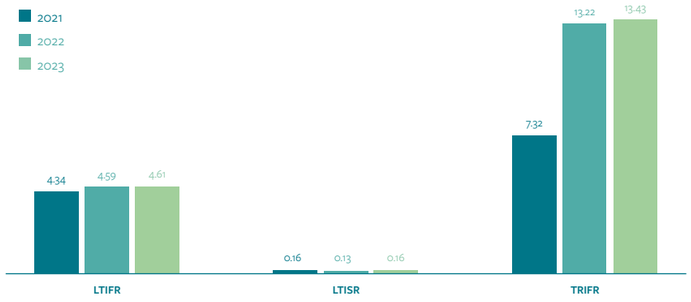
We ensure comprehensive reporting of accident indices, including the frequency index (LTIFR[8]), the severity index (LTISR[9]) and total frequency index (TRIFR[10]), across all Ghella's operations.

The trend of accident indices for the 2023 reporting period is shown below, along with a comparison to the prior two years.



Year 2023 accident index trends for direct personnel, non-direct personnel, and total direct and non-direct personnel

Australia, Sydney
M6 Stage 1

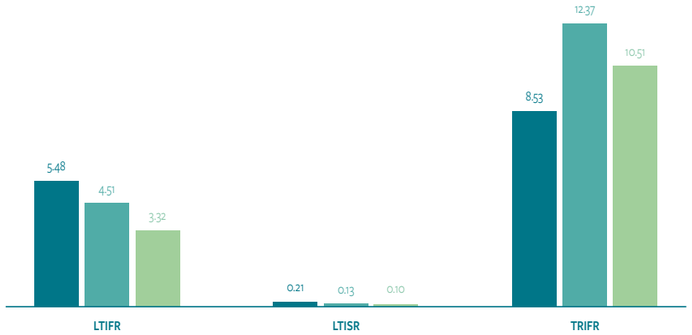


Comparison of accident indices of direct personnel in 2021, 2022 and 2023

The 2023 LTIFR index of direct personnel increased by 0.4% compared to 2022, rising from 4.59 to 4.61, while the LTISR index increased by 23%, rising from 0.13 to 0.16 (see Chart 2). This increase is attributed to several events wrongly classified as accidents. In fact, injuries involving only medication (medical treatment case) or a temporary change of duty (restricted work case), both not requiring absence from work, were erroneously classified as lost time injuries. These events are currently under investigation by the relevant authorities, who may either confirm or reject the claims. Pending their response, all events were reported with the understanding that the data may change following the investigation outcomes, potentially resulting in a reduction in both indices.

Comparison of accident indices of non-direct personnel in 2021, 2022 and 2023

Regarding non-direct personnel, both indicators show a decrease compared to 2022: LTIFR has reduced by 58%, dropping from 4.41 to 1.86, and LTISR has declined by 69%, decreasing from 0.13 to 0.04 (see Chart 3).



Comparison of accident indices of total direct and non-direct personnel in 2021, 2022 and 2023

The overall indices, combining data for direct and non-direct personnel, show an improvement from the previous year, with the LTIFR decreasing by 26% from 4.51 to 3.32, and the LTISR decreasing by 23% from 0.13 to 0.10 (see Chart 4). This positive change is due to the **prevention**, **protection**, and **improvement initiatives** undertaken, including ongoing training and awareness programmes to increase worker involvement, as well as incentive campaigns and recognition.

By **monitoring** proactive and predictive performance indicators and analysing risk assessment outcomes, we can perform targeted controls, focusing on the most critical areas and activities: tunnel work, work performed at heights and live working.

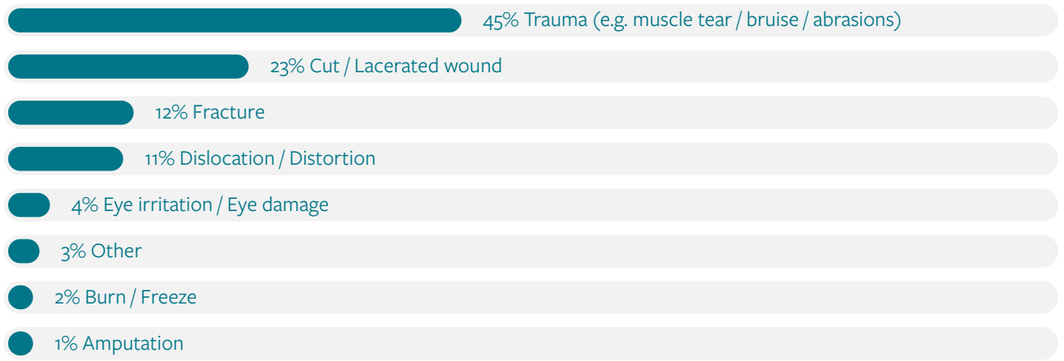
2023	Hours worked	LTI[11]	MTC[12] + RWC[13]	Total recordable worksite injuries[14]	Injuries with serious consequences	Rate of injuries with serious consequences[15]
Direct personnel	12,803,577	59	113	172	0	0
Non-direct personnel	11,278,815	21	60	81	0	0

2022	Hours worked	LTI[11]	MTC[12] + RWC[13]	Total recordable worksite injuries[14]	Injuries with serious consequences	Rate of injuries with serious consequences[15]
Direct personnel	9,154,794	42	79	121	1	0.11
Non-direct personnel	7,260,206	32	50	82	1	0.14

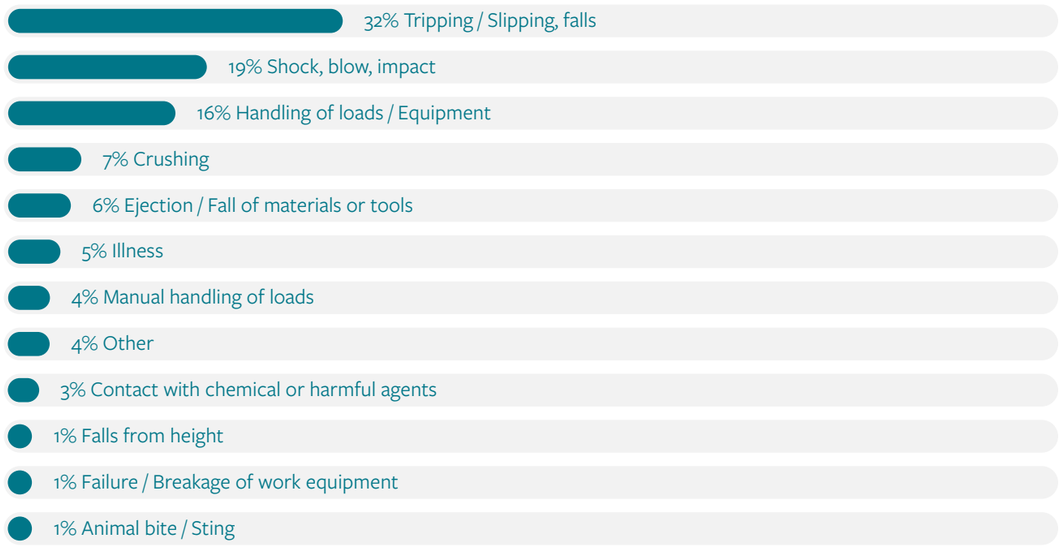
2021	Hours worked	LTI[11]	MTC[12] + RWC[13]	Total recordable worksite injuries[14]	Injuries with serious consequences	Rate of injuries with serious consequences[15]
Direct personnel	7,376,436	32	22	54	1	0.14
Non-direct personnel	7,045,664	47	22	69	0	0

There were no injuries with serious consequences reported. Examining the severity index and the nature of the injuries, which includes both direct and non-direct personnel, reveals that most incidents are insignificant. Injuries sustained by workers mainly involve blunt trauma or cuts/wounds. Below are the details of the analysis of these injuries and their main causes.

Italy, Naples - Bari
Photo by Domingo Milella from the photographic project "Nuove avventure sotterranee"



Analysis of damage caused by injuries 2023



Analysis of injury causes 2023

Considering the nature of our activities and the risk assessments conducted in various production units, occupational hazards posing a risk of serious injury mainly involve physical factors and aspects related to work organisation. The most common causes include slips, trips, falls, bumps, impacts, and improper handling of loads or equipment misuse. Analysis of accident causes has facilitated the identification of corrective actions aimed at reducing the risk of recurrence, such as refining procedures and operational methods, integrating additional safety measures, or implementing new educational and training programmes.

Safety Initiatives in Central Interceptor

Safety is a top priority for Ghella and the topic in our ESG Strategy receiving the highest interest from both internal and external stakeholders.
Watercare's Central Interceptor project in Auckland NZ put in place several initiatives to promote a safe work environment:

Health & Safety Excellence Awards

Excellence Awards for Health, Safety and Wellness are awarded to recipients for their outstanding leadership and dedication to safety on the Central Interceptor. Excellence awards are presented to individuals or teams for their positive and productive approach to health and safety in the workplace, as well as exceptional safety leadership.

Safety Vision & Life-Saving Rules

Good health and safety management is integral to everything we do on the project. During 2023 the focus was our Safety Vision and Life Saving Rules. The Safety Vision incorporates three essential elements:

I THINK SAFE – WE WORK SAFE – WE ALL GO HOME SAFE.

Senior leadership were tasked with attending pre-starts at every site over a period of a week to deliver our Safety Vision directly to workers. We consider engagement at the 'coal face' to be a key strategy in promoting a good safety culture.
A weekly campaign at the 16 work sites included a detailed review of each of the 11 Life Saving Rules followed by site inspections. The Life Saving Rules were also translated into Māori, Samoan, Tongan and Tagalog.

Beacon Sites status

The Beacon Site initiative, developed by the Central Interceptor, recognises those sites that have achieved the highest possible standards, only the very best sites receive this prestigious accolade. The initiative includes a focus on welfare, documentation, plant and equipment, PPE compliance, environment, sustainability, and stakeholder awareness. Sites on the Central Interceptor are good by any measure, but we strive to be the very best the industry has to offer and in doing so leave a legacy for others to follow.
A specific Beacon criterion is now also being developed for TBM operations, once again the Central Interceptor is breaking new ground and pushing boundaries when it comes to health and safety management.

Industry-leading PAPR program advances safety on Sydney Metro – Western Sydney Airport

Health and safety are top priorities for Ghella and one of the topics in our ESG Strategy receiving the highest interest from both internal and external stakeholders consulted within our materiality analysis.

In 2023, the CPB Ghella JV, building the Sydney Metro – Western Sydney Airport, Station Boxes and Tunneling Works (WSA-SBT), spearheaded a construction industry change by rolling out on the project powered air-purifying respirators (PAPR) for silicosis prevention. PAPR helmets ensure there is more pressurized (positive) filtered air inside than outside, to prevent dust particles from entering. This is an advanced alternative to the current industry standard which is the use of disposable P2 masks.

The PAPR helmets are a major Australian construction industry change that CPBG is driving forward across the SBT worksites. All personnel working in the tunnels are required to wear an approved PAPR full-face helmet. Maintenance and storage areas were set up at both the Orchard Hills and Airport Business Park tunnelling sites. The technology has also been rolled out across other major tunnelling projects of which Ghella is part, such as the M6 Stage 1 Motorway.

New Zealand, Auckland
Central Interceptor

Meeting between schools and local communities for replanting

Local communities

Our involvement in public work projects generates **long-term benefits** by improving **services to citizens** and enhancing the **productivity** and **competitiveness** of **local areas**. Furthermore, these projects have positive **environmental** implications; for example, rail initiatives promote the transition from road to rail transport, thereby improving air quality, while water projects prevent wastewater spills into waterways or into the sea.

Our presence in the local area stimulates **economic benefits** through **job creation** at construction sites and across the entire supply chain, as evidenced by our dedication to hiring and involving local resources and businesses. Additionally, the global footprint of our company facilitates **knowledge sharing** between different regions worldwide, fostering the **professional development** of a highly skilled local workforce.

However, we acknowledge that the construction phase of our projects may cause **inconvenience** to communities near construction sites, including **noise**, **vibration**, and temporary closures of roads and public areas. For work in local areas, such as projects for underground metro lines, these inconveniences can be exacerbated by the extra **traffic** created by site vehicles and deliveries of supplies and by the transport of excavated material through urban streets. To address this, we actively **engage** with **local stakeholders** at our construction sites, from the initial construction stages, aiming to provide them with information, seek their input through consultation and mitigate negative impacts whenever possible and offer compensation where feasible.

Initiatives linked to **information** sharing includes:

- individual visits to residents (door knocking).
- on-site meet-and-greet event for JV companies (“Meet the Contractor”).
- initiatives to involve schools adjacent to our construction sites.

Our **mitigation** efforts include:

- installation of noise barriers (such as acoustic insulation cover for our belt conveyors).
- the creation of murals or other artistic works to make certain worksite areas more visually appealing.

Our **compensation** measures may include:

- direct contributions, such as the installation of special openings to reduce noise or the creation of amenities including playgrounds or bike paths.
- indirect contributions, in the form of donations, fundraising campaigns or sponsorship of initiatives that benefit the entire community or vulnerable segments of the population.
- support for businesses adjacent to the construction site.
- some stakeholder engagement initiatives are directly managed by our clients, with the support of site personnel. This is the case for our **visitor centres** set up for schools or individuals, featuring informative displays explaining the various construction and excavation phases, which often arrange organised tours of the construction sites. Given the international scope of our operations, we pay a great deal of attention to **integrating** our expatriate personnel into local contexts: we both emphasise the distinctiveness of our corporate footprint and encourage mutual enrichment. In this same spirit, we **respect the rights and customs of the local populations** and make them the central focus of our efforts to incorporate our personnel into new settings.

Engaging with local cultures: site dawn blessings in New Zealand

A guiding principle in Ghella's projects is our desire to understand and engage with the local cultures of the countries we work in. It's a focus that we are particularly proud of in Aotearoa (New Zealand) on the Central Interceptor project with Watercare. The recognition and prioritisation of te ao Māori, the Māori world view, has been an unforgettable experience for all team members who have taken part in site blessings along the pathway of the CI project.

A Māori cultural advisor, Blackie Tohiariki, has been engaged by the Ghella Abergeldie JV since the very outset of the project and has conducted dawn site blessings at all 16 sites before we start excavating the shafts. During the blessings the team members stand front and centre of the Karakia (prayers or incantations), holding key objects that link to the elements, such as a special piece of rock quartz that comes from the depths of the South Island, and Wai Māori – pure water from a natural source. They also hold taiaha (Māori weaponry) in a neutral position to symbolise respect and protection.
Blackie explained his role with these words:
"My approach to the site blessings is to focus on the fundamental importance of the four elements - earth, wind, fire and water and how they provide for a safe passage for the tunnelling works underground. Our intent is that the workers undertake their tunnelling works safely and then are reunited with their families. This concept of safety directly links to Santa Barbara, the Italian patron saint of miners and tunnellers. We incorporate a statue of her into our site blessings. It's a perfect alignment of Māori and Italian culture with safety, respect and family at the heart of this."

Community engagement at Eglinton Crosstown West Extension (ECWE)

The communities around the infrastructure we contribute to create are the ultimate recipients of our work. Hence, their involvement is recognised by our clients and our construction JVs as a crucial element to measure success. In 2023, the Communications and Public Engagement team of the WestEnd Connectors (WEC) JV, building the Eglinton Crosstown West Extension (ECWE) in Toronto, Canada, has engaged residents and stakeholders in many ways. During the year they have:

- Conducted 14 **community pop-up events**. These are mini events in areas closest to the construction sites. Typically, these pop-ups are in apartment buildings, community parks, major intersections, etc. The purpose is to update or inform the public on the latest construction happening in that area.
- **Canvassed** over 1000 **houses** and spoken with over 800 community members. WEC communications go door to door to drop off construction notices to residents. This also includes interactions and conversations with the public if they are seen outside of their homes.
- Hosted or participated in 6 **open houses** and **community meetings**. WEC invites everyone from the public to come to these events. They have posters, boards, visuals, and all kinds of information for the public to see. The project team comes out, as well as Metrolinx's. People can learn about tunnelling updates and more about the WEC project.
- Conducted quarterly **CLC (Community Liaison Meeting)**. WEC Comms personally invite members of the public who have a good relationship with Metrolinx and WEC and are strong advocates for the project or community. These members can be from the City of Toronto, Councilors or Members of Parliament, residents, board members, property managers, business owners, etc. During the meetings, an exclusive presentation is shown to them, and the stakeholders can directly ask questions to the WEC or Metrolinx project teams.
- Distributed over 43,000 **community notices** to residents.

Connecting with community on M6 Stage 1

Community teams are strategic partners on our projects that work alongside the construction team and provide a conduit for information between the project and the community.

At the end of 2023, the M6 Stage 1 team, in Sydney, Australia, hosted a series of engagement events to ensure the community had opportunities to meet the team, ask questions and find out more about the project's progress.

In September 2023, during a family friendly Spring Fair, organised by Bayside Council, many young visitors had the opportunity to share the excitement surrounding the M6 Stage 1 project. They put their skills to the test by operating a miniature replica crane and parents could take photos of their children with M6 Stage 1 construction character cut outs.

In October 2023, the team organised a pop-up event at a cafe in Earlwood to update the community on the progress of work. The event was well attended, with approximately 145 locals dropping in to ask questions and support a local business as they enjoyed a coffee or hot chocolate.

In November 2023, the team hosted a pop-up event at Civic Avenue Reserve to advise the community about the temporary three-month closure of Civic Avenue at President Avenue. This event provided an opportunity for the local community to ask about the temporary closure and address any concerns or questions they might have, as well as questions about works on the five-kilometre shared pedestrian and cyclist pathway that will extend from Muddy Creek, Brighton Le Sands through Rockdale Bicentennial Park to Monterey.

To involve the community further, the team collaborated with the students from Brighton-Le-Sands Public School and invited them to draw their vision for the future of Bicentennial Park.

Their artwork has come to life by being produced into large panels that wrap approximately 400 metres of site hoarding on the project, creating an impactful piece of public art that is 1.2m high. To celebrate the installation, the team invited the students and their families to the unveiling ceremony. During the ceremony, the group were provided with a construction and design update from the Project Director who explained how the area will look at project completion.

These initiatives are a snapshot of activities that the community teams create to ensure local community members are informed about our work. The teams strive to encourage connection and build trust with the project's community, keeping people informed but also creating a sense of shared ownership and purpose.

Stakeholder engagement in Central Interceptor

Watercare's Central Interceptor project in Auckland, New Zealand, has a strong focus on community engagement. Community events at several of the Central Interceptor sites increased in 2023 as the last few sites were opened taking the project to 16 sites open. Project neighbours, local residents, school communities and local government members enjoyed the opportunity to look behind the gates to see the work that has taken place. The project team held 12 public community events with over 600 people attending in 2023. Over the year more than 20,000 people spent some time in the Discovery Centre, a state-of-the-art mobile visitor centre with virtual reality, touch-screen games and outdoor activities representing a vibrant, high-tech way to introduce the Central Interceptor Project to local communities, schools, and community events. In partnership with **Watercare Services Limited**, the Discovery Centre team is out most weekends spreading the word about everything wastewater and the importance of the Central Interceptor Project.

Profile

Karen Melville

Stakeholder and Communications Manager
Central Interceptor, New Zealand

1. What is your career path and what brought you to Central Interceptor?

I was born and raised in South Africa and studied Public Relations and Communications. I worked in Radio and TV News for many years and had the pleasure of seeing South Africa's first democratic election firsthand, albeit wearing a bullet proof vest. When my kids were young and after emigrating to New Zealand 16 years ago, I worked in administration for several schools before returning to the Communications field, where I learned about Stakeholder engagement, a sub-set of Comms, and really found my passion. I brought this passion to the Central Interceptor more than four years ago.

Stakeholder engagement focusses on the needs of the people affected by a project or issue. In our case it is the hundreds of people we impact with our sixteen construction sites in residential areas, be they neighbours, schools, businesses, park users, residential landowners, or local government organisations - we have an impact on any of them at some stage during construction.

2. Can you briefly describe your role and what it entails on a day-to-day basis?

The best thing about this job is that no two days are the same! We identify the people affected by the project and keep them informed about our work while trying to minimise the impact on them. We try to be a good neighbour by proactively making it easier to live with a construction site nearby. A typical day could involve speaking to a class of school children, dropping 400 newsletters in mailboxes, arranging access for noise monitoring, meetings with park user groups about how their playing fields may be impacted, organising and hosting an open day to site or restacking several china cabinets so they don't vibrate every time our trucks access our neighbouring site.

3. What are main challenges faced by stakeholder engagement practitioners in construction sites?

Construction sites can be noisy, dusty and cause vibration while taking away parking or access to properties challenging us to find innovative solutions to mitigate adverse impacts without compromising safety or production and simultaneously keep stakeholder happy. Construction timelines are constantly changing due to several factors and it's difficult explaining this to our stakeholders. Our solution for this challenge was holding open days for our nearest neighbours, called Behind the Blue Gate as our sites are surrounded by tall blue fences, so that people can see and understand in person how complex and challenging this project is.

4. What is the most stimulating aspect of your job?

Combining relationship building and communications and working with an awesome team is the best part of my job. Our small, three-person, stakeholder team works very well as a unit and has very good support from the client and our wider team to enable construction while taking our stakeholders along on the journey. Our boots-on-the-ground approach means we build close relationships with our multiple and diverse stakeholders, which help us all to do our jobs while building a legacy project for all Aucklanders.

Italy, Naples - Bari
Photo by Domingo Milella from the photographic project "Nuove avventure sotterranee"

Value

"In our industry, technologies are constantly evolving, and this dynamism inspires us to challenge the status quo, to enhance our capabilities, and to never stop learning"

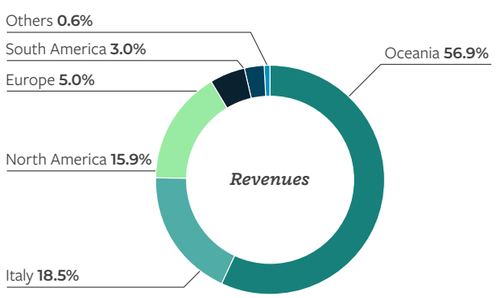
Giovanni Giacomin
Head of Corporate Operations TBM

Italy, Rome
Restoration of Loggia dei Vini at Villa Borghese

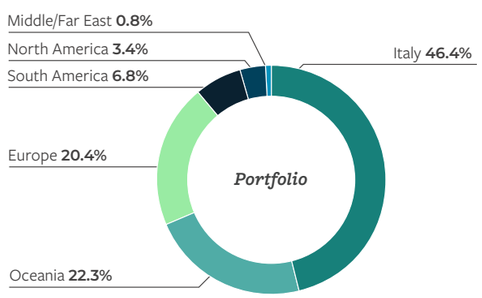
Key financial and economic results

(in thousands of euros)	2021	2022	2023
Revenues	648,045	859,604	1,087,276
EBITDA – Gross Operating Margin	76,429	88,533	101,042
Economic Value			
generated	686,379	910,335	1,185,449
distributed	631,830	860,010	1,104,694
retained	54,549	50,325	80,755

Throughout 2023, we consolidated our reputation as a robust company and a reliable partner, earning the trust and confidence of our stakeholders. Our organisation's global footprint has strengthened even more since last year, with over 80% of our revenue and project portfolio originating from activities outside Italy.



Revenue by geographical area



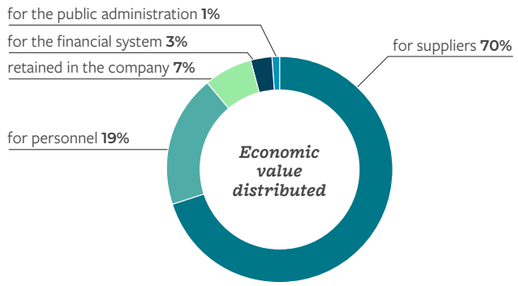
Portfolio of work by geographical area

Economic value generated and distributed

The breakdown of economic value generated and distributed by Ghella was determined by reclassifying items within the Income Statement of the Consolidated Financial Statements as of 31 December 2023.

In 2023, the directly generated economic value totals 1.1 billion, and includes revenues and financial income. The majority, 70%, is allocated to suppliers, covering expenses such as services and raw materials. Following this, 19% of the value is allocated to employees, representing a slight increase from the previous year, in the form of wages and benefits. The Financial System receives 3% of the economic value, which includes financial charges, foreign exchange losses and distributed dividends. Lastly, the Public Administration receives 1% of the economic value generated through income taxes, local taxes and fees.

7% of the total directly generated value is retained by the company.



Distribution of economic value generated (in thousands of euros)

Australia, Sydney
Sydney Metro City & Southwest

Our supply chain

In the construction sector, effective supply chain management is vital. Suppliers of works, goods, and services, hereafter referred to as "suppliers," are **integral stakeholders** whose performance significantly shapes the efficiency, quality, and sustainability of our operations and the projects we undertake.

Procurement management is a central element of our ESG strategy, cutting across various initiatives. This is evidenced by our engagement with suppliers and subcontractors to develop environmentally sustainable solutions, uphold workers' rights, and promote ethical and transparent business relationships. We aspire to strengthen strategic partnerships with our suppliers for mutual benefit by integrating ESG criteria into the selection, monitoring, and continuous improvement processes.

Our **Sustainable Procurement Policy** sets out the values and principles that underpin our management ethos.

We communicate our policies and guidelines to suppliers, with the expectation that they operate in accordance with these standards, thereby ensuring a unified and consistent approach throughout the value chain.

Through our pursuit of SA8000 certification, we have developed a more collaborative relationship with our suppliers, aimed at mutually fostering continuous improvements. We maintain a rigorous due diligence approach in verifying each of our suppliers' compliance with the standard.

Supplier qualification and monitoring

The qualification process for a new supplier, identified during the market survey ("scouting") phase, initiates with a request to register on our **Ghella Vendor Platform**. Suppliers are required to complete a qualification questionnaire, and those who meet the criteria are added to our **Vendor List**. For contracts involving partner qualification systems, we ensure consistency between the adopted qualification criteria and those in our questionnaire.

During 2023, approximately 3,000 suppliers were engaged, with 92% of them being local, meaning they operate within the same country as the order or company, thus, **90%** of the total expenditure is earmarked for them. Opting for local suppliers helps reduce both economic and environmental costs associated with transporting goods, while also contributing to the growth of the local economy. Moreover, more than 500 suppliers were contracted for the first time during the reporting year. On average, approximately 43% of all units included in the reporting scope were evaluated based on environmental and social criteria. In Australia and Canada, 100% of major suppliers, by amount, were assessed according to social and environmental criteria. Even in cases where environmental criteria were not initially part of the qualification process, they were later incorporated into the monitoring process during contract performance.

Maintaining good environmental performance alongside exemplary working conditions is not only a prerequisite for joining our supply chain but also a standard that must be upheld and enhanced throughout our partnership: we are committed to gradually integrating suppliers into our sustainability journey.

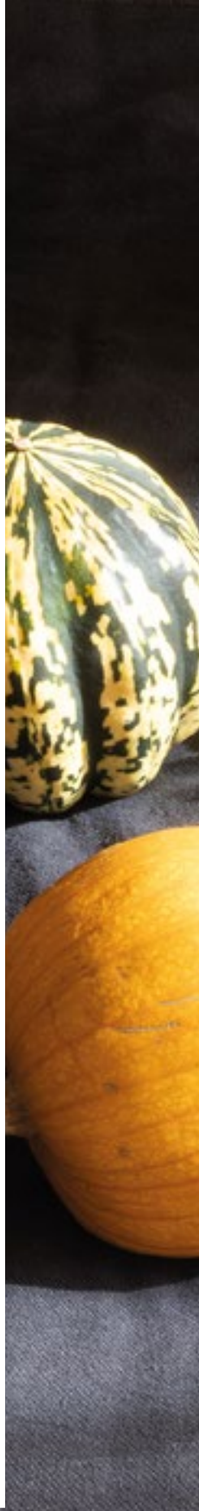
In 2023, four second-party audits were conducted on suppliers within the scope of SA8000, and audits were also carried out on the integrated Quality, Health and Safety, and Environmental management systems. The sample was selected based on the scores obtained during the initial qualification for environmental and social issues. The audits involved document analysis and site visits, during which we evaluated the work and practices of our suppliers, providing them with observations and suggestions for improvement. In several instances, the audit led to an increase in the scores obtained during the qualification phase. All suppliers showed full cooperation throughout the audit and subsequent stages.

In cases where suppliers identified with critical issues during periodic audits and monitoring do not implement the necessary mitigation actions within the specified timeframe, they will be removed from our register in accordance with our internal procedures.

Supplier diversity in Central Interceptor

Supplier diversity represents a valuable sustainability outcome for our procurement activities. Supplier diversity is the practice of intentionally procuring from businesses owned by minority groups, levelling the playing field for these suppliers to compete fairly on the open market, while strengthening buyers' supply chains.

The Central Interceptor project in Auckland, New Zealand, recognises the added social value that can be created in local communities through collaborating with Māori and Pasifika businesses. Our client Watercare and the Ghella Abergeldie JV are both registered buyers of **Amotai**, an organization that connects Māori and Pasifika-owned businesses with buyers wanting to purchase good, services and works. Amotai verifies these businesses and holds a national database of businesses that are ready for work, making it easy for buyer organisations to engage Māori and Pasifika-owned businesses who can meet their needs. As a result, a number of Māori and Pasifika businesses are currently engaged on the Central Interceptor project.



Partnering with suppliers for digital transformation: the Telese-Vitulano site case study

Recognising the significance of incorporating the **supply chain** into our **sustainability** and **digitalisation** initiatives, one of our **ESG Strategy** objectives is to strengthen **strategic partnerships** with our suppliers.

Initiated by Ghella's Technical Management and QHSE department, a plan was launched within the **Telese - Vitulano** railway extension project to **modernise** the standard procedures for **concrete supply**, involving the suppliers in the bagging process.

The initiative aims to ensure systematic **traceability** of concrete using an **automated procedure** to reduce the risk of human error. This digitises the documentation process for concrete, with systems structured to facilitate automatic data collection and accounting processes for the product. Additionally, a **web application** was developed, allowing the concrete supplier to access the **daily schedule** planned by the site and integrate it into their own concrete production control system, automatically and without the need for intermediaries or manual data entry. Once bagging is completed, the system generates the product report (the so-called DdT) and transmits it in **real-time** to the construction site for further checks.

This procedure allows for real-time assessment of the **amount** of concrete produced, the aggregates used and recycled, and the additives and water utilised. It also provides an estimate of the quantities of wash water and recovered aggregates. Additionally, the tool facilitates the calculation of the **carbon footprint** during the concrete production and distribution phases.

The system is also designed to develop **in future** quality dossier documentation for the work (such as sampling, Quality Control Plan or QCP, and laboratory certificates) and to certify it with the client using blockchain technology, thus completely removing the use of paper documentation.

This project was made possible by the close **collaboration** between the contract IT department and those of the suppliers, working together to make the concrete supply process more efficient, with the aim of **optimising** and **controlling processes** across the entire **value chain**, aligning with Ghella's strategic approach to ESG issues.

Innovation

The quest continues for engineering solutions that facilitate safe work practices, enable the proactive monitoring of technical decisions by anticipating potential issues, and promote the transfer of know-how.

Being recognised in the market for our specialised expertise is a hallmark of our excellence in the execution of works. By continuously exploring innovative solutions in our work execution, we can consistently enhance quality standards, ensuring safer working conditions.

Most of the operational innovations originate within the construction sites, where new solutions are experimented with daily, to carry out the works in the best possible way.

The following were also the focus of our efforts in 2023:

- Applied research and validating new technologies, materials and concepts, as well as managing and drafting of patents

- Conceptualising and developing modifications to TBMs in collaboration with a leading manufacturer and reusing reclaimed materials and equipment wherever possible

- Developing innovative equipment tailored for construction sites with unique requirements

Among the main **innovations we have developed**:

- New equipment for installing the prefabricated driveway deck (traffic-bearing surface) for the E6 project in Oslo. Measuring nearly 250m in length, this machine can assemble the prefabricated deck without halting TBM excavation, thus ensuring uninterrupted train movement

- A new TBM receiving system for the last station of the Broadway Subway project in Vancouver. Because of the geological conditions in the final excavation section, the TBM must maintain face pressure at approximately 2 bar. To prevent tunnel flooding during breakthrough, a steel structure cylinder was installed to keep the TBM under pressure, ensuring it could be safely disassembled

Furthermore, **innovative technological solutions** were implemented in the following areas:

- **Fibreglass-reinforced segments**

The application of composites with partial or complete substitution of traditional bar reinforcement with fibres not only diminishes the greenhouse gas emissions associated with the component but also streamlines segment production at the plant, leading to reduced time and costs. Throughout 2023, this technology was consistently employed in a number of sites in Australia, Canada and New Zealand and was newly implemented at the E6 site in Oslo. By integrating steel fibres as a partial or total replacement for bar reinforcement, an average saving of approximately 1,500 tons of iron per 10 km of tunnel was achieved, resulting in a total saving of 5,800 tons of steel and 18,200 tons of CO_{2eq} in 2023 alone.

- **Welded reinforcement segments**

When designing segment reinforcement cages, opting for structural welded cages instead of overlapping bars reduces the total kilogram weight of iron by approximately 10%, thereby reducing the carbon footprint impact. Furthermore, this solution minimises labour requirements, reducing risks associated with cutting, bending, and assembling cages. In 2023, we introduced welded cages for projects including the E6 Clean Water Tunnel in Oslo and the Broadway Subway Project in Vancouver.

- **Anchored gaskets without feet**

During the Oslo project, we effectively tested a new type of anchored gasket. Through experiences gained in previous projects, we noted that the feet used to secure the gasket to the concrete could potentially weaken the segment, posing risks to hydraulic tightness and the tunnel's overall durability if not correctly sized. To investigate and improve the interaction between the segment and seal, we collaborated with two suppliers to conduct tests in STUVA's certified laboratory in Germany and at Tor Vergata University in Italy. This led to the adoption of a solution in the design of the E6 project, where the gasket is anchored to the concrete using a "fibred mat" as a replacement for conventional feet.

- **Segment design mixes**

To fulfil mechanical durability performance and increasingly stringent sustainability criteria for cementitious blends across various projects, we employ low-carbon blends. These blends are formulated by combining cement clinker with Supplementary Cementitious Materials (SRMs) sourced from other industrial processes. Compliance with sustainability requirements, where applicable, is certified through the issuance of Environmental Product Declarations (EPDs) covering either the entire ring or specific cementitious blends.

- **Cement-free mixes**

Through a collaboration started in 2021 and continued through 2022 with GEEG (Geotechnical & Environmental Engineering Group), a spinoff of La Sapienza University of Rome, we studied an alternative cement-free mixture for filling the annular space between tunnel excavation and the outer surface of precast segments. This collaboration resulted in the development of a mixture that replicates the mechanical properties of cementitious blends but is obtained with a by-product of the cast iron production process: blast furnace slag. The reduced emissions associated with producing the blend, attributed to the absence of cement, and the reuse of waste from another process exemplify a commendable application of circular economy principles. The new blend has been deployed at the E6 site in Norway and is planned to be used in Australia during 2024.

- **Extra strong cement-free mixes**

In a fresh collaboration with GEEG (Geotechnical & Environmental Engineering Group), a spinoff of La Sapienza University of Rome, we have developed, at the client's request, a cement-free blend engineered to achieve a strength of 10 MPa at 28 days, exceeding the conventional 2-3 MPa benchmark.

Australia, Sydney Metro City & Southwest
Photo by Alessandro Imbriaco from the fotographic project "Di roccia, fuochi e avventure sotterranee"

The power of technology and data management streamlines spoil logistics for M6 Stage 1

Innovation is a key enabler for Ghella's Environmental, Social and Governance Strategy. Since construction first started, Transport for NSW's M6 Stage 1 project in Sydney, Australia, has been utilising sophisticated technology to track and record data for truck movements and spoil. The software is known as Virtual Superintendent (VS) and combines data from multiple sources in real time as a cloud-based solution.

A typical day for M6 Stage 1 involves the movements of about 80 trucks, transporting up to 8 loads, weighing over 50 tonnes and travelling 250 kilometres. Being able to pinpoint the precise location, weight and speed of a particular truck at any given second with just a few clicks represents an impressive innovation to optimise operations.

One of the benefits of VS is the power of the data and flexible reporting. It saves time with the information easily feeding into project reporting. The control room at the office is set up to provide many different data views of VS on big screens for the spoil team to interact with. Australian Heavy Vehicle National Law compliance is also measured, tracking speed, fatigue, and mass management (weight of the truck).

On site, this technology has evolved from the past process of physical weighbridge paper dockets providing the required information for each load which would then need to be manually entered into a computer. This is now electronically captured instantaneously as the VS system integrates with the weighbridges to automatically provide detailed load data to trucks. The VS system also verifies each load against the allowable weight for the truck to ensure that vehicles do not leave the site overloaded.

The VS software utilises apps on mobile devices which are mounted in the trucks and pings GPS signals. Excavator operators also have the app and can send virtual dockets to the truck for each specific load.

Being able to look back at historical data and determine the exact location of all trucks at any given time is also valuable to the community team to help identify whether any complaints that have come in are related to our truck movements.

The data captured within VS also plays an increasingly vital role in sustainability reporting. For example, a combination of intelligent earthworks data and off-site spoil data can be used to determine the percentage of materials on-site that are reused versus disposed of.

VS is immensely powerful and the M6 Stage 1 spoil team have worked closely with the software developers to trial and create improvements to the product. They have been proactive in innovating alongside the developers, providing ideas for improvements with changes being implemented within a few weeks from inception to go-live. It is estimated the team have been involved in over 50 improvements since the beginning of the project.

Donations, sponsorships and membership in associations

Recognising our social responsibility, we have implemented a **Sponsorship** and **Donation Plan** aimed at supporting initiatives aligned with our values.

We manifest our commitment through **three types of initiatives**:

DONATIONS OR CHARITABLE CONTRIBUTIONS

SOCIAL INVESTMENTS

SPONSORSHIPS

Our initiatives are aimed at achieving two very specific goals: delivering social support and fostering the creation of shared value.

We have decided to focus on six specific areas, each contributing as a fundamental cornerstone for the development and enrichment of the communities in which we operate:

Italy, Rome
MAXXI exhibition "Nuove avventure sotterranee"

Within the **social domain**, we offer assistance to organisations committed to **humanitarian and solidarity initiatives**, while also raising awareness among employees about causes championed by the company. This includes donations to entities such as the **Community of Sant'Egidio** and the **Umberto Veronesi Foundation**.

Within the **culture domain**, we back **cultural excellence** both domestically and internationally, including donations to esteemed institutions like the **Accademia di Santa Cecilia** in Rome.

Recognising the importance of the Arts as guardians of freedom of expression, a value that encourages imagination and prevents bias, we endorse the creation of artistic content. **Nuove avventure sotterranee**, a sequel to the editorial initiative **Di roccia, fuochi e avventure sotterranee** represents the second series of photographic campaigns commissioned by Ghella at construction sites in Italy, Argentina, Canada, Australia, and New Zealand. Curated by Alessandro Dandini de Sylva, each artist was assigned to a specific site based on imagery from the construction sites, enabling them to capture imagery relevant to their respective research. Stefano Graziani, Rachele Maistrello, Domingo Milella, Luca Nostri, and Giulia Parlato candidly **document** five underground infrastructures across four continents, **deliberately maintaining a poetic and non-didactic distance between the images and the construction sites**. This distance serves as an arena for exploration, encouraging reflections on the imagery of vast infrastructures and uncovering new and fresh avenues for storytelling. A second box set, published by Quodlibet, will be created from the material produced. Following this, the exhibition **Nuove avventure sotterranee**, will be curated and exhibited in partnership with the MAXXI Museum in Rome, with Alessandro Dandini de Sylva again serving as curator.

Through **sustainable communication** channels, we promote our mission and vision to our stakeholders.

In the **education domain**, we invest in both **undergraduate and postgraduate degree programmes**, aiming to transmit our passion and expertise to future generations. For instance, we sponsor the master's degree programmes for Business Engineers by Direxta Formazione d'Impresa.

Our commitment to the **environment** extends to supporting initiatives that **safeguard the places where we live and work**. As such, we have maintained a longstanding partnership with **FAI**, the **Fondo Ambiente Italiano**, an organisation dedicated to safeguarding Italy's natural and artistic heritage.

Since 2021, we have been proud members of **AIS** (Sustainable Infrastructure Association). The association's primary objective is to raise awareness among economic, social, and political stakeholders of the importance to incorporate sustainability principles into the planning, design, construction, and management of infrastructure. We actively participate in drafting policy documents, engaging all stakeholders in the supply chain. Our contributions have been instrumental in shaping position papers such as "The Sustainable Construction Site," "ESG and Infrastructure," and "The Contribution of Concrete to Infrastructure Sustainability." Additionally, we play an active role in AIS's Working Groups, including "Life Cycle Assessment for Sustainable Infrastructure," "Stakeholder Engagement," and "Social Responsibility and Occupational Safety." Since 2021, our subsidiary Ghella Pty Ltd in New Zealand has been a member of **ISC** (Infrastructure Sustainability Council). The association plays a crucial role in managing the primary sustainability rating system for infrastructure projects in Australia and New Zealand.

In line with our sponsorship and donation policy, we **actively support associations** that align with our values and objectives.

We are longstanding members of **SIG** (Italian Tunnelling Society), an association dedicated to promoting, coordinating, and disseminating studies and research in the field of tunnel construction and large underground works for almost fifty years.

We are also members of **ANCE** (National Association of Building Constructors), in which our Vice President **Federico Ghella** occupies the position of **Vice President** and **Chairman of the Works Abroad Committee**. Since 2019, we have been active members of **Green Building Council Italia**, an organisation dedicated to the promotion of a sustainable building culture.

Ghella confirms its support for the Umberto Veronesi Foundation and the Gold for Kids project

We firmly believe that a better world is also built through small acts of responsibility towards others. As a company, we understand the importance of contributing to this transformation by directing our efforts towards supporting medical and scientific research, particularly evident during the pandemic.

This is why we have chosen to reaffirm our commitment to the **Umberto Veronesi Foundation**, with which we share, apart from common values, a dedication to finding practical solutions for scientific advancement in health and medicine.

Specifically, we have chosen to back the **Gold for Kids project**, **initiated in 2014 by Fondazione Umberto Veronesi** and centred on childhood and adolescent cancers. Collaborating closely with the Italian Association of Paediatric Haematology and Oncology (AIEOP) and its Foundation (Fieop), this project aims to improve the chances of recovery and enhance the quality of life for children and adolescents battling cancer, the primary cause of childhood death.

With precise objectives, the project aims to finance **treatment protocols** for young cancer patients, conducting **informational campaigns**, and **raise awareness** among the public and relevant institutions about the **needs of adolescent cancer patients**.

This substantial commitment to health guarantees everyone a second chance, as investing in the well-being of the youngest **means caring for the future**.

Fondazione VERONESI

Ghella partners with Operation Smile to expand surgical care access in Cariri

Upholding its social responsibilities, **Ghella reaffirms its pledge to acts showing responsibility towards our neighbours** by endorsing **Operation Smile**.

In 2017*, over 7 million people in low and middle-income countries were afflicted with cleft lip and palate conditions. Since 1997, **Operation Smile** has conducted 82 medical missions across 12 Brazilian cities, positively transforming the lives of more than 5,800 patients and building trust within local communities through partnerships with nearby hospitals. **The initiative is specifically tailored to benefit rural communities such as Cariri** in the northeastern region, where residents face challenges accessing treatment for cleft lip and palate conditions. While such services are more accessible in the southern metropolitan cities due to a higher concentration of plastic surgery specialists, they remain scarce in Cariri.

With our support, we aim to offer multidisciplinary assistance to 90 patients and conduct a minimum of 50 surgeries. **Facilitating the availability of surgical care and extending educational opportunities** to local doctors and volunteers are fundamental aspects of our **pragmatic and problem-solving approach** to ensuring comprehensive patient rehabilitation.

**Source: Global Burden of Disease Study 2017 Results. Seattle, Washington, United States: Institute for Health Metrics and Evaluation (IHME), 2018. Available from http://ghdx.healthdata.org/gbd-results-tool. Accessed November 29, 2019.*

Operation Smile

Ghella partners with Rome to restore La Loggia dei Vini at Villa Borghese.

As part of the **Ghella x Roma** project, we continue our commitment to Rome by undertaking **special projects and initiatives that support the enhancement of the city's historical and artistic heritage, making a concrete contribution to restoring beauty** in local territories and communities.

The **Loggia dei Vini** project, which **began in 2023** at Villa Borghese, will engage us over the **three-year period from 2024 to 2026**. This **phased restoration** will be executed by R.O.M.A Consorzio in collaboration with the Superintendency of Rome and Roma Capitale. The Loggia, commissioned by Pope Paul V Borghese, is a **small oval structure** built between 1609 and 1618 above a grotto formerly used for wine storage, **connected to the Casino Nobile by an underground passage. A space dedicated to feasts and social gatherings**, its interior features valuable frescoes depicting the banquet of the gods, painted by Archita Ricci in the 17th century.

The Loggia, currently closed to the public, deserves to be **brought back to its former glory, which is why we are contributing** to its restoration. The initial phase, already underway, includes the restoration of the internal vault, central fresco, and pillars, which were partially damaged by water infiltration. The second phase, planned for next year, will focus on the plasterwork and the exterior. The third phase will restore the hemicycle surrounding the Loggia and its terracotta flooring to their original condition. Between each phase of the restoration, **cultural activities will be organised to enliven the Loggia**, transforming it into a vibrant space returned to the city. Once again, we aim to embody the values we believe in and implement actions that can generate a positive impact on people and the territory.

ROMA

Assessorato alla Cultura
Sovrintendenza Capitolina ai Beni Culturali

Ghella sponsors the Ballet International Gala IV featuring Roberto Bolle

In August 2023, we sponsored the **Ballet International Gala IV in Sydney**, featuring acclaimed Italian dancer **Roberto Bolle**. This exciting collaboration reinforced the company's **commitment to supporting the arts, the local community, and celebrating Italian culture**.

Marco Fontana, General Manager of Ghella Australia, stated: "**With a deep connection to our Italian heritage, we are delighted to support Roberto Bolle's tour of Australia**. This partnership highlights **our strong commitment to promoting the arts, enriching communities, and embracing the vibrant culture of this country**. Together, we celebrate the **transformative power of art, which unites people and fosters a harmonious blend of Italian and Australian creativity**".

The gala featured **prominent figures from the ballet world**, such as **Roberto Bolle, Alina Cojocaru**, **Melissa Hamilton**, and **Aran Bell** representing prestigious companies like the Royal Ballet, American Ballet Theatre, Teatro della Scala, and Astana Opera. **Ghella's** support for this event **reflects its commitment to enriching Australia's diverse cultural tapestry and promoting cross-cultural ties between Italy and Australia**.

Argentina, Matanza Riachuelo
Photo by Luca Nostri from the photographic project "Nuove avventure sotterranee"

Profile

Daya Sidhu

Employer Labour Relations
Broadway Subway Project, Canada

1) What is your career path and what brought you to Ghella?

I started my career in HR almost ten years ago in construction when I was still in university. I left construction for a small period but found myself drawn back to it when I came across Ghella. When I had my first interview with the team, I knew that it was the right place for me. Since the beginning it has always been working within a family environment. Although I am far from head office in Rome, I still feel very much part of the core organization. Things have evolved over my time in Ghella, my role has changed to become more focussed on the TBM and union side of the business which I have really enjoyed. The one thing that has remained consistent is the connection with our people. I would love to take on other projects with Ghella in other parts of the world, although the Broadway Subway Project holds a close place in my heart because I commuted along Broadway for many years.

2) Can you briefly describe your role?

My role has changed over time. I started doing all the general tasks in HR you would expect: Recruitment, Employment Relations, Onboarding, Talent Development etc. In the last two years my role has been more focussed on Labour and Employment Relations. I am responsible for the TBM Workers and managing the collective union agreement within that. A lot of my work is building relationship with the unions and representing Broadway Subway Project on day-to-day matters.

3) What aspects of what you do make you particularly proud?

As a team I think we have done a really great job at increasing employee retention. From where things started from a people perspective we are much more levelled out and stable and I think it's for sure a combination of our efforts, as well as finding our way as a Joint Venture.

4) What is the most stimulating aspect of your job?

I have really enjoyed representing the TBM Workers in the union environment. There is value in all these exchanges, and we can gain much perspective from being in these situations and being able to problem solve with HR matters. I would say that any kind of work that keeps me closely in touch with the workers is high on my list. The experience of seeing first-hand what the workers do inside the Tunnel is very humbling and I have much respect for their work. I have always made it a large priority to be at the sites weekly to understand things from the site perspective and I can say it has helped me a lot connect with people and what they do. As HR we are working on people related matters every single day, and being in such role is only made easier when you are close to the people behind the operation and can draw your perspectives from the business sides and people side.

Environment

"The countries in which we operate are strongly committed to minimising all types of environmental impact, and we, at Ghella, along with our partners and clients, are passionately enthusiastic about best-practice sustainability implementation and innovation throughout the construction process"

Sam Jones
Technical Director, Ghella Australia

Environmental protection is a priority for us, and as such it is at the heart of our **ESG strategy**. The "**Planet**" pillar sets out the company's mission in three thematic areas in which we intend to focus our efforts: fighting **climate change**, promoting a **circular economy** and **environmental protection**.

We acknowledge that we play a crucial role – given the context of our operations and the nature of our tasks. Therefore, we adhere to high sustainability standards to minimise the **environmental footprint** of our activities as much as possible.

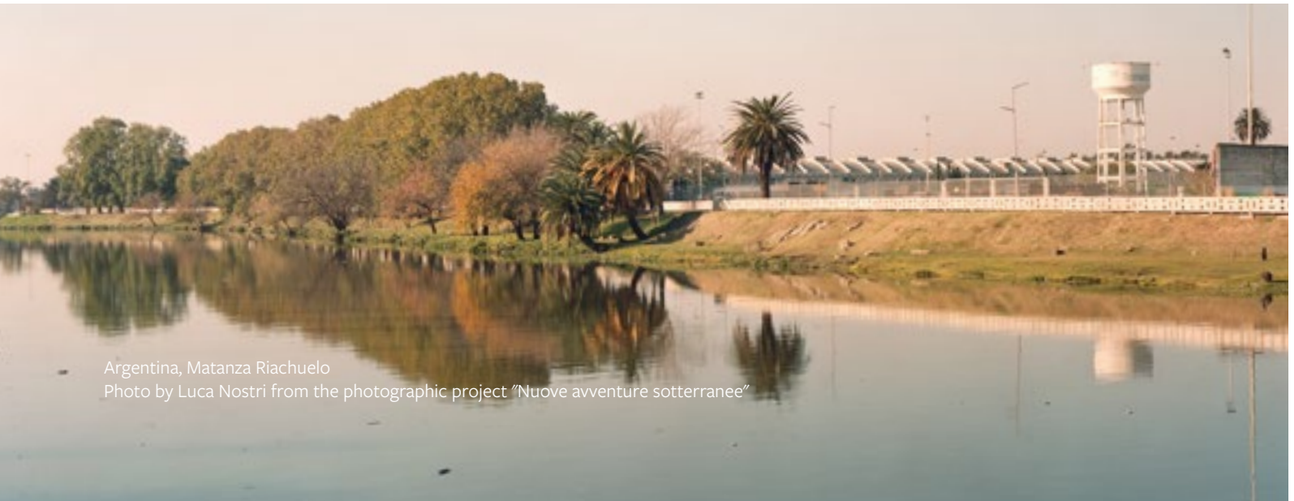
Effective management of environmental issues is central to our operating procedures and is formalised via an **Integrated Management System**, whose environmental component is certified to the **ISO 14001:2015** international standard.

The system is based on a risk-based thinking approach, ensuring all our projects are appraised as early as the planning phase.

This involves analysing the Significant Environmental Aspects of our projects, which means examining all elements of our activities that interact with the environment and potentially impact it, both under normal operating conditions and in any emergency.

The significant environmental aspects that we monitor in our projects are:

- Production of emissions into the atmosphere/dust
- Water management
- Soil and subsoil management
- Protection of biodiversity
- Management of waste and hazardous substances
- Production of noise and vibrations
- Generation of vehicular traffic
- Management of historical, architectural and archaeological assets



Argentina, Matanza Riachuelo
Photo by Luca Nostri from the photographic project "Nuove avventure sotterranee"

For some of these, in 2021 we defined quantitative targets at the corporate level which we integrated into the new 2023-2025 Sustainability Plan:

- Reducing[16] water withdrawals by 15%, expressed in m^3 / revenue in millions of euros by 2030.
- Including measurable indicators of biodiversity impact in construction decisions by 2025.
- Maximising reuse of excavation soil by 2025.

We also quantify and monitor the environmental aspects which, under normal operating conditions, generate indirect impacts on a global scale. In particular:

- Consumption of natural resources and raw materials.
- Consumption of energy.
- Greenhouse gas emissions (scope 1 and 2).

Introduced at corporate level in the new 2023-2025 Sustainability Plan, the quantitative targets for these aspects are:

- Maximising the use of recycled materials by 2025.
- Reducing[17] Scope 1 and 2 greenhouse gas emissions by 25%, expressed in tonnes of CO_2 equivalent / revenue in millions of euros, by 2030.
- Becoming carbon neutral by 2050.

The significant environmental aspects of each project are managed and monitored according to methods outlined in an **Environmental Management Plan**, which, on a case-by-case basis, is integrated into a **Sustainability Management Plan**.

In the Project Plans, the management of environmental issues is **planned** considering **local regulations**, **contractual obligations**, and the objectives and targets established by the client and partners. Our Policies and Corporate Sustainability Plan ensure we meet the needs and expectations of all stakeholders, adhere to consistent global sustainability **standards**, and consistently improve our **environmental performance** over time.

During the **construction** phase, our teams perform operational control and continuous monitoring of significant environmental aspects. This process is complemented by specific staff training, periodic audits and inspections, addressing and resolving any non-compliant environmental issues and reporting on project performance to both clients and head office periodically.

At the corporate level, this flow of information enables us to monitor the organisation's environmental performance and to structure appropriate action plans in our efforts to achieve continuous improvement.

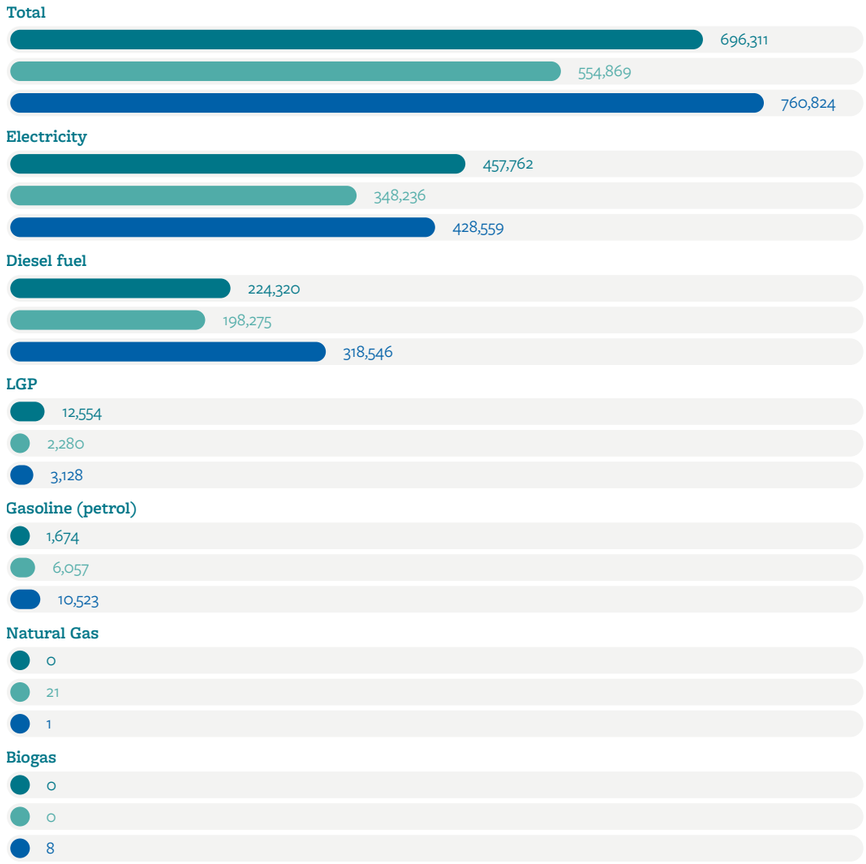
The following paragraphs describe the consolidated **results** of our projects for **2023** and compare them with the reports from the previous two years. However, it should be noted that these representations are influenced by the differing scopes of reporting.

Energy consumption and greenhouse gas emissions

In line with our ESG strategy, we are committed to reducing energy usage and mitigating greenhouse gas emissions. We employ strategic approaches within our industry, such as emissions quantification, electrification, improving plant efficiency, selecting low-carbon vehicles, procuring or generating renewable energy, and incorporating eco-design principles into our planning to minimise the volume and impact of construction materials.

Production for the implementation of project work and the management of site operations areas entail the consumption of energy resources, which are attributable to both Joint Ventures and active subcontractors on site. We continuously monitor these energy consumption levels. In 2023, the total energy consumption at our construction sites reached **760,824 gigajoules** (**GJ**), representing a 37% increase compared to the 2022 figure and a 9% increase compared to 2021.

Consumption	u.m.	2021	2022	2023
Biogas	Gj	0	0	8
Natural gas	Gj	0	21	1
Gasoline (petrol)	Gj	1,674	6,057	10,523
LGP	Gj	12,554	2,280	3,187
Diesel fuel	Gj	224,320	198,275	318,546
Electricity	Gj	457,762	348,236	428,559
Total	**Gj**	**696,311**	**554,869**	**760,824**



Comparison of energy consumption in 2021, 2022, 2023, with breakdown by source (GJ).

Changes in absolute energy consumption are influenced by the fluctuating reporting boundary, considering both the number of active construction sites and their operational phases during the reporting year. In 2023, there was an additional construction site compared to the previous year (8 sites instead of 7), all in the central phase of the life cycle, except for the Brenner site, which has been scaling down its activities since 2022, resulting in decreasing but still significant impacts. The increase in energy demand from 2022 to 2023 is attributable to a 61% increase in diesel consumption and a 23% increase in electricity consumption. Despite the greater increase in diesel consumption, electricity, with a 56% share of the total, is the primary source of energy supplied. It is predominantly utilised for operating TBMs and site facilities, particularly ventilation systems in the tunnel, as well as for auxiliary activities in offices and base camps.

Diesel fuel is the second most procured energy source, representing 42% of the total. It is used for operating construction equipment, generation sets, and the vehicle fleet.

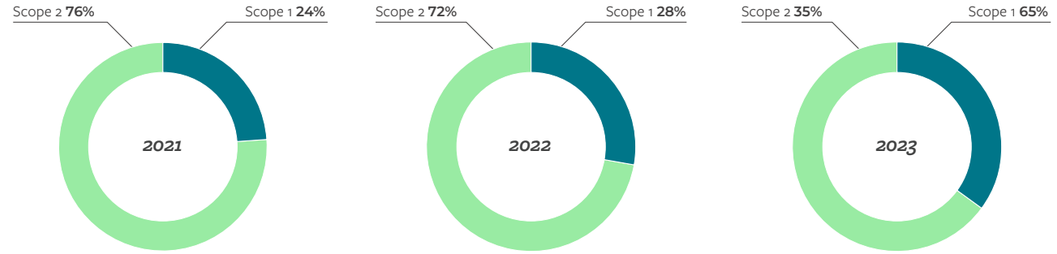
Gasoline (**petrol**), with a 1.4% share of the total, is used as fuel for the car fleet and site vehicles.

LPG and methane account for less than 1% of the 2023 energy demand. LPG is used for steam generation, heating, and domestic hot water for offices, base camps, and food service.

In addition to energy consumption, we monitor associated **GHG emissions**, differentiating between those directly generated by on-site power generation activities through the combustion of diesel, LPG, and gasoline (**scope 1 emissions**), and those linked to the purchase of electricity from the grid (**scope 2 emissions**), which are generated upstream at power plants and for which we bear indirect responsibility. The methodology for calculating scope 2 emissions is location-based, meaning that the emission factors used depend closely on the energy mix of the countries where these consumptions occur.

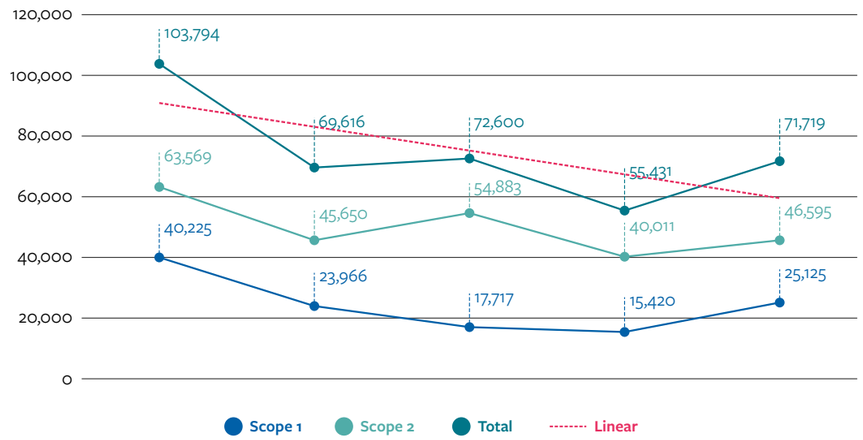
In 2023, our total emissions reached **71,719 tonnes of CO_2 equivalent**, marking a 29% increase from 2022. This rise correlates with the overall increase in energy consumption. However, it represents a 1% decrease from 2021. Below is the breakdown in scope 1 and 2 over the last three reporting periods.

Emissions	u.m.	2021	2022	2023
Scope 1	tCO_{2eq}	17,717	15,420	25,125
Scope 2	tCO_{2eq}	54,883	40,011	46,595
Total	**tCO_{2eq}**	**72,600**	**55,431**	**71,719**



Comparison between the distribution of scope 1 and 2 greenhouse gas emissions in 2021, 2022, 2023 (% of total).

In comparison to the previous year, the analysis indicates a slight decline in the percentage of Scope 2 emissions, driven by a more significant increase in diesel consumption relative to electricity consumption. Despite this, Scope 2 emissions continue to represent the predominant share, accounting for 65%. The graph below provides an overview of the emissions trend over a wider timeframe, starting from 2019, which coincides with Ghella's first Sustainability Report, up to 2023: despite fluctuations caused by changes in the reporting boundary, the overall trend in absolute emissions remains downward.



Trends in total greenhouse gas emissions, Scope 1 and Scope 2, during 2019-2023

Australia
Photo by Rachele Maistrello from the photographic project "Nuove avventure sotterranee"

Italy, Naples - Bari
Photo by Domingo Milella from the photographic project "Nuove avventure sotterranee"

The reported information pertains to the entire site organisation. When adopting the financial control criterion (by allocating emissions to Ghella based on its percentage of participation in JVs) and normalising emissions based on corporate revenues relative to the reporting boundary, the total value for 2023 amounts to **36.76**[18] tonnes of CO_2 equivalent per million euros of revenues, reflecting a significant **45%** reduction from the 2021 baseline, **in line** with our **2030 decarbonisation target** outlined in the 2023-2025 Sustainability Plan.

Greenhouse gases	u.m.	2021	2022	2023	Var. 23-21	Target CO_2 in 2030
Absolute emissions	tCO_{2eq}	72,600	55,431	71,719	-1%	
Intensity: Emissions (Ghella's share) / Revenues	tCO_{2eq}/ revenue in millions of euros	67.13	35.17	36.76	-45%	-25% vs 2021

Absolute greenhouse gas emissions and intensity of greenhouse gas emissions relative to revenue for 2021, 2022, 2023

Below we highlight some examples of **energy-saving** and **emission quantification** and **reduction** initiatives[19] implemented through 2023:

- Use of electric trucks for moving excavated soil
- Use of efficient machinery and ventilation systems in the tunnel
- Use of an electric conveyor belt to move the excavated material out of the tunnel, instead of using a truck
- Installation of solar-powered light towers to replace diesel-powered hybrid light towers
- Use of electric locomotives in the tunnel instead of locomotives powered by the TBM's diesel generators
- Carrying out LCA (Life Cycle Assessment) studies and obtaining the EPD (Environmental Product Declaration) for some construction materials
- Quantification in the tender phase of greenhouse gas emissions associated with procurement of the main construction materials and identification of lower impact solutions
- Installation of LED lighting systems in the tunnel and in the offices

Electric trucks initiative up and running in Central Interceptor

One of the main strategies we pursue to reduce our emissions is electrification, the transition from fossil fuel-powered to electric machinery and vehicles in our construction sites. This choice not only significantly cuts atmospheric emissions and improves local air quality, but also allows us to lower scope 1&2* emissions overall, if electricity can be generated from renewable sources.

2023 saw Watercare's Central Interceptor's e-trucks initiative up and running where for the first time 100% electric tipper trucks have been used on the road in New Zealand. The fleet of three have been operating for a year, in this time, they have hauled almost 35,000 tonnes of spoil travelling over 104,000km combined, with the most distance covered in a single month being a staggering 12,680km. The eTrucks have met and exceeded target operational efficiency and saved 134 tonnes of carbon along the way, surpassing the amount anticipated so far by an impressive almost 45%.

A team of four dedicated drivers operate the trucks, which proved comfortable and quiet, reducing nuisance to our neighbours. Site teams have also been impressed with the capacity and operations of the trucks making positive sustainability outcomes a topic of discussion.

The project team at Central Interceptor is pioneering in this space and leads the way for the use of electric trucks with battery swapping capability in construction, getting to experience the benefits of this innovation firsthand and playing their part in decreasing carbon emissions on Auckland roads.

** scope 1&2 emissions are direct emissions produced by the use of fossil fuels (scope 1) and indirect ones associated with the production of the electricity used (scope 2)*

Introducing electric equipment and machinery on the E6 site in Oslo

To meet our commitment to sustainable site management, we acknowledge the necessity of selecting construction equipment that reduces environmental impact and ensures optimal air quality, particularly in confined spaces.

Over the past few years, we have closely monitored advancements in electric machinery technology to promote the adoption of fossil fuels and emission-free equipment on construction sites, both domestically and internationally.

Notably, at the E6 site in the Municipality of Oslo, our joint venture (JV) AF Ghella is leading the way by gradually introducing electric machinery in response to the client's ambitious goal of achieving a fully emission-free fleet by 1 January 2025.

Loaders

The joint venture has partnered with the few suppliers available worldwide to develop electric loaders, leveraging its tunnelling expertise to inform the design and manufacturing process, establishing itself as an innovator and leader in the industry.

Notable examples include the TL2000 and ITC315SL models which stand out for their user-friendly interfaces and remote-operating capabilities, prioritising on-site safety and health-conscious workspaces. Additionally, the TL2000 offers versatility, serving purposes such as rock drilling and debris management.

Dumpers

The JV, in collaboration with Epiroc and Sany, has led the development of customised electric dumper trucks for tunnel spoil transportation, marking a groundbreaking achievement in repurposing mining machinery for civil engineering applications worldwide.

Currently, the fleet includes three SANY SKT90E and four EPIROC MT42 dumper trucks, featuring a battery-electric design capable of accommodating 42 tonnes of load, equipped with a fast and seamless battery system, minimising downtime and thus ensuring uninterrupted productivity.

This underscores the commitment of all major suppliers to reducing emissions across the entire E6 project, not only within the site perimeter but also in inputs and outputs to the site.

Trucks

Three VOLVO FMXE 62T electric trucks have been integrated into the JV's fleet since late 2023. They serve to transport tunnel elements within the tunnel during TBM excavation and to transport hydraulic pipes for subsequent installation. Introduced for the first time in 2022, these trucks are not only fully electric but also feature a regenerative braking system: this innovative feature harnesses the kinetic energy generated during deceleration and breaking, converting it back into electrical energy, thereby enhancing energy efficiency and reducing environmental impact.

Excavated spoil produced on site is efficiently transported to storage areas in low-carbon biogas trucks provided by the excavation waste disposal contractor, aligning with the contractual target of achieving 'zero emissions by 2025' and reflecting the commitment of major suppliers to reducing emissions throughout the E6 project. Additionally, all goods and material transportation between the construction site and storage areas exclusively relies on low carbon emissions vehicles, reflecting the commitment to sustainability in transportation practices.

Solar power reduces carbon emissions in Sydney Metro – Western Sydney Airport

Reducing carbon emissions is a top priority for Ghella's ESG Strategy. The CPB Ghella JV, building Sydney Metro – Western Sydney Airport, Station Boxes and Tunnelling Works, is committed to be net zero for scope 1 (fuel) and 2 (electricity) emissions, supporting the Climate Active Carbon Neutral certification for Sydney Metro – Western Sydney Airport.

Since 2023, two CPBG sites have been helping to reduce the project's carbon footprint after a key solar panel roll-out agreement was signed. The sustainability initiative involved installing Solpod 99-kilowatt solar array panels on the site office roofs at both Airport Business Park and Orchard Hills. In 2023, the solar arrays have helped these sites to avoid 94 tonnes of carbon dioxide emissions – equal to 81 round trips driving from Sydney to Perth. Although small-scale technology certificates (STCs) are not received as part of the rental agreement, STCs do help to reduce the overall rental cost of the system.

The project is leasing the solar panels from SolPod to offset some of its energy consumption. Overall, the estimated electricity use budgeted for the term of the project is 42-gigawatt hours.

Leasing these solar panels also gives the project the flexibility to return the system after we finish so no capital investment is required.

Not only is this a great win for sustainability; the energy generated from the solar panels will return a saving of about 35 per cent from the contracted energy tariff.

LED strip lighting is installed at both the Eglinton Crosstown West Extension and Clean Water Tunnel sites

As part of our commitment to our ESG strategy we continuously strive to find creative solutions to decrease energy consumption and carbon footprint.

In 2023, Ghella installed LED strip lighting to illuminate the tunnels at the Eglinton Crosstown West Extension site in Toronto, Canada and at the E6 Clean Water Tunnel site in Oslo, Norway. These LED strips, characterised by their flexibility, brightness and efficiency allow for continuous or intermittent lighting and replaced the conventional LED lamps, commonly used on our construction sites by mounting the strips along the tunnels with support hooks for cables and lamps. This allowed Ghella to decrease electricity consumption while enhancing lighting quality and promoting higher safety standards.
The LED strip is applied directly onto the tunnel surface, both in traditional tunnels and in TBM tunnels. This approach significantly reduces installation time and operational risks as it involves simpler procedures. Additionally, it results in material savings and decreased power consumption: in fact, while LED lamps typically consume 40W and are spaced every 10 metres, using LED strips consumes on average 3W per metre, resulting in a 33% reduction in energy consumption.

Safeguarding of resources

Understanding the importance of water resources, we actively promote their efficient usage and work towards preserving the quality of both groundwater and surface water.

Water

Water withdrawals at our worksites, which are continuously monitored and aimed at conserving resources, adhere to local authorisations for groundwater extraction or for obtaining water from bodies of water or public conduits, to avoid disruption to the local water balance. **Water demand** is primarily used for cooling TBMs, dust suppression, segment manufacturing, tunnel and base camps operations.

In line with our ESG strategy, we are committed to reducing water withdrawals by tracking consumption, implementing recovery systems and promoting reuse initiatives.

Water saving methods

- Reuse of excavation water through recirculation in the tunnel following purification
- Use of non-potable underground water for construction activities through storage in site tanks fed by wells
- Closed-circuit recirculation line for the TBM cooling water
- Water recovery systems installed at the segment production plant
- Collection and recovery of rainwater through catchment systems

In 2023 we externally sourced **1,623 Ml** of water, an increase over 2022 of 27%. However, when normalised with respect to Ghella's share of revenues, the value for 2023 equates to **0.96** Ml per million euros of revenues, representing a significant **35%** reduction from the 2021 baseline, **aligning** with our **2030 water withdrawal target** as outlined in the 2023-2025 Sustainability Plan.

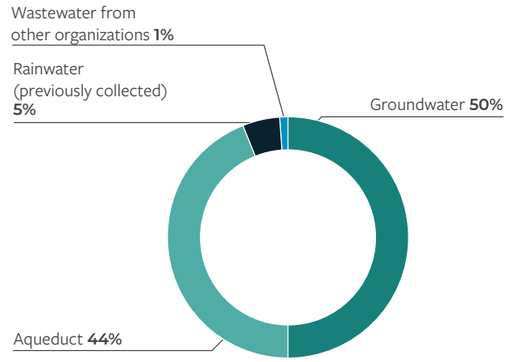
Water withdrawal intensity	u.m.	2021	2022	2023	Δ % 23/21	Target 2030
Water withdrawals (Ghella's share) / Revenues	Ml / Revenues in millions of euros	1.48	1.25	0.96	-35%	-15% vs 2021

Below is the breakdown of supply sources in the last three reporting periods:

Water withdrawals	u.m.	2021	2022	2023
Surface water	Ml			85
- of which streams	Ml	20	21	6
- of which rainwater	Ml			79
Groundwater	Ml	1,023	1,083	809
Third-parties water	Ml			729
- of which aqueduct	Ml	266	173	709
- of which wastewater from other organisations	Ml			19
Total	**Ml**	**1,310**	**1,278**	**1,623**

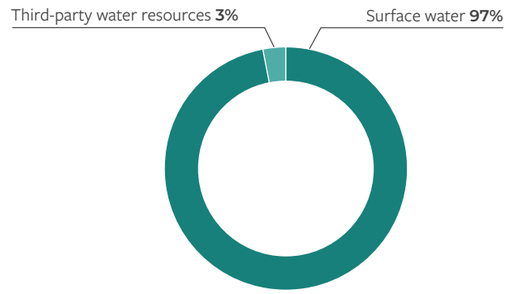
Comparison of water withdrawal sources in years 2021, 2022, 2023 (in Ml).

New Zealand, Central Interceptor
Photo by Giulia Parlato from the photographic project "Nuove avventure sotterranee"



Breakdown of water withdrawals 2023 (%).

Groundwater remains the primary source of supply in 2023, accounting for 50% of total water withdrawals, followed by water from aqueducts at 44%. The Brenner construction site is the main contributor to groundwater withdrawals, sourcing water from the extensive subsurface reserves in the Alta Valle Isarco area, thereby avoiding groundwater stress. Notably, in 2023, rainwater collected at the Eglinton site was utilised for the first time**Water discharges** from our worksites consist of residual non-reused water from our processes, run-off water from site aprons, and wastewater from offices and the base camp. The combined discharge volume in 2023 amounted to **9,204 megalitres** (**Ml**), distributed as follows:



Distribution of water discharges in 2023.
The overall figure does not include Norway's E6 Clean Water Tunnel construction site, Australia's Western Sydney Airport construction site, and New Zealand's Watercare Central Interceptor site.

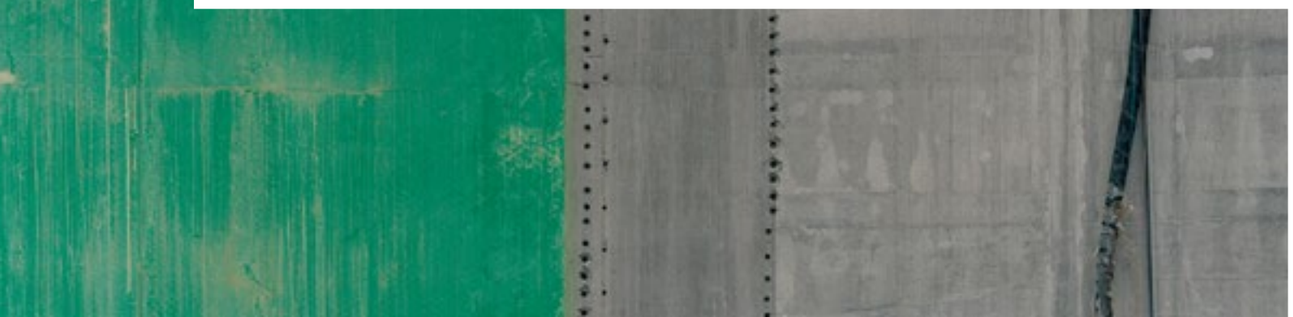
Our commitment to maintaining water quality involves complying with discharge conditions outlined in permits issued by local authorities and implementing a thorough monitoring plan, periodically sampling and analysing the quality parameters of treated wastewater. Nearly all discharges, around 97%, are directed to surface waters, with only 3% discharged into sewers. Importantly, there are no discharges to groundwater.

Our priority is to prevent **potential accidental damage** to the water and soil sectors by selecting suitable products, adhering to operational instructions, and deploying containment and waterproofing measures. At our worksites, potential risks to these sectors arise from:

- pollution from suspended solids caused by excavation work, leaching from worksite surfaces, and washing vehicle.
- pollution caused by dispersion of cement components during concrete processing activities.
- pollution from hydrocarbons and oils caused by leaks from site vehicles and the handling of fuels and lubricants.
- accidental discharges of pollutants into surface waters or onto the ground.

Permeable reactive barrier manages contamination at Sydney Metro – Western Sydney Airport site

A New South Wales first sustainability process was introduced in 2023 by the CPB Ghella JV, building the Sydney Metro – Western Sydney Airport, Station Boxes and Tunnelling Works, to manage contamination using activated carbon as a permeable reactive barrier (PRB). Bulk excavation beneath the groundwater table at the Sydney Metro St Marys site could have potentially allowed chlorinated hydrocarbons to migrate from a former dry-cleaning business to the station box, due to groundwater drawdown and dewatering. To combat this, CPBG injected activated carbon to the area west of the station box to create a permeable reactive barrier (PRB), preventing any contaminated groundwater from moving. The environmental team, in consultation with the construction team, introduced the PRB initiative to reduce the hazard and the quantity of non-recyclable waste products (spoil and water) and improve long-term remediation solutions. The new process eliminated the potential risk to workers from vapors and contact with contaminated groundwater drawn into the station box or during tunnel boring machine and cross passage construction. The initiative will leave a legacy that extends beyond the initial scope by transforming the potential for contamination management on major tunnelling projects and introducing positive environmental outcomes. Emma Kline, the project Approvals, Environment and Sustainability Manager who was behind the initiative, won the Contribution to Sustainability Award for Excellence at the NAWIC (National Association of Women in Construction) Awards 2023. NAWIC is an Australian organization championing and empowering women in the construction and related industries to reach their highest potential.



Biodiversity

As outlined in our ESG strategy, we are dedicated to safeguarding local land and biodiversity, preserving protected areas and endangered species, and implementing suitable technical and organisational measures to protect ecosystems.

Prior to construction, we conduct surveys to identify significant plant or animal species that may require the development of a specific management and monitoring plan.

Below are some other main activities focusing on biodiversity:

Measures for protection of flora

- Restrict the removal of native vegetation to the minimum required for construction activities, aiming to mitigate the impact on land use and reduce the risks of erosion and sedimentation issues
- Map and mark the vegetation to be preserved
- Guaranteed restoration of the vegetation at the end of worksite activities

Measures for protection of fauna

- Prior to the removal of vegetation, we ensure that any animals discovered within the worksite boundaries are relocated to a suitable habitat nearby, characterised by similar vegetation but devoid of work-related hazards
- In the event of injured animals being discovered during vegetation cutting operations, we arrange for their transportation to pre-identified veterinary centres for treatment

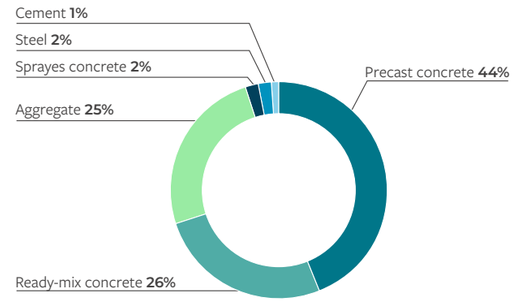
Materials

Due to the unique requirements of our activities, our construction sites have a significant demand for materials. In accordance with our ESG strategy, we pledge to promote the reuse of building materials and the acquisition of recycled materials with the aim of diminishing our impact on the depletion of raw materials and reducing the environmental footprint associated with goods procurement, guided by the following principles:

Sustainable management of materials

- Reduce the consumption of materials and minimise waste
- Consider their environmental footprint in the selection phase
- Give preference to materials with the highest benefits for the circular economy
- Encourage their reuse on site

In 2023 we externally procured a quantity of building materials equal to **2,023,462 tonnes**.



Externally procured materials in 2023 (%).

Virtually all externally purchased materials come from non-renewable sources. The materials that have the greatest impact on the depletion of resources, in descending order, are pre-cast concrete (44%), ready-mix concrete (26%), and aggregates (25%).

At the Brenner site, the use of externally sourced aggregates is avoided, by adopting a commendable approach of recycling class A excavation soil and rock and manufacturing precast concrete and precast segments on-site, leading to reduced strain on resource depletion and minimising emissions linked to transportation, while also enhancing control over production expenses and efficiency.

Further positive steps taken in 2023 to reduce the demand for materials included:

- identifying solutions, in the design phase, to reduce the quantities of concrete.
- using metal fibre-reinforced segments as an alternative to traditional iron reinforcement.
- using concrete with a high content of supplementary cementitious materials (SCM) aimed at reducing the cement content, such as fly ash, granulated blast slag and silica fumes.
- internally managing concrete production on-site and implementing mechanisms to recover concrete waste generated during production.
- reconditioning and reusing TBMs in different projects located in the same country.
- reusing the temporary accommodations of the base camps.
- maximising the reuse of excavated material from the site itself rather than procuring new inert materials from quarries.
- using recycled materials compatible with the inert material (such as crushed glass) to reduce the procurement of new inert materials from quarries.
- producing or requesting EPDs from suppliers for key construction materials to maintain awareness of their environmental and carbon footprint throughout their life cycle.

Sustainability Champions promote material re-use in Central Interceptor

Re-use represents a key practice in the waste management hierarchy and one we commit to maximise in our ESG Strategy. Throughout 2023 a number of staff were recognised as Sustainability Champions in Watercare's Central Interceptor project in Auckland, New Zealand, for their innovative re-use ideas which resulted in substantial savings in materials, time and money. These included:

Re-using tunnel segments

When the TBM reached the halfway point on the Central Interceptor tunnel, temporary tunnel sections needed to be created across the base of the two shafts. The TBM team came up with the idea to reuse damaged tunnel segments to make a temporary tunnel for the TBM to go through. Once the TBM had passed through, the sections were removed. Forty-two damaged segments and a few good ones were needed to create a temporary tunnel in the more than 70m deep shafts. This initiative, looked after by a graduate engineer, used waste material which reduced the project's carbon footprint and saved 54m³ of concrete and 1,680kg of steel. Re-using materials on site resulted also in a reduction in diesel consumption and reduced traffic on Auckland roads, due to less lorries being employed for materials deliveries.

Material re-use

While preparing the May Road site to be the main hub for the TBM operations on the Central Interceptor, Sustainability Champions redesigned several things in order to repurpose material from the original TBM site. They reused redundant steel roofing and reinforced concrete slabs previously used as temporary barriers around the shafts to construct covered walkways. Spare re-bar was used to build the wheel wash. Instead of pouring new concrete, the new spoil shed foundations were created utilizing the TBM's old thrust blocks and a redesign of the spoil pits used the existing steel frame and concrete slabs from the TBM's initial launch. They managed to save 174m³ of concrete, 24 tonnes of steel and 720m² of polycarbonate roofing. This materials saving is estimated to have saved 186 tonnes of CO_2 emissions.

Sustainability initiatives at the Brenner construction site

Aligned with our ESG strategy, we are focused on promoting circular economy initiatives and efficiently handling excavated soil and rock to maximise their reuse.
Here are some concrete examples of the initiatives carried out in 2023 at the Brenner construction site:

- With the endorsement of the client and the local community, we started the authorisation process with the Province of Bolzano to keep Hinterrigger's temporary storage of excavated earth and rock on site. Although initially a different final configuration was planned. This responsible decision will avoid the handling and transportation of around 3 million cubic metres of excavated material by lorry, thereby reducing vehicular traffic and air pollution.

- RFI, BBT, BTC, and Dolomiti reached an agreement to keep the Hinterrigger ashlar factory operational which will produce the prefabricated segments for the southern access to the Brenner Base Tunnel, known as "Section1 Fortezza-Ponte Gardena". This circular economy initiative avoided the need to dismantle the factory and its facilities and to build a new similar plant in close proximity.

- We have successfully implemented a semi-automated tracking system for excavated soil and rock, thanks to an integrated system that allows for real-time recording of each movement of material in meticulous detail (including starting WBS, material type, weight, destination WBS, driver and vehicle). The system enables continuous monitoring and reporting of flows, significantly reducing the need for paper documentation. All companies involved in the transportation of excavated soil and rock are fully engaged in this process.

- With the client's consent we have initiated the permit process at the Ministry of Environment to fill the underground chambers (which once accommodated decommissioned facilities and are adjacent to the tunnel) with Class B+C excavated material in column B and Secondary Raw Materials sourced from the recovery of non-hazardous waste generated at the construction site. This circular economy initiative is aimed at preventing the landfilling of approximately 160,000 m³ of various materials/ wastes and avoiding the extraction of additional quarry material.

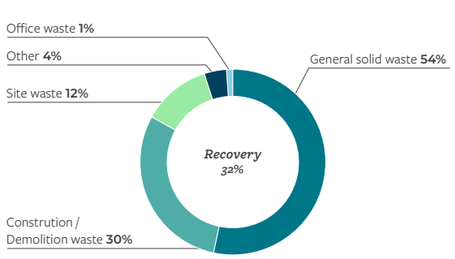
Waste and excavated materials

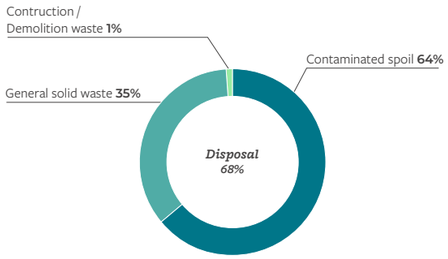
Waste

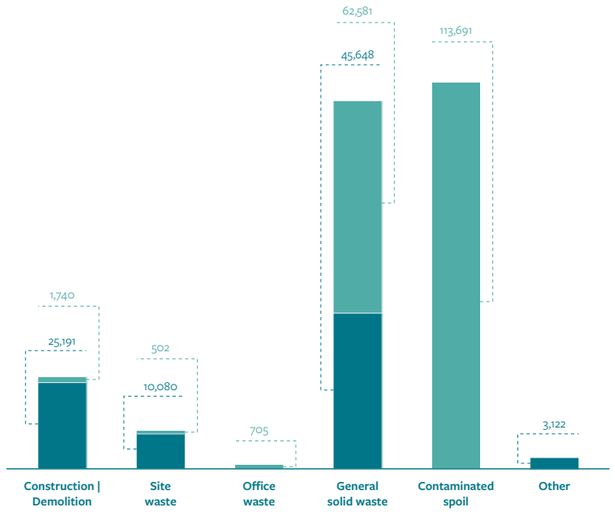
During 2023, a total of **480,563 tonnes of waste** were generated, with 263,494 tonnes classified as **non-hazardous waste** and 217,070 tonnes classified as **hazardous waste**.

In 2023, significant excavation activity was undertaken, leading to the primary sources of waste generation being contaminated excavated soil and rock, alongside general solid waste, comprising both non-hazardous and hazardous waste categories.

The substantial volumes of waste generated in these two categories are primarily attributable to excavation activities associated with contracts such as the Eglinton and Broadway Subway Project, M6 Stage 1, and Western Sydney Airport projects. These contracts involve operations in areas characterised by urban sub-layers overlaid by the city's more recent strata or in locations previously utilised as landfills. In both scenarios, excavated soils and rocks are contaminated with substances or materials already present in the soil, such as asbestos and hydrocarbons. Following excavation, these materials are assumed by the projects assessed based on their characteristics, and appropriately managed as waste for disposal in designated landfills.

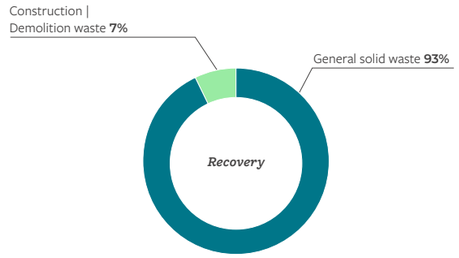


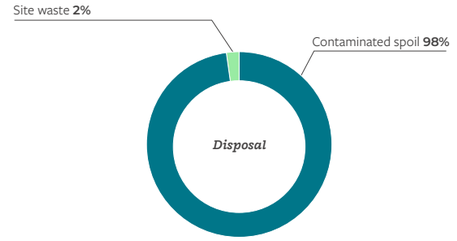


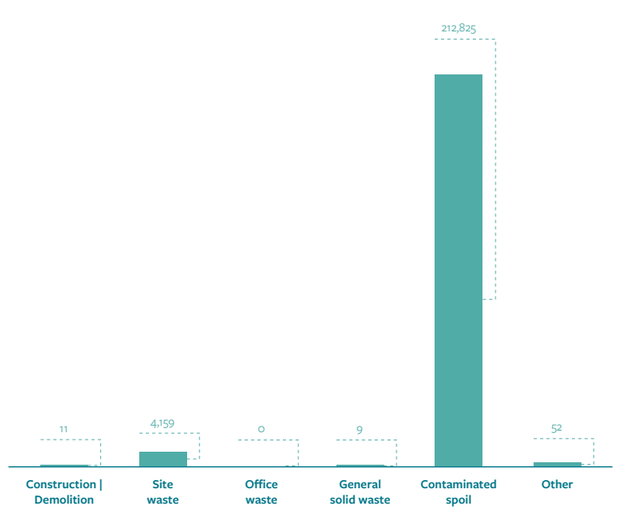


Non-Hazardous waste generated in 2022, by destination and type (%,t)

Non-hazardous waste saw 32% allocated to recovery activities, specifically 4% for reuse and 28% for recycling. This mainly includes general solid waste originating from the construction site, base camp, and offices, including materials like glass, plastic, tires, crushed stone, wood, cardboard, and food waste, accounting for 54%. Additionally, waste from construction and demolition activities, such as steel, concrete waste, and debris from demolished structures, accounted for 30%, typically associated with a high recovery rate. Conversely, 68% was disposed of in landfills, primarily comprising contaminated excavated soil and rocks and general solid waste unsuitable for recovery. Excluding excavated soils and rocks with pre-existing contamination would result in a rise in the percentage of recovered waste to 57%.







The breakdown of hazardous waste generated in 2023, by destination and type (%,t).

Hazardous or contaminated wastes, making up 99% of the total, are slated for disposal and consist almost exclusively of soil pre-contaminated with hazardous substances.

Greece, Athens, Metro Line 3
Photo by Marina Caneve

Canada, Broadway Subway Project
Photo by Stefano Graziani from the photographic project "Nuove avventure sotterranee"

Sustainable Waste Solutions in Broadway Subway Project

We act at all levels of the waste hierarchy, seeking solutions to minimise our impact on the environment by avoiding the generation of waste in the first place and preparing materials for reuse, recycling and recovery. At the same time, we seek solutions to minimise the negative impacts associated with the disposal of any residual waste.

The Broadway Subway Project in Vancouver, Canada, has introduced an innovative Waste to Energy (WTE) Program, furthering its commitment to sustainability by diverting more waste from landfills. This program channels general waste to a local incinerator with energy recovery, hence generating CO_2 emission savings due to the diversion of the waste from landfill and to the production of electricity from a waste. For every ton of waste processed through the WTE program, there is a corresponding one-ton reduction in the project's greenhouse gas emissions. Moreover, the program boasts a 100% recovery rate for metals sent for disposal, ensuring that valuable resources are not wasted.

Excavated soil and rock

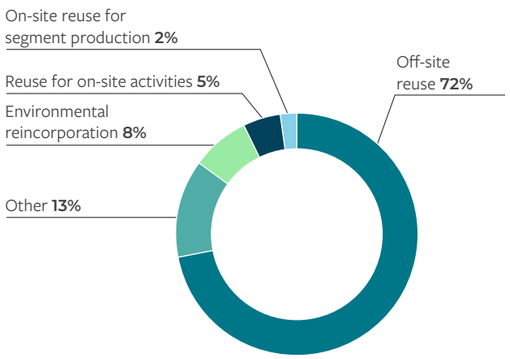
Aligned with our ESG strategy, we are dedicated to maximising the reuse of **non-contaminated excavated material**, considering it a by-product of excavation activities rather than waste; this approach is contingent upon analysing and verifying suitability in accordance with local legislation. In 2023, **8,602,494 tonnes** of uncontaminated **excavated soil and rock was generated**.

72% of the excavated material handled was **reused off-site**. This is in response to our commitment to collaborate with other players in the construction sector towards achieving a circular economy.

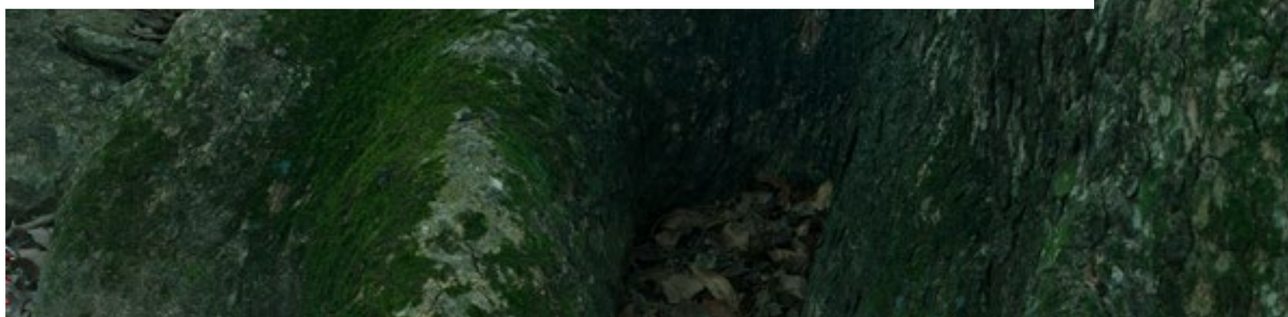
Of the excavated material handled in 2023, **15%** was **reused on-site**, for the following activities:

- **8%** underwent **environmental reincorporation**, i.e. delivered, upon completion of the works, to open-air storage sites identified by the client, where it will be reintegrated into the environment through replanting operations.
- **5%** reused for the construction of embankments, earthworks and slopes.
- **2%** reused as aggregate, for the construction of segments.

Finally, 13% of the soil was not subject to reuse and was instead disposed of in dedicated landfills.



Non-contaminated excavated soil and rocks – 2023 management methods (%)



Rome head office

Headquarters initiatives implemented up to 2023

- Provided filtered water dispensers.
- Water reducers were installed on all faucets.
- Upgraded all ceiling lights with new LED lamps, resulting in an over 30% reduction of lighting needs.
- Coffee pods distributed to employees are designed to be compostable.
- Interior and exterior of the headquarters were painted with Airlite, an organic compound paint that purifies the environment by capturing smog and breaking it down.
- Attained Platinum level LEED Conference Room certification and initiated the process to certify the entire building under LEED EBOM.
- Installed anti-solar films on all glazing throughout the venue, resulting in a reduction of incoming solar heat by over 60%. This initiative improves comfort levels, particularly in summer, and assists in reducing the cooling systems' workload.

Electricity from the grid
852,990 kWh (2021)
808,608 kWh (2022)
800,626 kWh (2023)

Renewable energy produced
29,030 kWh (2021)
33,633 kWh (2022)
28,365 kWh (2023)

Water consumed
2,987 m^3 (2021)
2,652 m^3 (2022)
2,900 m^3 (2023)

Waste
2,005 t (2021)
1,582 t (2022)
1,737 t (2023)

Breakdown of waste generated at the Rome head office in 2023
Paper **58**%
Organic waste **24**%
Non-recyclable **15**%
Plastic/Glass/Metal **3**%

Green Building Council Italia

Profile

Virginia Morabito

Graduate Engineer
M6 Stage 1, Australia

1) How long have you been with Ghella and what has been your journey so far?

I joined Ghella in June 2022 right after I graduated with a degree in Civil Engineering, and was placed in the Rookie programme for young, recent graduates. After an initial period of technical and management training at the Rome headquarters, I relocated to Sydney, Australia. From October 2022 to the present, I have worked on the Transport for NSW's M6 Stage 1 under the CPB-Ghella-UGL JV, rotating through different teams as required by the programme. Specifically, I first spent a year with the team constructing the shared pedestrian and cyclist pathway, redeveloping a large green space near the outlet of the M6 Stage 1 surface tunnel, before moving to the Bicentennial Park tunnel site, where I am currently working on the conventional excavation of a tunnel section in soft soils.

2) Can you briefly describe your role for us?

As a Graduate Engineer, I assist with site activities during both the planning and construction phases. I interact daily with key figures such as supervisors and subcontractors to ensure that activities are executed in accordance with the design, by conducting quality checks. I also contribute to the analysis of the construction project to identify optimal operational methodologies and continuously monitor progress for inclusion in progress reports, which provide useful information for future activities (known as 'lessons learnt').

3) How do you think your work can contribute to improving the sustainability performance of Ghella's projects?

I believe the contract I am working on pays close attention to sustainability issues and can thus enhance the sustainability performance of Ghella's projects. I have participated in the development of a shared pedestrian and cyclist pathway returning to the community liveable spaces currently occupied by our construction sites. This project not only improves urban accessibility but also redevelops green areas. Within the Bicentennial Park tunnel team, I have worked on the responsible use of water resources by tapping aquifer recharge wells. Treating wastewater from construction sites through a water treatment plant allows it to be reused in the project, thus reducing the amount of city water needed for the project.

4) What is the most stimulating aspect of your work?

I find the most stimulating aspect of my job to be the opportunity to collaborate daily with international professionals from different cultural backgrounds. Working in Sydney has allowed me to learn from experts from all over the world, enriching my experience through their different approaches and perspectives. Furthermore, being involved in major engineering projects and following the entire process from planning to implementation is highly rewarding and motivating for my professional growth.

Australia, photo by Marina Caneve
"A terra tra gli animali"

The photographic project is supported by the Directorate-General for the Contemporary Creativity of the Italian Ministry of Culture under the Italian Council program (2023).

The images highlight the analogy between human-made infrastructure and termite mounds found in nature.

Appendix

Methodological Note

Objectives

The Sustainability Report serves as the means by which we communicate the achievements and impact of Ghella's activities and its most important production units to all our stakeholders. This forms an essential part of our continuous improvement process, as monitoring and measuring performance are crucial for planning and defining a solid and competitive strategy.

Period and scope of reporting

Beginning with the 2019 reporting, we prepare the Sustainability Report annually and on a voluntary basis.

The data presented here relate to the period 1 January 2023 - 31 December 2023 and, where relevant, are compared with the results of the previous two years.

The Consolidated Financial Statements include, in addition to the Parent Company Ghella S.p.A., the companies it controls, whether directly or indirectly. Specifically, this includes entities over which Ghella S.p.A. has control, either through majority ownership of voting rights at shareholders' meetings or by exerting a dominant influence that allows it to make key financial and management decisions for the entity, thereby reaping the related benefits.

The Sustainability Report, on the other hand, includes the following entities:

Country	Legal Entity	Company Unit	% Ownership	Type	Category
ITA	Ghella S.p.A.			Company	
NOR	Ghella NUF	Ghella Spa NUF Succ Norvegia		Branch	
Subsidiaries					
AUS	Ghella Pty Ltd	Ghella Pty Sydney	100.00%	Company	
CAN	Ghella Canada Ltd	Ghella Canada Toronto	100.00%	Company	
ITA	GransolarGhella S.r.l.	GransolarGhella	60.00%	Company	
ITA	TunnelPro S.p.A.	TunnelPro	100.00%	Company	
NZL	Ghella Abergeldie JV	Central Interceptor	70.00%	Project	Hydraulic Tunnel
NZL	Ghella Limited	Ghella Limited NZL	100.00%	Company	
Associates (Valued using the Equity Method)					
ITA	Brennero Tunnel Construction Scarl	BTC - Brennero Mules Lt 2-3	47.21%	Project	Railway AV/AC
Proportionally Consolidated Joint Arrangements ex IFRS 11					
AUS	CGU JV (M6 stage 1)	M6 Stage 1 (Sydney)	22.50%	Project	Motorway Tunnel
AUS	CPB - Ghella JV (Sydney Metro - Western Sydney Airport)	Sydney Airport Metro	22.50%	Project	Metro Line
CAN	WestEnd Connectors General Partnership	Eglinton D&C	20.00%	Project	Metro Line
CAN	Broadway Subway Constructors General Partnership	Broadway D&C	40.00%	Project	Metro Line
ITA	Telese Scarl	Telese - NABA Telese-Vitulano	47.15%	Project	Railway AV
NOR	AF-Ghella JV	E6 Clean Water Tunnel	40.00%	Project	Hydraulic Tunnel

Projects were selected based on parameters that reflect their environmental, social and economic impact. The data collected and reported refer to the projects as a whole. Material issues were identified via the materiality analysis, updated in 2022 and explained in the chapter 'Our Company'. The data disclosed in the chapter 'Environmental Protection' refer exclusively to the entities identified as projects. The preparation of the Sustainability Report falls under the responsibility of the Compliance & Sustainability department, with oversight from the ESG Committee and final approval from the Board of Directors of Ghella S.p.A. KPMG S.p.A. conducted the limited assurance engagement in compliance with ISAE 3000 (Revised). For additional information regarding the audit's scope and the procedures carried out by the independent auditor, please refer to the 'Independent Auditors' Report'.

Data collection methodology

Starting from 2022, data collection has been facilitated through an IT platform accessible to all Company Units. Subsequently, the collected data are analysed and processed by the respective Corporate Offices.

GRI Content Index

Ghella has reported in accordance with the GRI Standards for the period 1st January 2023 – 31st December 2023.

GRI Standard 2021	Description	Page	Notes
2-1	Organizational details	8-9,18-20,135	The head office of Ghella S.p.A. is at: Via Pietro Borsieri, 2/A - 00195 Rome
2-2	Entities included in the organization's sustainability reporting	124-125	
2-3	Reporting period, frequency and contact point	124	The External Relations, Communications & Sustainability function can be contacted at email address: sustainability@ghella.com .
2-4	Restatements of information		
2-5	External assurance	125, 132-134	
2-6	Activities, value chain and other business relationships	8-9,24-25,14	
2-7	Employees	50-52	Less than 1% of employees have part-time work contracts. Of these, 12 are women and 3 are men.
2-8	Workers who are not employees	52	
2-9	Governance structure and composition	18-20	
2-10	Nomination and selection of the highest governance body	20	
2-11	Chair of the highest governance body	20	
2-12	Role of the highest governance body in overseeing the management of impacts	20	
2-13	Delegation of responsibility for managing impacts	20	
2-14	Role of the highest governance body in sustainability reporting	20,125	
2-15	Conflicts of interest		The members of the BoD sign a declaration of responsibility and absence of conflict of interest.
2-16	Communication of critical concerns		The reports are processed and verified by the competent Board of Statutory Auditors (OdV for Italy, General Counsel for those in the foreign scope). At the end of the operations, the minutes are circulated to the BoD. No critical reports were recorded in 2023.
2-17	Collective knowledge of the highest governance body	20,59	The meetings of the ESG Committee, which include members of the BoD, are also an opportunity to train and raise awareness among those who govern the organisation. The external certification body RINA S.p.A. annually conducts a third-party audit of the organization, to verify compliance with the requirements of the ISO 9001, 14001, 45001 standards of the Management System and the Policies signed by the President.
2-18	Evaluation of the performance of the highest governance body		The Board of Directors is not subject to evaluation of their performance.
2-19	Remuneration policies	59	
2-20	Process to determine remuneration		Due to the nature of our organization, this indicator is not applicable.
2-21	Annual total compensation ratio		8.35 in 2023 (-8% compared to 2022, as the restated rate is 9.08). The result is calculated only for direct employees of Ghella S.p.A..
2-22	Statement on sustainable development strategy	5	
2-23	Policy commitments	21	All our Policies are signed by the President and CEO, communicated to employees in the onboarding process, and made available on the intranet and website ghella.com. They are reviewed annually during the management system review to ensure consistency with the mission and the vision of the organization.
2-24	Embedding policy commitments	21	
2-25	Processes to remediate negative impacts	21-23	
2-26	Mechanisms for seeking advice and raising concerns	21-23	
2-27	Compliance with laws and regulations		In 2023 there were no significant cases of non-compliance with laws or regulations.
2-28	Membership associations	89	
2-29	Approach to stakeholder engagement	14-15	
2-30	Collective bargaining agreements	59	
3-1	Process to determine material topics	14-15	
3-2	List of material topics	15	

GRI Standard 2021	Description	Page	Notes
Integration of Sustainability in Corporate Governance			
3-3	Management of material topics	20	
Business Conduct			
3-3	Management of material topics	21-22	
205-3	Confirmed incidents of corruption and actions taken		During 2023, there were no cases of corruption, and no lawsuits were filed against Ghella or its representatives.
Enterprise risk management			
3-3	Management of material topics	22	
Equal opportunity			
3-3	Management of material topics	54	
405-1	Diversity of governance bodies and employees	20,54-55	
Diversity and inclusion			
406-1	Incidents of discrimination and corrective actions taken		During 2023 there were no incidents of discrimination on grounds of diversity or violation of the rights of indigenous people.
Welfare and wellbeing			
3-3	Management of material topics	59	
402-1	Minimum notice periods regarding operational changes		The minimum notice period is always recognized by the collective agreements or by the relevant local laws. It varies from 1 to 5 weeks depending on the geographic area.
People development			
3-3	Management of material topics	58	
404-1	Average hours of training per year per employee	58	The average hours of training by professional category are 37 for managers, 17 for white collars and 25 for blue collars.
404-3	Percentage of employees receiving regular performance and career development reviews	58	
Occupational Health and Safety			
3-3	Management of material topics	21-23,62	
403-1	Occupational health and safety management system	62	
403-2	Hazard identification, risk assessment and incident investigation	62-65	
403-3	Occupational health services	62	
403-4	Worker participation, consultation, and communication on occupational health and safety	62	
403-5	Worker training on occupational health and safety	58,62	
403-6	Promotion of worker health	62	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	62-65	
403-9	Work-related injuries	62-65	
Economic performance			
201-1	Direct economic value generated and distributed	78-79	
Assessment and engagement of suppliers			
204-1	Proportion of spending on local suppliers	80	
Creating value for local communities			
308-1	New suppliers that were screened using environmental criteria	80	
414-1	New suppliers that were screened using social criteria	80	
Human rights			
3-3	Management of material topics	21-23,80	
408-1	Operations and suppliers at significant risk for incidents of child	80	Only 2 suppliers are registered in countries considered at risk (China and Dominican Republic).
Quality and innovation			
3-3	Management of material topics	21-23, 84-85	

GRI Standard 2021	Description	Page	Notes
Active role in developing sector policies and standards			
3-3	Management of material topics	89	
Mitigation of climate change			
3-3	Management of material topics	21-23, 98-102	
302-1	Energy consumption within the organization	99-100	
305-1	Direct (Scope 1) GHG emissions	101-102	
305-2	Energy indirect (Scope 2) GHG emissions	101-102	
Efficient management of water resources			
3-3	Management of material topics	21-23, 108-109	
303-1	Interactions with water as a shared resource	108-109	
303-2	Management of water discharge-related impacts	109	
303-3	Water withdrawal	108	
Prevention and reduction of pollution			
3-3	Management of material topics	21-23	
303-4	Water discharge	109	
Sourcing of sustainable materials and eco-design			
3-3	Management of material topics	21-23, 111	
301-1	Materials used by weight or volume	111	
Efficient waste management			
3-3	Management of material topics	21-23, 116-117	
306-3	Waste generated	116-117	
306-4	Waste diverted from disposal	116-117	
306-5	Waste directed to disposal	116-117	
Biodiversity and protection of ecosystems			
304-2	Significant impacts of activities, products and services on biodiversity	21-23,111	

Australia
Photo by Rachele Maistrello from the photographic project "Nuove avventure sotterranee"

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(This independent auditors' report has been translated into English solely for the convenience of international readers. Accordingly, only the original Italian version is authoritative.)

Independent auditors' report on the sustainability report

To the board of directors of
Ghella S.p.A.

We have been engaged to perform a limited assurance engagement on the 2023 sustainability report (the "sustainability report") of the Ghella Group (the "group").

Directors' responsibility for the sustainability report

The directors of Ghella S.p.A. (the "parent") are responsible for the preparation of a sustainability report in accordance with the "Global Reporting Initiative Sustainability Reporting Standards" issued by GRI - Global Reporting Initiative ("GRI Standards").

The directors are also responsible for such internal control as they determine is necessary to enable the preparation of a sustainability report that is free from material misstatement, whether due to fraud or error.

They are also responsible for defining the group's objectives regarding its sustainability performance and the identification of the stakeholders and the significant aspects to report.

Auditors' independence and quality management

We are independent in compliance with the independence and all other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for accountants (the IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our company applies International Standard on Quality Management 1 and, accordingly, is required to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal regulatory requirements.

Auditors' responsibility

Our responsibility is to express a conclusion, based on the procedures performed, about the compliance of the sustainability report with the requirements of the GRI Standards. We carried out our work in accordance with the criteria established by "International Standard on Assurance Engagements 3000 (revised) - Assurance Engagements other than Audits or Reviews of Historical Financial Information"

("ISAE 3000 revised"), issued by the International Auditing and Assurance Standards Board (IAASB) applicable to limited assurance engagements. This standard requires that we plan and perform the engagement to obtain limited assurance about whether the sustainability report is free from material misstatement.

A limited assurance engagement is less in scope than a reasonable assurance engagement carried out in accordance with ISAE 3000 Revised, and consequently does not enable us to obtain assurance that we would become aware of all significant matters and events that might be identified in a reasonable assurance engagement.

The procedures we performed on the sustainability report are based on our professional judgement and include inquiries, primarily of the parent's personnel responsible for the preparation of the information presented in the sustainability report, documental analyses, recalculations and other evidence gathering procedures, as appropriate.

Specifically, we performed the following procedures:

1 analysing the reporting of material aspects process, specifically how the reference environment is analysed and understood, how the actual and potential impacts are identified, assessed and prioritised and how the process outcome is validated internally;

2 comparing the financial disclosures presented in section "5.1 Key financial and economic results" and section "5.2 Economic value generated and distributed" of the sustainability report with those included in the group's consolidated financial statements;

3 understanding the processes underlying the generation, recording and management of the significant qualitative and quantitative information disclosed in the sustainability report.
Specifically, we held interviews and discussions with the management personnel of the parent. We also performed limited procedures on documentation of specific construction sites (BTC - Brennero Mules Lt 2-3, M6 Stage 1 (Sydney), Sydney Airport Metro, Telese - NABA Telese-Vitulano, Central Interceptor, Broadway D&C) to gather information on the processes and procedures used to gather, combine, process and transmit non-financial data and information to the office that prepares the sustainability report.

Furthermore, with respect to significant information, considering the group's business and characteristics:

- at group level:
  a) we held interviews and obtained supporting documentation to check the qualitative information presented in the sustainability report;
  b) we carried out analytical and limited procedures to check, on a sample basis, the correct aggregation of data in the quantitative information;
- we selected BTC - Brennero Mules Lt 2-3, M6 Stage 1 (Sydney), Sydney Airport Metro, Telese - NABA Telese-Vitulano, Central Interceptor and Broadway D&C on the basis of their business, contribution to the key performance indicators at consolidated level, to obtain documentary evidence, on a sample basis, supporting the correct application of the procedures and methods used to calculate the indicators.

Ghella Group
Independent auditors' report
31 December 2023

Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the 2023 sustainability report of the Ghella Group has not been prepared, in all material respects, in accordance with the requirements of the GRI Standards.

Rome, 2 July 2024

KPMG S.p.A.

(signed on the original)

Marco Maffei
Director of Audit

Notes

1. Hydroelectric plants are included in the total of hydraulic works.

2. PORTER M. E., KRAMER M. R., Creating Shared Value, in "Harvard Business Review", January/February 2011, p.64-77.

3. Trento railway bypass – Section 3A, AV Battipaglia-Romagnano - Section 1, AV Lercara-Caltanissetta Xirbi – Section 3, AV Caltanissetta Xirbi-Nuova Enna – Section 4th.

4. Pursuant to Annex I of Delegated Regulation (EU) 2021/2139.

5. Pursuant to Annex II of Delegated Regulation (EU) 2023/2486.

6. Approved by the Inter-Ministerial Committee for Ecological Transition (Cite) in Resolution No. 1 of 8 March 2022.

7. The figure excludes training provided by the CPB - Ghella JV that controls the Western Sydney Airport contract.

8. The frequency index (LTIFR) represents the average frequency of injuries lasting more than three days, as defined by Eurostat. It is calculated according to UNI 7249 by taking the ratio of the number of injuries to the total hours worked and multiplying by 1,000,000.

9. The severity index (LTISR) measures the average severity of injuries lasting more than three days, as defined by Eurostat. It is calculated according to UNI 7249 by taking the ratio of the number of days absent from work to the total hours worked and multiplying by 1,000.

10. The total frequency index (TRIFR) accounts for all recorded accident events, including work injuries lasting more than three days as defined by Eurostat (lost-time injury "LTI"), injuries requiring only medical treatment (medical treatment case "MTC"), injuries resulting in a job change without absence from work (restricted work case "RWC"), and fatalities. The index is calculated using the ratio of the number of recordable work injuries to the total hours worked and multiplying by 1,000,000.

11. Accidents at work - lost-time injury "LTI". Injuries lasting more than three days, as defined by Eurostat, are included.

12. Injuries with only medication - medical treatment case "MTC".

13. Injury that did not generate absence from work - restricted work case "RWC".

14. Sum of LTIs, MTCs and RWCs.

15. The reported rate was calculated by considering the ratio of the number of injuries with serious consequences to total hours worked multiplied by 1,000,000.

16. Compared with the 2021 baseline.

17. Compared with the 2021 baseline.

18. The ratio of emissions divided by participation rates (23,565 tCO_{2eq}) and the total corporate revenues is 21.67 tCO_2 / Revenues in millions of euros (-59.6% compared to the 2020 baseline value of 53.64 tCO_2 divided by partecipation rates/ Revenues in millions of euros, -45.7% compared to the 2021 baseline value of 39.88 tCO_2 divided by partecipation rates/ Revenues in millions of euros).

19. The list shows some examples of initiatives implemented at some of our worksites.

Our Offices

New Zealand, Central Interceptor
Photos by Giulia Parlato from the photographic project "Nuove avventure sotterranee"

GHELLA

1894

130TH
ANNIVERSARY

Senza Cloro

Senza Acido

Carte di lunga durata

Carta da fonti gestite in maniera sostenibile


GHELLA
1894
130TH
ANNIVERSARY