

annual report 2023

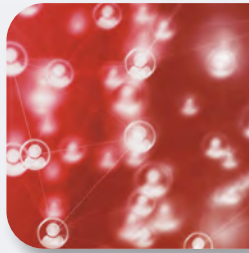


## Message from our President



02

## Management report



04

Highlights of the year	04
Key figures	07
Financial review	08

## Corporate sustainability



10

Our team	10
The fight against corruption	13
Society	14
Environment	19
Innovation	21
Contribution to the SDGs	23

## Featured activity



32

## World presence



56

Office network	56
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## Message from our President

The constant effort, dedication and talent of the professionals of the TYP SA group, together with our procedures and systems, continue to bear fruit. 2023 has proven to be another extraordinary year in which we have reached record figures in revenue, new contracts and backlog. Our revenue has exceeded 350 million euros, representing a growth of 8% and contracts awarded total over 400 million euros, 15% higher than the previous year. With 3,600 professionals now in the Group and a backlog exceeding 400 million euros at year end, we are optimistic about 2024.

We have increased our presence in Northern Europe, with important new contracts in Sweden, Norway, the UK and Ireland, and are achieving significant success in California. Our firm commitment to Australia was endorsed by the incorporation of EDG into the TYP SA group. EDG is a highly recognised and admired engineering firm in our sector and a platform for the group's growth in the Australian market. TYP SA's activity in the Middle East almost doubled, and although in recent months we have seen a certain slowdown in investment in countries like Saudi Arabia, this remains one of our main markets.

We maintain a higher proportion of design activities compared to construction-related services and a greater activity in the area of transport, underlining our position as a key player in this sector. This is especially true in the rail sector, with excellent positioning in emblematic projects of countries such as Sweden, Ireland, the United Kingdom, Mexico, India, Australia and the USA. In parallel, we also have important hydraulic projects, and we are a reference in the maintenance and operation of dams. In the field of renewable energies, we continue amongst the world's leading engineering companies. In the area of building, we have achieved tremendous success both in unique projects and in industrial building and data processing centres.

We continue to expand our presence in the fields of maintenance and operation of infrastructures, where our subsidiary RAUROS continues to reap enormous success in Latin America. At the end of 2023, the company Teknés, structural monitoring and geotechnical auscultation specialist, joined the TYP SA group. Teknés, with its own advanced technology, reinforces and complements the services of our subsidiaries INTEMAC and MC2.

“2023 has proven to be another extraordinary year in which we have reached record figures in revenue, new contracts and backlog”

During 2023, we have worked on 108 innovation and improvement actions driven by the digital accelerator TYP SA, including R&D projects as well as the optimisation of procedures and systems. We have achieved great international recognition for our digital capabilities related to engineering, infrastructure and building services, allowing us to successfully access large contracts in competition with the world's largest engineering firms. We have continued our “Sustainability Action Plan” with greater internal coordination and reinforcing training actions. Effective management of water resources, efficient use of energy, sustainability certifications in infrastructure and buildings, reduction of the carbon footprint, calculation of the life cycle of materials, circularity or biodiversity conservation are fundamental aspects of our strategy.

We maintain our status as a signatory to the United Nations Global Compact and renew our commitment to its ten principles on human rights, labour, environment and anti-corruption. We have been recognised by The Global Compact Network for two new good business practices, which takes our total to 17 recognitions by this Agency.

The TYP SA Foundation for Cooperation has continued its work at the Lago Alberto University in the Democratic Republic of the Congo, where each year the quality of teaching and the number of students increase. Through the Foundation, we have also participated in other projects in Kenya, Senegal, the Dominican Republic and Spain, where we have signed a collaboration agreement for Biomedical Research at the Child Oncology ICU at Hospital La Paz in Madrid.

There are many challenges we continue to face. There are high levels of debt in many of the countries in which we operate, and we have already seen a certain slowdown in investment, a growth in protectionism, and a tightening of fiscal policies and tariffs on our activity. The wars in the Ukraine and Gaza continue to generate horror and uncertainty, and a sad and useless diversion of resources already visible in the decline in development aid funds.

The world has a huge need for our services, and we are optimistic for the future. We approach 2024 with total confidence, not only because of our backlog and our financial strength, reinforced by yet another year with extraordinary results, but above all because we can count on the effort and commitment of all the professionals that make up the TYP SA Group.

PABLO BUENO TOMÁS  
TYP SA Group President and CEO

Green-Datacentre with the latest technology for Quetta/Core Capital in Tres Cantos, Madrid





## Management report

### Highlights of the year

**MARKET ACTIVITY**

This year, the Group's activity has grown

Revenue:  
**8%**

Contracts Awarded:  
**15%**

Backlog:  
**11%**

“ We participate throughout the entire infrastructure lifespan, providing innovative solutions to enhance the wellbeing of society ”



### UNITED STATES AND CANADA

Strengthening economy, showing high activity in the engineering sector.



New field of forensic engineering activity in Canada, with the entry of the subsidiary INTEMAC.



### SPANISH-SPEAKING LATIN AMERICA

Boost of the industrial, building and energy areas in Mexico, and maintenance of the projects associated with Government-Government agreements (GTG) in Peru.



Reactivation of our presence in El Salvador and diversification of our activity in Panama with new clients.

### BRAZIL

Significant public investments planned with the launch of the Growth Acceleration Plan.



New transport infrastructure concessions programme.



### SPAIN

High level of public tendering, especially in the field of transport, but with lower growth than in previous years.



Our subsidiary INTEMAC acquires the company Teknes Innovación, specialising in inspection, rehabilitation and instrumentation of structures.

### REST OF EUROPE

Continuity of our participation in major railway projects in the United Kingdom, consolidation of our presence in Sweden and strengthening of our positioning in other Nordic countries.

**19%** of the Group's revenue | **172** people | **7** offices

Important activity in Eastern Europe in the fields of sustainable mobility and energy efficiency.



Dublin, Ireland

### AFRICA

Consolidation of the East African market with new contracts in Tanzania and Uganda, and significant prospects for large investments in electricity interconnectivity.

**5%** of the Group's revenue | **95** people | **3** offices

Significant presence in the development of the East African Community railway network.



Kampala, Uganda

### MIDDLE EAST

Important framework contract for the development of new facilities and infrastructures for the Ministry of Defence in Saudi Arabia signed with the US Army Corps of Engineers.

**15%** of the Group's revenue | **165** people | **2** offices

Increase in our participation in the renewable energy sector and in the reactivation of rail investment in the region.



Riyadh, Saudi Arabia

### ASIA AND AUSTRALASIA

Slowdown of public tenders in India and Bangladesh due to electoral processes, although with good prospects for 2024.

**10%** of the Group's revenue | **230** people | **5** offices

Important opportunities in the field of transport infrastructure in Australia.



Dhaka, Bangladesh

## Key figures

Consolidated data and Group figures (in € million).

REVENUE	2019	2020	2021	2022	2023	2023 (USD)
Total	219.40	239.44	266.93	325.13	350.09	386.85
USA and Canada	21.11	21.18	34.34	31.48	34.36	37.97
Spanish-Speaking Latin America	41.20	45.23	56.79	75.59	58.67	64.83
Brazil	11.68	8.72	10.00	15.37	18.00	19.89
Spain	47.03	52.10	53.36	60.55	66.49	73.47
Rest of Europe	29.48	36.13	38.55	55.27	67.34	74.41
Africa	15.48	12.67	14.89	17.65	16.36	18.08
Middle East	37.65	40.00	30.60	28.68	53.87	59.53
Asia and Australasia	15.77	23.41	28.40	40.54	35.00	38.67

CONTRACT AWARDS	2019	2020	2021	2022	2023	2023 (USD)
Total	250.62	267.79	280.14	350.91	401.93	444.13
USA and Canada	18.90	28.76	41.99	35.05	37.27	41.18
Spanish-Speaking Latin America	36.03	49.37	69.11	65.62	80.46	88.91
Brazil	16.71	15.09	7.15	16.04	22.34	24.69
Spain	59.78	49.49	59.49	72.56	86.50	95.58
Rest of Europe	28.74	55.89	29.98	60.31	74.73	82.58
Africa	17.82	13.34	13.22	23.04	14.96	16.53
Middle east	34.42	27.67	19.08	46.72	57.28	63.29
Asia and Australasia	38.22	28.18	40.12	31.57	28.39	31.37

BACKLOG	2019	2020	2021	2022	2023	2023 (USD)
Total	316.86	320.77	330.37	362.77	403.12	445.45
USA and Canada	8.54	15.46	24.47	28.77	30.90	34.14
Spanish-Speaking Latin America	43.67	42.52	56.11	50.97	72.46	80.07
Brazil	42.36	35.92	22.95	26.30	32.05	35.41
Spain	68.53	65.93	72.35	84.25	103.97	114.89
Rest of Europe	17.28	37.13	29.56	33.85	41.71	46.09
Africa	40.33	40.66	37.63	42.64	32.54	35.96
Middle East	53.58	37.46	27.88	47.69	48.15	53.21
Asia and Australasia	42.57	45.69	59.42	48.30	41.34	45.68

Equity	2019	2020	2021	2022	2023	2023 (USD)
	112.07	119.51	132.33	154.30	172.35	190.45
Total equity	2019	2020	2021	2022	2023	2023 (USD)
	110.30	115.39	130.10	153.71	173.80	192.05
Earnings before taxes	2019	2020	2021	2022	2023	2023 (USD)
	16.04	21.00	28.95	47.64	47.02	51.96
Earnings after taxes*	2019	2020	2021	2022	2023	2023 (USD)
	11.07	14.12	19.39	35.13	34.75	38.40

\* Attributed to the parent company

People	2019	2020	2021	2022	2023
No of people (at Dec. 31)	2,818	2,845	3,126	3,317	3,592
No of people (yearly average)	2,665	2,831	2,974	3,222	3,456

Equity / Total assets	2019	2020	2021	2022	2023
	0.61	0.59	0.55	0.55	0.59

Current assets / Current liabilities	2019	2020	2021	2022	2023
	2.58	2.36	2.10	2.20	2.38

% Earnings after taxes / Initial net equity	2019	2020	2021	2022	2023
	10.8%	13.3%	17.0%	27.4%	22.9%

% Earnings before taxes / Revenue	2019	2020	2021	2022	2023
	7.3%	8.8%	10.8%	14.7%	13.4%

% Earnings after taxes / Revenue	2019	2020	2021	2022	2023
	5.2%	6.1%	7.3%	11.0%	10.1%

Revenue per person (in euros thousand)	2019	2020	2021	2022	2023
	82.33	84.58	89.75	100.91	101.30

Exchange rate December 31 2023: 1 EUR = 1.1050 USD

## Financial review

CONSOLIDATED ASSETS (in euros)	2023	2022
<b>A) NON-CURRENT ASSETS</b>	<b>51,442,538.22</b>	<b>39,811,730.11</b>
I. Intangible assets	5,168,154.23	3,875,786.11
II. Plant and equipment	28,412,852.04	23,571,282.85
III. Long-term investments in subsidiaries	32,194.98	7,582.70
IV. Long-term financial investments	9,495,334.72	4,410,862.61
V. Deferred tax assets	8,334,002.25	7,946,215.84
<b>B) CURRENT ASSETS</b>	<b>240,539,059.69</b>	<b>238,538,068.78</b>
I. Non-current assets held for sale	-	68,822.27
II. Inventories	13,095,496.44	12,829,809.55
III. Accounts receivable, work in progress and others	91,660,809.84	94,534,929.21
IV. Short-term investments in Group companies and associates	3,372.44	3,290.13
V. Short-term investments	1,004,305.11	8,728,400.37
VI. Prepaid expenses and other current assets	3,005,861.85	3,201,262.01
VII. Cash and cash equivalents	131,769,214.01	119,171,555.24
<b>TOTAL ASSETS (A+B)</b>	<b>291,981,597.91</b>	<b>278,349,798.89</b>

CONSOLIDATED EQUITY AND LIABILITIES (in euros)	2023	2022
<b>A) TOTAL EQUITY</b>	<b>173,796,545.63</b>	<b>153,710,039.41</b>
<b>A-1) Equity</b>	<b>172,353,081.84</b>	<b>154,297,991.42</b>
I. Share capital	2,400,000.00	2,400,000.00
II. Retained earnings	145,207,294.75	126,763,642.59
III. (Treasury stock)	-	-
IV. Net income attributable to the parent company	34,745,787.09	35,134,348.83
V. (Interim dividend)	(10,000,000.00)	(10,000,000.00)
A-2) Currency translation adjustments	(664,449.17)	(1,852,262.66)
A-3) Grants, donations, and bequests received	76,177.39	-
A-4) Minority interests	2,031,735.57	1,264,310.65
<b>B) NON-CURRENT LIABILITIES</b>	<b>16,969,732.43</b>	<b>16,299,231.04</b>
I. Long-term provisions	10,909,017.70	9,468,639.05
II. Long-term debt	3,717,878.49	3,663,346.24
III. Billing in excess of cost (long-term)	1,834,560.00	2,092,346.60
IV. Deferred tax liability	508,276.24	1,074,899.15
<b>C) CURRENT LIABILITIES</b>	<b>101,215,319.85</b>	<b>108,340,528.44</b>
I. Short-term provisions	1,572,915.26	2,638,654.24
II. Short-term debt	1,826,512.01	10,188,203.80
III. Billing in excess of cost	40,717,229.41	41,081,586.81
IV. Trade accounts payable and advanced billing	56,766,193.67	53,918,233.32
V. Accrued expenses and other current liabilities	332,469.50	513,850.27
<b>TOTAL EQUITY AND LIABILITIES (A+B+C)</b>	<b>291,981,597.91</b>	<b>278,349,798.89</b>

CONSOLIDATED PROFIT AND LOSS ACCOUNT (in euros)	2023	2022
<b>A) CONTINUING OPERATIONS</b>		
Operating revenue	350,091,021.52	325,129,706.08
Changes in inventories of developments in progress	234,548.24	4,636,376.73
Capitalised in-house work on fixed assets	15,823.50	53,248.05
Materials, services of third parties and subcontractors	(81,547,008.41)	(90,885,825.58)
Other operating revenues	2,145,569.14	2,402,962.58
Personnel costs	(173,650,369.40)	(155,943,758.86)
Other operating costs	(48,585,832.33)	(35,221,463.38)
Depreciation and amortisation	(4,570,119.32)	(4,191,295.70)
Surplus	1,652,386.47	15,746.69
Income from sale of assets	20,586.55	(99.54)
<b>A-1) Operating income</b>	<b>45,806,605.96</b>	<b>45,995,597.07</b>
<b>A-2) Financial income</b>	<b>1,183,215.72</b>	<b>1,640,892.58</b>
Share in the profits (losses) of companies accounted for using the equity method	31,400.38	4,181.22
<b>A-3) Earnings before taxes</b>	<b>47,021,222.06</b>	<b>47,640,670.87</b>
Income taxes	(11,812,257.86)	(11,927,324.39)
<b>A-4) Net income from continuing operations</b>	<b>35,208,964.20</b>	<b>35,713,346.48</b>
<b>A-5) Consolidated net income for the year</b>	<b>35,208,964.20</b>	<b>35,713,346.48</b>
<b>NET INCOME ATTRIBUTABLE TO NON-CONTROLLING INTERESTS</b>	<b>463,177.11</b>	<b>578,997.65</b>
<b>NET INCOME FOR THE PERIOD ATTRIBUTABLE TO THE PARENT COMPANY</b>	<b>34,745,787.09</b>	<b>35,134,348.83</b>

# 3.



## Corporate sustainability

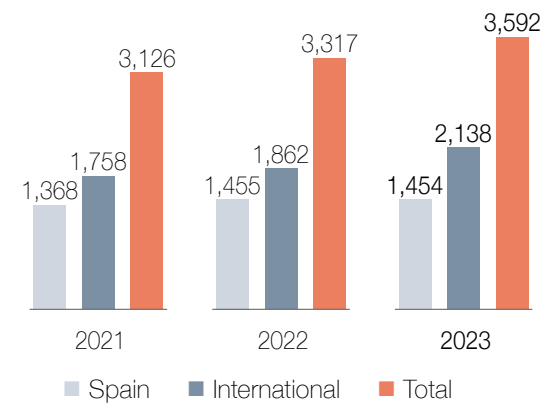
### 3.1 Our team

**OUR PEOPLE:** our most valuable asset.

We base our strategy on pursuing engagement and wellbeing, paying special attention to career development.

#### ANALYSIS AND INDICATORS

Number of people



“ We attract and retain the industry’s top people ”

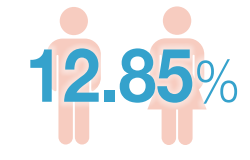
Gender ratio



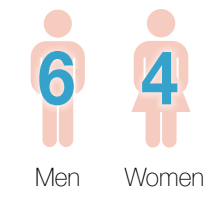
Staff per type of employment contract



Staff turnover in 2023



Board of directors



People by region

USA and Canada	196	5%
Spanish-Speaking Latin America	994	28%
Brazil	286	8%
Spain	1,454	40%
Rest of Europe	172	5%
Africa	95	3%
Middle East	165	5%
Asia and Australasia	230	6%
<b>Total</b>	<b>3,592</b>	<b>100%</b>

#### EMPLOYEE BENEFITS

##### Flexible and Personalised Employee Remuneration Plan -TYPESA BENEFITS-

Due to the positive results of this Flexible Remuneration Plan, in Spain, we continue to offer the opportunity for benefits in kind (dining cards, childcare vouchers, private health insurance, travel cards and training), adapted to suit personal requirements, generating significant savings for the employee.

People across the entire Group can enjoy the same compensation and benefit scheme in each of the countries where we operate, without discrimination or limitations and regardless of gender.

##### Life and permanent disability insurance

New this year, TYPESA has made available an optional life and permanent disability insurance to the Group employees in Spain, paid in full by the company for those who choose to opt in.



TYPESA office in Madrid, Spain

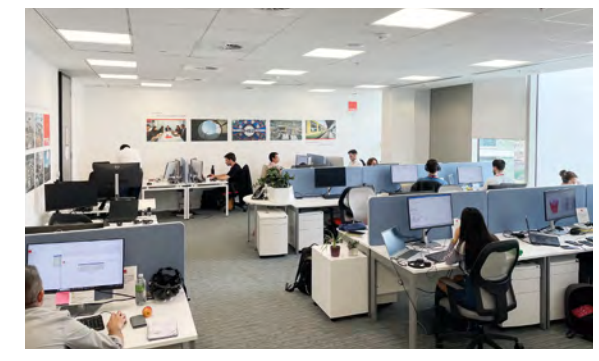
#### EMPLOYEE SERVICES

##### Relocation policy

Providing competitive packages for expats:

- In line with market practices in the sector.
- In line with local costs of living.
- In line with our international office conditions.

We manage the paperwork (visas, flights, tax relief, etc.).



TYPESA office in London, United Kingdom

## OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

### In-house health and safety service

TYP SA has the technical expertise to manage occupational safety, ergonomics and applied psychosociology, while outsourcing industrial hygiene and health monitoring through Cualtis.

Health and safety are managed in line with local practice in the Group's international management areas, offices and subsidiaries.

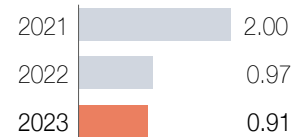
### System improvements

- Renewal of certification ISO 45001:2018 for occupational health and safety management systems, incorporating, in the scope in 2023, TYP SA Ltd.'s office in Leeds, United Kingdom.
- Progress is being made in the implementation of a Health and Safety mobile application to improve the effectiveness of operational control in our workplaces. The application been implemented at the TYP SA headquarters and usage is spreading in the various centres across Spain.

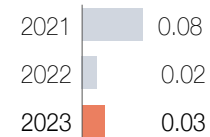


### Accident rate statistics

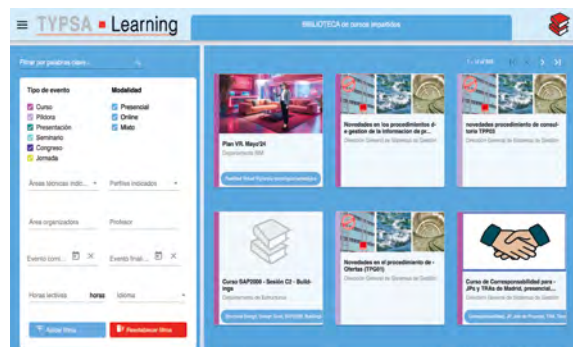
Accident Frequency Rate (AFR) for work-related accidents  
 $AFR = (\text{No of accidents} / \text{No of hours worked}) \times 10^6$



Accident Severity Rate (ASR)  
 $ASR = (\text{No of days lost} / \text{No of hours worked}) \times 10^3$



## TRAINING



TYP SA Learning Platform

### Strengthening our intellectual capital

- One of the Group's firmest commitments to its people.
- Essential for career progression and motivation.
- Annual and area-specific training plans.
- Maintaining global training providers.
- Consolidating the TYP SA Learning platform to promote internal training and knowledge sharing amongst employees. New features such as the issuance of attendance and achievement certificates linked to exams.

“Expanding our knowledge allows us to better serve our clients and society”

### Priority training in:

- **Advanced algorithms in consulting, architecture and engineering:**
  - Constitutive models and geotechnical engineering
  - Tunnel design and underground works.
  - Flood risk analysis and management, and dam safety.
  - Fire safety.
  - Coastal and port engineering.
  - Technology for sustainable building and seismic engineering.
  - Offshore wind engineering.
  - Optimisation of PV power stations and electricity networks.
  - Transport and mobility planning
  - Strategic infrastructure consulting.
- **Digitalisation and implementation of new technologies:**
  - Digital twins. Augmented virtual reality.
  - Use of drones and laser scanning in consulting, architecture and engineering.
  - Advanced BIM processes and tools. Collaboration platforms.
  - Data Governance and Artificial Intelligence (AI).
  - Emerging technologies for software development.
- **Sustainability of buildings, infrastructures and cities:**
  - Decarbonization and BIM-6D methodologies.
  - Climate change adaptation.
  - Circular economy.
  - Energy efficiency.
  - Nature-based solutions.
  - Cost-benefit analysis, including social, environmental and economic factors.
  - Operation and maintenance.

Training hours



Training activity



Training course in TYP SA office in Peru

## 3.2 The fight against corruption

Our **INTEGRITY MANAGEMENT SYSTEM (IMS)**, enables us to pursue and consolidate an ethical corporate culture, prioritising regulatory compliance, transparency and integrity.

“We maintain a strong commitment to integrity and transparency, improving our internal management procedures every year”





### COMMITMENT TO ETHICS AND INTEGRITY

Supported by our:

- Code of ethics containing mandatory guiding principles for everyone in the Group.
- Corporate integrity policy and gift policy.
- Internal information system policy.
- Integrity management manual.
- Annual modern slavery statement and equality, diversity and inclusion statement.
- Financial and non-financial control procedures.
- ISO 37001 anti-bribery certification.
- Compliance Committee, working independently and reporting directly to the Board of Directors.

#### System improvements

- 100% newcomers trained on the integrity management system.
- New internal information system policy.
- New communication channel and new procedure for managing reported infractions across the entire Group.
- Certification of the Peru Branch in the ISO 37001 Anti-bribery management systems standard.
- Inclusion of the Spanish subsidiaries and the branches in Chile and Panama into the conflict of interest control tool for high-risk staff.
- New automated tool for risk assessment in offers, including corruption risk.
- Improvement of operational procedures:
  - Update of the due diligence form for associated companies in bidding processes.
  - Modification of the confidentiality commitment, duty of secrecy, general obligations, and usage rules of media for use by all companies in the Group.

## 3.3 Society

**COMMITMENT TO SOCIETY:** acting responsibly and playing our part in improving society wherever we are.

### CLIENTS

We offer our clients service excellence: we aim to be a trusted partner.

#### Commitment to service excellence

- We identify client requirements and needs.
- Our service goes beyond initial expectations

#### Improvement tools

- Client satisfaction surveys.
- Interactive client communication channels to keep track of projects.

#### Client management

Client satisfaction survey score

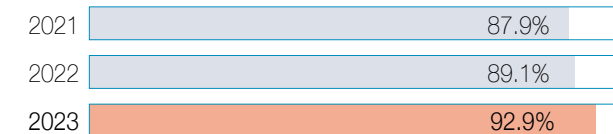


(Max. possible 10)

Number of clients who will, or who are very likely to, work with the Group again



Clients who rated the Group's work as good or very good



Number of incidents dealt with and resolved



### SUPPLIERS

**Supplier approval:** we guarantee that collaborators and subcontractors work to our standards.

#### Systems and procedures

An interactive database, fed with dynamic questionnaires containing all the available records on both suppliers and subcontractors, is the main control and selection tool for choosing the right supplier.



Subcontractor evaluation scores



(Max. possible 10)

### TYP SA'S MANAGEMENT SYSTEM

**We operate as one company from anywhere in the world**

TYP SA's ISO 9001 certified quality system has been in place for 28 years and is a common reference for all branches and subsidiaries.

Our ISO 14001 certified Management System has assured correct environmental performance since 2001.

#### System improvements

- The scope of the ISO 14001 certification has been expanded to include TYP SA for Engineering Services (Saudi Arabia) and MC2. MC2 has also been included in ISO 9001.
- TYP SA obtained accreditation according to the requirements set out in the UNE-EN ISO/IEC 17020 standard for inspection activities in the railway sector (Type C).



Number of internal quality and environment audits



Internal quality and environment audit scores



(Max. possible 10)

## THE COMMUNITY

### Our presence in the industry

#### Involvement in business and professional organisations

Leadership in positioning the sector for the opportunities presented by regulatory changes in climate change and sustainable energy, international mobility, digital transformation, sustainable cities, international cooperation, and development financing.

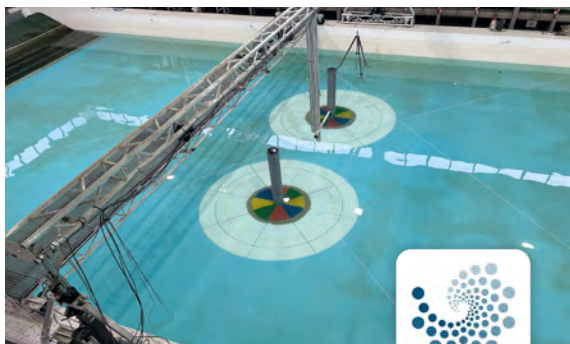


Inés Ferguson, EFCA President

- Important representation in the main Spanish, European, and international industry organisations: FIDIC, EFCA (Presidency), TECNIBERIA, MAFEX, and AEDIIP (Presidency).
- We are active in Spain's Professional Associations and professional institutions (Caminos Foundation; Spanish Institution of Civil Engineers, Agustín de Betancourt Foundation and the Engineering Institute of Spain).
- Presence in the main discipline-related technical organisations: the Mediterranean Water Institute, the Spanish Association of Tunnels and Underground Works (AETOS), the World Road Association (PIARC), the International Federation for Structural Concrete (FIB), and the Water Environment Federation (WEF).

#### Working with Universities

- Collaboration with a large majority of universities that offer technical degrees in Spain, as well as with universities in the United Kingdom, United States, Saudi Arabia, Brazil, and Sweden; 75 interns during the year.
- The Group is a Member of the School of Civil Engineering Advisory Board at the Universidad Politécnica de Valencia and collaboration agreement for dual degree programmes.



Madrid School of Civil Engineering Harbour Laboratory



- Collaboration with the Climate Change Professorship at the Universidad Politécnica de Valencia to work together on new simulation algorithms of climate-change effects on infrastructure.
- Collaboration through an Industry PhD programme with the Universitat Politècnica de Catalunya to research into new tunnel engineering technologies.
- Our Agreement with the Madrid School of Civil Engineering Harbour Laboratory is still in place, continuing the 16 years of teaching and innovation support through the TYP SA - Pablo Bueno Harbour Research Unit. This agreement strengthens plans to improve and modernise the laboratory's facilities. More than 200 students visited the unit during the year.
- Collaboration with the Madrid School of Architecture to deliver the University master's degree MEDIP (Comprehensive Project Management).
- Collaboration agreements with the Universidad Politécnica de Madrid, teaching at the Schools of Civil Engineering, Industrial Engineering and Aeronautical Engineering, and in the Universidad Europea.
- Collaboration with the UNED distance learning university to organise and teach the AETOS Master's Degree in Tunnels and Underground Works.
- Our subsidiary Green Blue Management collaborates with the Geography and Land Planning degree at the Universidad de Alicante and offers an external internship programme for the Master in Natural Hazard Planning and Management.
- Our Branch in Sweden, TYP SA AB, collaborates with the University of Stockholm (KTH – Royal Institute of Technology), delivering lectures on bridges and tunnel engineering.
- Collaboration with the Imperial College of London in assessing and supervising Master research projects.
- Collaboration with the University of Cambridge in assessing and supervising 4th year research projects.

- Our subsidiary AZTEC, in the USA, collaborates with:
  - Arizona State University sponsoring/assessing design projects.
  - Northern Arizona University Structural Department, giving seminars.
  - California State University, Los Angeles, sponsoring/assessing design projects.

- Our subsidiary INTEMAC awarded the top three students from the School of Engineering at the Universidad de Cantabria, with the best academic records in Structural Engineering.
- TYP SA awarded the top students from the School of Engineering at the Universidad Politécnica de Madrid, with the best academic records in Civil Constructions, Transport and Urban Services, and Hydrology.

- TYP SA Foundation for Development awarded the best Master's thesis from the School of Civil Engineering, Universidad Politécnica de Madrid, in the area of Development Cooperation.

#### Awards and honours

- 10th Edition of the Segovia Aqueduct Award for Public Works and Environment, awarded by the Fundación Caminos with the collaboration of the Spanish Institution of Civil Engineers.

##### Project "High-speed Access to Galicia - Bringing Territories Closer".

TYP SA received recognition for all its contributions throughout the history of this long project, highlighting, fundamentally, the detailed design of the sections Orense-Santiago (subsection Orense-Lalín), Zamora-Lubián (subsection Cernadilla-Riobó), with a total of 45 km. The most prominent construction supervision works include: the Soto del Real-Segovia subsection (28 km), part of the Madrid-Segovia section, which includes one of the two tubes of the Guadarrama tunnel; railway systems of the Segovia-Valdestillas subsection (110 km); in the Olmedo-Medina-Zamora-Puebla section of Sanabria-Lubián-Orense, the Padorno tunnel (6.4 km), the Porto-Miámán subsection with the Seiró tunnel (1.8 km) and the Miámán-Ponte Ambía subsection; in the Pedralba section of the Pradería (Zamora)-Campobeceros (Orense), the assembly of track along the 56.2 km; in the section Taboada-Rante Tunnel, all the urban integration and conditioning of the Orense Railway Network highlighting the 3.4 km Rante Tunnel.



High-Speed Rail Madrid-Galicia. Pedralba de la Pradería (Zamora)-Campobeceros (Orense) Section

- XII San Telmo Award - Spanish Institution of Civil Engineers in Galicia.

##### Project "High-speed Access to Galicia - Bringing Territories Closer".

Recognition for construction supervision of works on the Madrid-Galicia high-speed line and, in particular, the assembly of track on the 56.2 km long stretch Pedralba de la Pradería (Zamora)-Campobeceros (Orense).

- International Milestone RCC Project Award received jointly from the Spanish National Committee of Large Dams (SPANCOLD) and the Chinese National Committee on Large Dams (CHINCOLD).

##### Enciso Dam in La Rioja, Spain.

The significant technical achievements in the construction of this Roller-Compacted Concrete (RCC) dam have been recognised. TYP SA receives this award together with developers, designers and builders, for its continued involvement with construction management support services since the beginning of the works in 1999.



Award Presentation: International Milestone RCC Project for the Enciso Dam



INTEMAC awards for the top three students with the best academic record in structural engineering



Railway Integration of the City of Logroño

- 20th Edition of Best Development of Urban Regeneration Award 2023 by the Association of Real Estate Promoters of Madrid ASPRIMA and SIMA.

Project “Logroño Railway Integration”.

Prize for the best development of urban regeneration. TYPESA receives this award together with developers, architects, partners and builders, for construction supervision in all phases of the project, including the construction of the new railway station, the new bus station, the great dome and the Felipe VI Park.

- 7th Edition of the Albert Vilalta Award for the Best Catalan Infrastructure, awarded by the Catalan Infrastructure Advisory Council.

Plaza de Las Glorias Tunnel, Barcelona.

Awarded for the best integration of an urban infrastructure, more sustainable and cutting-edge. TYPESA was in charge of the construction supervision together with its partners.

- 20th Edition of Best Development of Urban Regeneration Award 2023 by the Association of Real Estate Promoters of Madrid ASPRIMA and SIMA.

Torre Caleido, Madrid.

TYPESA is recognised in this award together with developers, architects and builders for the Due Diligence, the design-build supervision and support services on site.



Torre Caleido, Madrid

### Forums

As consulting engineering experts, we actively participate in forums, conferences and seminars to draw attention to the new challenges we face in our areas of expertise.

Some of the most important include:

- XXI IMEX-Madrid, Internationalisation Week. February '23.
- Real Estate MIPIM, Cannes. February '23.
- Transforming Transportation Congress, World Bank and World Resources Institute, Washington DC. March '23.
- XXIX Week of Engineering and Environment, SICMA, Valencia. May '23.
- Middle East Rail, Abu Dhabi. May '23.
- International Rail Convention, Toledo. May '23.
- International Real Estate Exhibition of Madrid, SIMAPRO23. May '23.
- UITP Global Public Transport Summit Barcelona. June '23
- Rapid Excavation & Tunnelling Conference, RETC23, Boston. June '23.
- 91st Annual Meeting of the International Commission on Large Dams (ICOLD), Göteborg. June '23
- AETOS Technical Conference, Innovations in Tunnels and Underground Structures, Madrid. June '23
- 10th European Conference on Numerical Methods in Geotechnical Engineering (NUMGE2023), London. June '23
- Australia and New Zealand Conference on Geomechanics (ANZ 2023), Cairns. July '23.
- Congress of Heritage of Public Works, Cuenca, Toledo and Madrid. September '23.
- Spain Smart Water Summit 2023, Madrid. September '23.
- FIDIC Global Infrastructure Conference 2023, Singapore. September '23.



TYPESA Stand at the Rail Live 2023 congress, Madrid

- Congress of Heritage of Public Works, Cuenca, Toledo and Madrid. September '23.
- IABSE Congress (International Association of Bridges and Structural Engineering), Delhi. September '23.
- TAC 2023 Annual Conference (Tunnelling Association of Canada), Toronto. September '23.
- 5th International Trade Fair & Conference Windergy, India. October '23
- IV TYPESA Conference “Sustainable Techniques and Materials in Harbours - Second Part”, in the Harbour Laboratory of the School of Civil Engineering, Madrid. October '23
- 15th Congress - International Society for Rock Mechanics (ISRM), Salzburg. October '23
- International Forum on Financing Railway Projects in Africa, Dakar. October '23
- XVII World Road Congress, Prague. October '23
- VII Water Engineering Conference, Cartagena. October '23
- British Annual Tunnelling Society Young Members (BTSYM) Conference & Exhibition, London. October '23
- International Conference on the Challenges of Storm Drainage in Peru. November '23.
- Rail Live Congress, Madrid. November - December '23.
- Conference on Madrid and the Future of Urbanism and Sustainable Mobility, Madrid. December '23.



Pablo Bueno at the FIDIC Global Infrastructure Conference 2023 in Singapore

## 3.4 Environment

**ENVIRONMENTAL MANAGEMENT SYSTEM:** committed to minimising environmental impacts generated directly or indirectly by civil works.

### LINES OF ACTION

“ We adapt and certify our carbon footprint to the new ISO 14064 standard ”

- Priority given to all environmental aspects in our work.
- Responsible use of resources.
- Proper waste management.
- Staff and suppliers required to observe correct environmental practices.



### Emissions control

TYPESA has two main strategies to fight climate change: from a corporate point of view, calculating and verifying the corporate carbon footprint since 2013, also registered on the National Carbon Footprint Registry of the Ministry for the Ecological Transition, obtaining, not only recognition for the calculation, but also for having achieved a reduction over the years; in parallel, a project strategy developed by the Division of Sustainability and Environmental Assessment, integrating the climate change variables in all project phases, with the aim of achieving both mitigation of GHG emissions and incorporating climate change adaptation measures, with the sole objective of developing resilient infrastructures.

Evolution of the carbon footprint in Spain (tCO<sub>2</sub>eq) and ratio in relation to the activity index per employee



<sup>1</sup> Uncertified and provisional footprint, pending external verification

Although total emissions have risen slightly due to the company's growth, the ratio of emissions related to the activity index continues to decline. Before the end of the year, TYP SA will register the carbon footprint for the years 2022 and 2023, and it is expected to continue maintaining the seal of achievement.

**Waste**

Selective collection of hazardous and non-hazardous waste is a priority at all our offices, to ensure all waste is treated appropriately. Authorised managers deal with hazardous waste safely, while authorised recycling managers take charge of non-hazardous waste, such as paper. Alongside waste management, waste reduction policies are applied such as equipment reuse.

**Resource consumption**

TYP SA continues to closely monitor consumption and improve its systems, thus preventing a greater impact on the depletion of natural resources, in addition to obtaining savings.

Consumption in 2020 and 2021 was affected by the pandemic. It must be taken into account that Covid prevention measures forced continued social distancing and continually ventilated spaces, which meant that not all of the staff returned to the office and thus certain consumptions were favourably affected by these measures. 2020 consumption savings and increases should not be compared to those of 2021, since they both were exceptions.



ELECTRIC POWER consumption (kWh) progress					
	2019	2020	2021	2022	2023
Spain	1,707,002	1,608,320	1,737,884	1,845,976	1,775,082
Peru	248,440	216,700	254,783	334,994	453,217
UAE	55,196	38,606	37,438	17,169	19,852
Saudi Arabia	-	-	-	49,688	33,956
Mexico	-	-	-	121,336	147,011
Sweden	-	-	-	-	4,893

The Guarantee of Origin Certificate issued by the Spanish National Commission on Markets and Competition (CNMC), confirms that the electricity supplied to the Group's offices in Spain comes from renewable energy sources. The origin of the electricity used by Group companies INTEMAC, MC2 and RAUROS is also certified as renewable.



PAPER consumption (kg) progress					
	2019	2020	2021	2022	2023
Spain	15,801	9,791	8,801	9,785	12,813
Peru	6,056	2,528	2,678	2,789	1,563
UAE	102	162	137	-	65
Saudi Arabia	-	-	-	32	30
Mexico	1,334	1,805	2,684	1,769	2,124
Sweden	-	-	-	7	7
United Kingdom	-	-	-	5	13
Australia	-	-	-	9	23



WATER consumption (m³) progress					
	2019	2020	2021	2022	2023
Spain	3,763	2,826	3,181	3,396	4,169
Peru	2,294	1,633	2,437	3,107	3,778
UAE	156	119	43	-	-
Saudi Arabia	-	-	-	1,294	-

**3.5 Innovation**

**A CORE MANAGEMENT VALUE:** we innovate today to enhance the efficiency, sustainability, and quality of our projects for a better tomorrow.



**Greater strategic approach in innovation and digitalisation**

TYP SA has been committed to innovation for three decades through its Software Development Department, and three years ago was joined by the TYP SA Digital Accelerator, a unit to support innovation and process digitalisation for both clients and the Group itself.

Improvements:

- Promotion and design of new digital business initiatives for task automation through the development of new digital products, especially in the civil engineering sector, as well as the creation of the Data Office to help create new products and services.
- Strong investment in information systems to ensure growth: The capacity of the communications network has been increased by 500% in addition to generating new tools for monitoring the entire network and the management of ICT assets.
- Improvements in the Information Security System with renewed certification according to ISO 27001. Update perimeter and agent security for remote connections. Deployment of encryption policies on removable and security storage devices.
- Precise project alignment with the three core innovation strategies, with the active involvement of the R&D management committee.



**STRATEGIC RESEARCH**

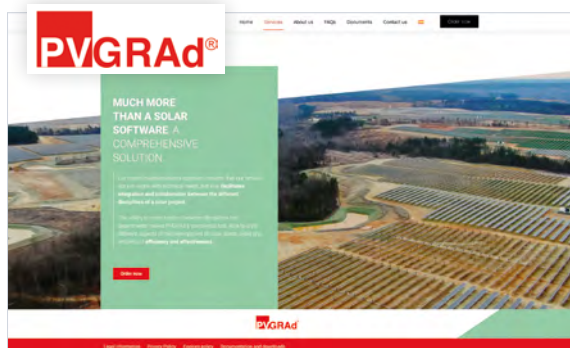
**Going digital and the collaborative working**

- **PCCMB-ATHENA:** tool for automatic quality audits in BIM and data models.
- **SERAPIS:** corporate repository for scripts, automations and other digital assets of the Group, incorporating the ENGESTATS solution, developed in Brazil by ENGEORPS for intellectual property protection and use monitoring.
- **ROSETTA:** innovative corporate platform of geo-referenced data aimed at enriching own and client projects.
- **BIG-TYP-AI:** artificial intelligence laboratory of the Group, focused on the combination of natural language models with information recovery systems and context generation.
- **DT-TYP SA, Digital Twins:** Incorporation of support tools for the digital twin of the corporate headquarters, integrating monitoring information of the different systems of the building thanks to the GOLID platform.
- **TYP SA-BIM-PM:** new impetus to the strategic tool to support supervision of works and projects. Important functionalities have been completed in the mobile application.



TYP SA-BIM-PM mobile application

### Sustainability of buildings, infrastructures, and cities



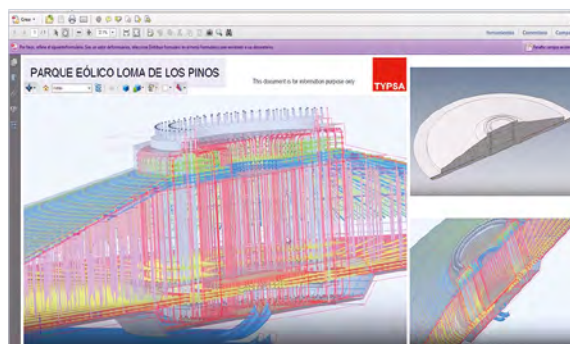
PVGRAd website

- **PVGRAdTM:** new generation of the TYP SA Group photovoltaic solar plants design programme. The climate change module developed through an R&D contract with the Universitat Politècnica de València has been completed.
- **Launch of PVGRAd website:** innovative business model by which various design optimisation services for photovoltaic solar plants will be offered and managed.
- **WLC. Whole Life Cycle:** delves into the tools for the analysis of sustainability variables throughout the entire infrastructure lifespan, focusing on the economy decarbonisation impact.

The Group takes a technological leap with the incorporation of Teknés Innovación, which brings great expertise in structural monitoring and geotechnical auscultation, along with advanced proprietary technology.

### Consulting, engineering and architectural excellence

- **ENHANCINGFRC:** optimisation of the design of fibre-reinforced concrete elements in tunnels and underground works. Project developed under an industrial doctoral agreement with the Uni-versitat Politècnica de Catalunya and with the support of the Laboratory of Structural and Material Technology of the Barcelona School of Civil Engineering.
- **MAESTRALE:** improvement and automation of wind generator structural design. Project completed with an update of the tools allowing automation of certain design processes.



MAESTRALE Programme

- **KSTIFF-WIND:** reaction coefficients for wind turbine foundations. New research in the field of geotechnical engineering focused on the parameters that define soil-structure interaction in wind turbines and the use of finite element models.
- **RAILSAFE:** new capabilities for the simulation of railway safety assessments. Following the incorporation of new tools and procedures, TYP SA has successfully completed the accreditation process with ENAC as an inspection body for safety in railway applications in the Control, Command and Signalling subsystem, in accordance with the criteria established in ISO/IEC 17020:2012.
- **GESTIONAVENIDAS:** Project focused on the operational phase of dams. A computer application has been generated which calculates, in real time, the hydrograph of the inflow to the reservoir. The application compares recorded rainfall with the design hydrograph and evaluates the outflow hydrograph through the dam's drainage structures based on the set of previously established operational strategies.

in real time, the hydrograph of the inflow to the reservoir. The application compares recorded rainfall with the design hydrograph and evaluates the outflow hydrograph through the dam's drainage structures based on the set of previously established operational strategies.

### INDUCED INNOVATION

We place strategic value on induced innovation, which we carry out to provide imaginative, cutting-edge technological solutions that meet the needs of our clients.

- **TYP SA-RL-23. HIGH SPEED BRAIN:** solving complex problems in high-speed railway infrastructure design. Technological innovations to face complex challenges related to treatment of the terrain; the structural calculation of viaducts, the design of large ventilation structures and shafts or the unique tunnel segments.
- **TYP SA-WP-SP-23. ROKUA:** engineering development for the construction of solar photovoltaic plants in very cold climates. Innovation related to geotechnical and hydrological aspects for the deployment of renewable energies in soft or contaminated soils, which present challenges for land-use planning.

## 6. Contribution to the SDGs

TYP SA contributes to Sustainable Development Goals (SDGs) through its policies and management systems, its business areas, and the TYP SA Foundation for Development. We are making progress towards the 2030 Agenda through knowledge and innovation, good business practices and social action inherent to a leading engineering firm, strengthened by the creation of partnerships to drive sustainability.

### Our SDG's and main targets



**SDG 4 - QUALITY EDUCATION**  
**SDG 17 - PARTNERSHIPS FOR THE GOALS**

### TARGETS WE ARE WORKING TOWARDS

- Target 4.3** By 2030 ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university.
- Target 4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- Target 17.17** Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships.

### OUR COMMITMENT

Promote technical education in developing countries.

### ACHIEVEMENTS

This year, the TYP SA Foundation for Development has continued to significantly promote the development of the Lago Alberto University (UNILAC) in the Democratic Republic of Congo. The main advances have been the following:

- Increase in the number of scholarships granted in the civil engineering and agronomy faculties.
- Construction of an administrative building to separate management and administrative activities from the classroom areas, resulting in more efficient management.
- Continuation of premiums for teachers residing in Mahagi to ensure their permanence in UNILAC and an increase in the level of teaching.
- European mobility programme of the Universidad Politécnica de Madrid (UPM) for students and teachers of UNILAC (Erasmus+).



Pablo Bueno and Luis Mª Navarro, president and managing director of the Foundation, during a visit to UNILAC

### INDICATOR TRENDS

UNILAC University, Mahagi (DRC)	2020-2021	2021-2022	2022-2023
Enrolled students	368	416	477
Scholarships awarded through the Foundation	163	225	213



## SDG 6 - CLEAN WATER AND SANITATION

### TARGETS WE ARE WORKING TOWARDS

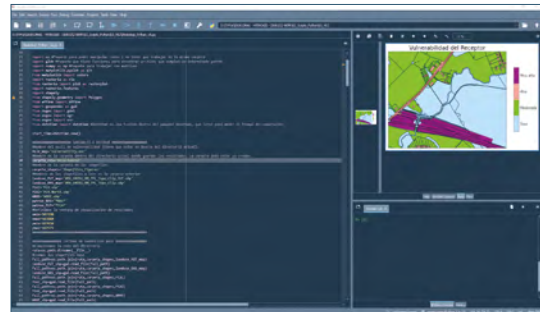
- Target 6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- Target 6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- Target 6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

### OUR COMMITMENT

Contribute to improving water availability, management and quality, as well as reducing the risks associated with extreme events in the countries in which we operate.

### ACHIEVEMENTS

TYPsa has continued its efforts in **the digitalisation of the water sector** to support public administrations in improving efficiency in the management and analysis of aspects related to the life cycle of water infrastructures.



HYDROGIS project

The most important technological commitment is in the expanded use of BIM and GIS tools, with focus on the open-source tools. This year, the HYDROGIS project has been developed, which has allowed the GIS tools to be adapted to a free software-based work environment. Additionally, the HYDRO-CFD Project has been launched to delve deeper into computational fluid dynamics tools. The IN-BIM-GIS project designed to take advantage of the great benefits offered by the combined use of both methodologies, has been completed and has subsequently led to the design and implementation of ROSETTA, a corporate geo-referenced database.



Puebla de Cazalla dam, Sevilla, Spain

In addition, capacities in the water sector are being strengthened, mainly in the **areas of digitisation and risk management**. TYPsa continues expanding technical capabilities in dam safety inspections and risk analysis methodologies, currently intervening in more than 300 dams in Spain. In this area, collaboration has been initiated with the Spanish Committee of Large Dams (SPANCOLD) to analyse the determinations on reservoirs contained in the documents of the third cycle of hydrological planning in the river basin authorities of Spain until 2027. New capabilities have also been incorporated for multicriteria assessment (environmental, social, economic) based on new tools for statistical analysis of extreme events. This contribution will allow administrations to implement urgent corrective measures through the fast track modality, dividing the actions by sections or prioritised sections depending on the risks they mitigate.

### INDICATOR TRENDS

Teams	2020	2021	2022	2023
People trained in BIM in the water sector	43	48	57	63
People specialised in the management of dam safety and breakage risk analysis projects	13	23	40	38



## SDG 7 - AFFORDABLE AND CLEAN ENERGY

### TARGETS WE ARE WORKING TOWARDS

- Target 7.2** By 2030, increase substantially the share of renewable energy in the global energy mix.

### OUR COMMITMENT

Back renewable and clean energy as energy generation business lines.

### ACHIEVEMENTS

The technological commitment to offshore wind energy production systems continues, delving deeper into the challenges of design and implementation of offshore wind farms. This includes both those in shallow waters as well as those that rely on floating platforms to support the wind turbines and their support pillars. As way of example, the great experience acquired in the European R&D project DemoGravi3 has been continued, with new methodologies to improve the design and marine operations through a pilot project on the coasts of Normandy (France).

In the field of **marine renewable energies**, new wave simulation capabilities are being acquired through the use of complex simulation tools. This year, a pilot project has been developed in the port of Valencia for the use of wave energy within the framework of the European R&D Matchup project. The concept belongs to the company Rotary Waves while TYPsa has overseen the design.

In addition, improvements are ongoing regarding the technological tools that play a role in the deployment of solar energy. Through collaboration with the Group company, AZTEC, the functionalities of the PVGRAd platform have been improved to optimise the design of photovoltaic solar plants, adding a simulation module that allows developers a more accurate evaluation of the returns on their investment.



Gecama wind farm, Cuenca, Spain



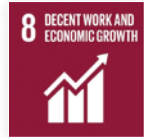
Bacon solar plant, USA



MATCHUP project for the port of Valencia, Spain

### INDICATOR TRENDS

Renewable energy activity	2021	2022	2023
Renewables innovation projects	10	7	7
Renewable energy we design and install (in MW)	21,757	44,195	48,503



**SDG 8 - DECENT WORK AND ECONOMIC GROWTH**

**TARGETS WE ARE WORKING TOWARDS**

- Target 8.2** Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labour-intensive sectors.
- Target 8.5** By 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
- Target 8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.
- Target 8.8** Protect labour rights and promote safe and secure working environments for all workers.

**OUR COMMITMENT**

Ensure respect for human rights, ethical business behaviour, integrity and equality, health and safety, diversity and inclusion in TYP SA and its supply chain.

**ACHIEVEMENTS**

TYP SA continues to make progress in the analysis, management and mitigation of risks associated with its activity and that of its subcontractors. In particular, the following improvements to its Management and Compliance Systems have been introduced:



Compliance with on-site safety regulations



- Review of the health and safety risk assessments in the company's places of work, and adoption of the corresponding prevention and control measures.
- Modification of the subcontracting and purchasing procedure to prioritise, whenever possible, the selection of those companies with a certified Occupational Health and Safety Management System according to ISO 45001.
- Assurance that contractual agreement models require subcontracted companies to comply with the legal requirements of each country regarding health and safety.

**INDICATOR TRENDS**

Follow-up on certifications	2021	2022	2023
Group companies certified to ISO 45001 standards	9	11	12



**SDG 9 - INDUSTRY, INNOVATION AND INFRASTRUCTURE**

**TARGETS WE ARE WORKING TOWARDS**

- Target 9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

**OUR COMMITMENT**

Foster innovation and digitalisation to improve the productivity, efficiency, security and sustainability of our services.

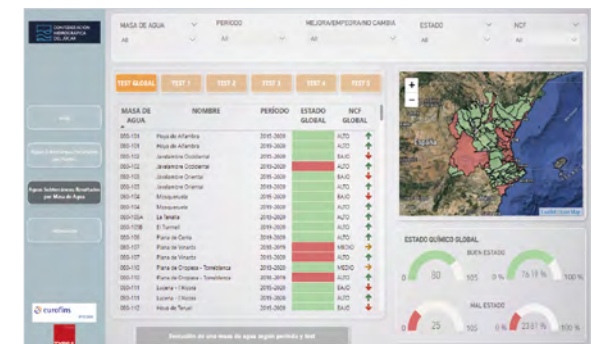
**ACHIEVEMENTS**

Throughout this year, TYP SA has consolidated and integrated the digitalisation of corporate and engineering processes globally, establishing a network of teams across international branches. Specialised teams have been created in the subsidiaries located in Saudi Arabia, Australia, Canada, the United States, the United Kingdom, and Sweden, and in 2024, these capabilities will be extended to branches in India, Mexico, and Peru.

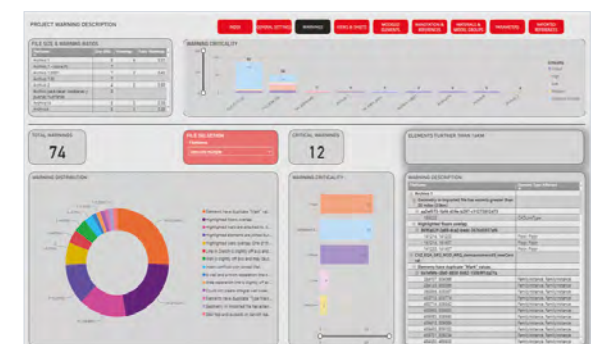
The mission of these digital teams is to implement and strengthen digital capabilities tailored to the specific needs and local contexts of each branch. Objectives also include disseminating technological advancements and use cases developed from the headquarters, fostering communication channels and collaboration between such central offices and these subsidiaries.

Furthermore, new initiatives have been undertaken to promote data governance and the integration of artificial intelligence tools to support informed decision-making. As part of these efforts, the Data Office has been established within the BIM Group, initiating various projects focused on establishing standards and processes for data capture, storage, use, and disposal.

Contributions to infrastructure digitalisation are achieved through the recruitment of local teams, ongoing training, application of new technologies, provision of digital tools, digital equipment and infrastructure (hardware, software, communications), collaboration procedures, and integration into a global network of experts with advanced digital knowledge and a collective project roadmap.



Monitoring programme for water control by the Júcar River Basin Authority



Atenea. Tool for mass extraction of information from models for BIM quality checks

**INDICATOR TRENDS**

Innovation projects	2020	2021	2022	2023
New R&D projects approved	13	17	16	13
Digitisation projects completed	-	23	47	139



## SDG 11 - SUSTAINABLE CITIES AND COMMUNITIES

### TARGETS WE ARE WORKING TOWARDS

- Target 11.2** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
- Target 11.3** By 2030 enhance inclusive and sustainable urbanization and capacities for participatory, integrated and sustainable human settlement planning and management in all countries.

### OUR COMMITMENT

Our services and capabilities contribute to making cities and settlements inclusive, safe, resilient and sustainable.

### ACHIEVEMENTS



Dome of the Palacio de Las Cortes, in Madrid

TYP SA continues highly committed to **improving accessibility to public buildings and stations**. In addition to having virtual reality applications that evaluate and audit accessibility conditions and evacuations in emergency situations, an application for both web and mobile interfaces is being designed with the aim of facilitating technical evaluations of accessibility.

Furthermore, the Group's company, INTEMAC, is **monitoring historic buildings in urban environments** to analyse the evolution of structural anomalies, such as the dome of the Palacio de Las Cortes in Madrid. In this case, a 3-D laser scan and hygrothermal parameter monitoring using wireless probes were conducted to study the effects of humidity and temperature on the movements of the dome. The information obtained was uploaded into the BIM model for a detailed study of the hemicycle dome, facilitating maintenance decision-making and the adoption of measures to ensure the building's functionality and safety.

Likewise, continued contribution to the deployment of Sustainable Urban Drainage Systems (SUDS), is provided through the Group company Green Blue Management (GBM). New specific design and calculation programmes have been incorporated and a GIS tool has been generated for the selection of optimal locations for SUDS implementation. Work has also been carried out with various municipalities in Spain to develop SUDS strategies and municipal technical guides.



Application of SUDS in urban environments

### INDICATOR TRENDS

Sustainable urban infrastructure improvement capabilities	2020	2021	2022	2023
Sustainable city and infrastructure R&D projects	14	16	17	17
People working exclusively on SUDS	6	7	8	8



## SDG 12 - RESPONSIBLE CONSUMPTION AND PRODUCTION

### TARGETS WE ARE WORKING TOWARDS

- Target 12.2** By 2030, achieve the sustainable management and efficient use of natural resources.
- Target 12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse.

### OUR COMMITMENT

Leverage our services and capabilities to help extend the useful life of built assets and encourage the use of resilient and low-emission building materials and techniques.

### ACHIEVEMENTS

As a practical application of digital twins in the optimisation of asset usage, TYP SA is applying sensorisation in the digital twin of its corporate headquarters. Through two innovation projects, the sensorisation of the building is being optimised to link it to a digital platform that allows decisions on energy efficiency, user comfort level, predictive maintenance, and consumption and waste management. Additionally, the efficient management and maintenance of the infrastructures is requiring more and more attention from the public authorities.

To meet this growing need, one of the Group companies, INTEMAC, has completed the acquisition of a majority stake in the company Teknés Innovación, S.L., bringing a **high level of expertise in instrumentation, and structural monitoring and surveying, through advanced in-house technology**. With this acquisition, the TYP SA Group takes a significant technological leap, incorporating new capabilities for the capture of data of structural and geotechnical behaviour together with plans to generate synergies, thanks to the combined efforts of specialists throughout the complete cycle of management and analysis of digital information regarding the state of buildings and infrastructures.



Digital Twin of TYP SA's office in Madrid



Monitoring the settlement of the Bolintxu viaduct

### INDICATOR TRENDS

Indicator	2021	2022	2023
Infrastructure damage analysis			
R&D projects in IoT and sensorisation	2	3	3
Number of monitored critical structures	10	10	40





**SDG 13 - CLIMATE ACTION**

**TARGETS WE ARE WORKING TOWARDS**

- Target 13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- Target 13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

**OUR COMMITMENT**

Incorporate climate change mitigation and adaptation into our infrastructure, energy and city planning, and design solutions.

**ACHIEVEMENTS**



Continuing with TYP SA's Sustainability Action Plan, in 2023, progress was made in integrating sustainability concepts across various disciplines within the TYP SA Group. The Sustainability and Environmental Assessment Division has been strengthened as the focal point for coordinating sustainability efforts within the Group. Specific working groups have been established by discipline to incorporate sustainability criteria into daily decision-making processes. New sustainability rating systems such as WELL, EDGE, MOSTADAM, and PARKSMART have been explored and integrated into new projects.

Certification processes for sustainability have been initiated for several assets with the aim of achieving the highest sustainability standards, such as LEED Platinum, WELL Platinum, or EDGE Advance.



The TYP SA Group has a Climate Change Section within the Sustainability and Environmental Assessment Division, providing cross-functional services to integrate the effects of climate change across the entire company. This includes efforts in mitigation and adaptation, aiming to develop projects with a reduced carbon footprint and incorporating adaptation measures to address major climate risks (evaluated based on IPCC scenarios) to achieve resilient infrastructure.

In addition to integrating climate change considerations into its own projects, the TYP SA Group also offers climate change consulting services to private clients worldwide, thereby supporting the achievement of SDG 13 on climate action.

**INDICATOR TRENDS**

Specialised technical training courses	2021	2022	2023
People with professional sustainability qualifications (Envision, LEED, Bream, etc.)	6	46	49



**SDG 16 - PEACE, JUSTICE AND STRONG INSTITUTIONS**

**TARGETS WE ARE WORKING TOWARDS**

- Target 16.5** Substantially reduce corruption and bribery in all its forms.

**OUR COMMITMENT**

Lead the way in integrity and the fight against corruption in the engineering and construction industry.

**ACHIEVEMENTS**

TYP SA's commitment to integrity and the fight against corruption continued to be reinforced in 2023 with the following actions:

- New Internal Information System Policy.
- New communication channel and new procedure for managing reported infractions across the entire Group.
- Inclusion of the Spanish subsidiaries and the branches in Peru, Chile and Panama into the conflict of interest control tool for high-risk staff.
- New automated tool for risk assessment in offers, including corruption risk.
- Improvement of operational procedures such as updating the due diligence form for associated companies in tender processes, enhancing confidentiality commitments, duty of secrecy, general obligations, and rules for media use; and adopting monitoring measures when a bid poses a high/very high corruption risk.



**INDICATOR TRENDS**

Average anti-corruption system self-assessment score (in % correct answers)	2020	2021	2022	2023
Assessment for directors	89.7%	90.1%	92.6%	93.0%
Assessment for staff	86.9%	90.6%	95.8%	88.6%

# 4 Featured activity

## Road design and construction supervision

In the **USA**, principally in Arizona, major detailed **designs** are being prepared for roads with heavy traffic. These include the upgrade of Sarival Avenue, between Yuma Rd. and Elwood St in Goodyear, where improvements are being made to the road and footpaths, drainage, signage and landscaping; the upgrade of Cotton Lane, between Estrella Parkway and Cotton Lane Bridge, also in Goodyear, with the widening northbound to a dual-carriageway and central reservation; and the expansion and improvement of SR303L, between Avenue 51 and I-17, in Phoenix, remodelling and upgrading to a full freeway configuration, together with the design of a new multi-level freeway interchange.



Improvement of SR303L Highway, Phoenix, Arizona

In **Panama**, we carried out the feasibility study, analysis of alternatives and tender management of the North David Corridor, in the province of Chiriquí. A 16km toll highway will be developed under the PPP scheme, as an alternative to the Pan-American Highway.

In **Chile**, we provided support services for tendering the Route 5 concession, section Santiago-Los Vilos, where 223 km of motorway will be improved; and for the Route 68 concession where the improvement and capacity expansion of the 140km long road, section Santiago-Valparaíso-Viña del Mar is planned.

“Roads represent the most significant need for transport infrastructure, in both developed and developing countries”

In **Saudi Arabia**, we participated in the design of road infrastructures of NEOM's urban megaproject. These include the conceptual design of the Al Farshah Island connection with The Line, through a road and multimodal transport superhub; the conceptual design of the temporary access road from Highway 55 to The Cube region in the Gulf of Aqaba, including junctions with Highway 55 and the Coastal Road; the detailed design of the access roads extension from Highway 55 to one of the NEOM management areas; and the design to improve road safety on Military Road, through Trojena mountains.

In **Spain**, we carried out the preliminary and detailed design for the widening of the AP-7 motorway in Barcelona, over a 24 km section between the Martorell and the Vilafranca Centre junctions; for the intersection remodelling between the AP-7 and the A-7 motorways in Torreguadiaro, Cádiz; and for the Fuenmayor bypass, on the N-232 road, in La Rioja.



Widening of the AP -7 motorway, Barcelona

In the area of road **supervision**, in **Norway**, we are carrying out the quality inspection of structures and the main road, part of the project to connect the island of Sotra with Bergen, with a new 9.4 km stretch, 24 km of access roads, a 900 m suspension bridge, 22 bridges and viaducts, and four twin-tube tunnels; in **Paraguay**, we led the construction supervision of Route PY21 road surface and maintenance works, covering a 33 km stretch connecting Route PY7 with Puerto Indio on the River Parana; in **Guatemala**, the rehabilitation of 40 km on the Escuintla-Puerto Quetzal highway; and in **Tanzania**, the design review and construction supervision of the upgrade works of the 92 km Lusahunga-Rusumo highway in the central corridor of the country.

In addition, TYPASA provides **support to the institutions** participating in programmes for the expansion, conservation and updating of transport networks, and in the adaptation and rehabilitation of such infrastructures.

In **Paraguay**, TYPASA is in charge of implementation management of an upgrade and maintenance programme for paved routes, encompassing various interventions along a 146 km stretch, contracted based on service levels, with funding from the Development Bank of Latin America.



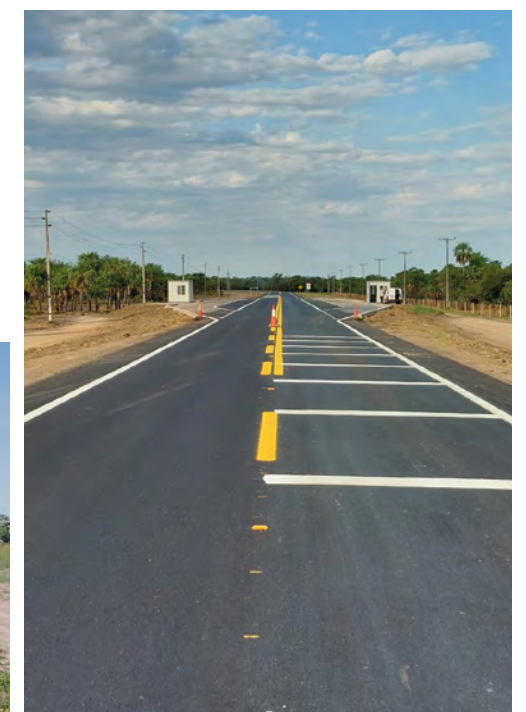
Paving and maintenance works on roads in Paraguay



Rehabilitation of the road from Lusahunga to Rusumo in Tanzania



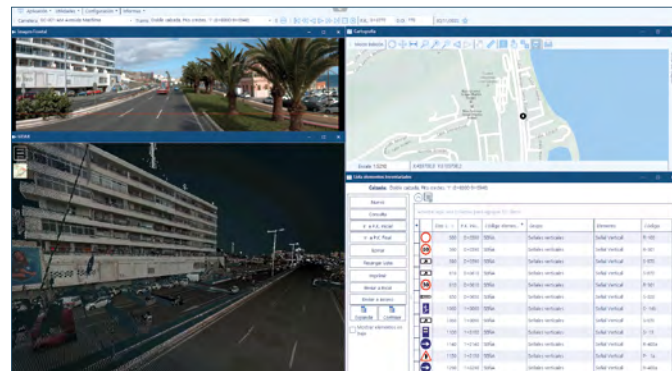
Route 21, Paraguay



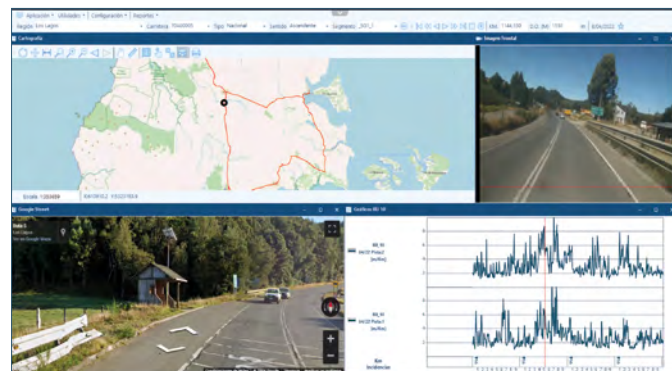
In the **Republic of Chad**, support services are being provided for the management of construction contracts and supervision of the rehabilitation and maintenance of the 579 km N'Djamena-Moundou-Koutéré road corridor, including resettlement action plans, environmental management, and strengthening the technical skills of the beneficiary. Funding is provided by the European Investment Bank.

## Operation and maintenance management

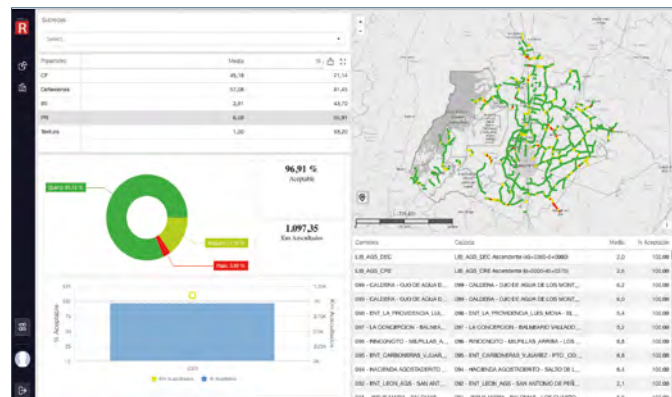
The TYP SA Group, through its specialised subsidiaries, is an expert in road and airport pavement condition survey techniques, and in the development of expert management systems, based primarily on its knowledge of the testing methods and on two systems developed in-house: ÍCARO, for road networks and DÉDALO for airport pavements.



ÍCARO management system, applied to roads in Gran Canaria, Spain



ÍCARO management system, applied to roads in Chile



ÍCARO management system, applied to highways in Mexico

In **Mexico**, the management of the road network information system of the state of Aguascalientes is being carried out with the implementation of the ÍCARO system on a 1,200 km stretch. The evaluation is also ongoing of the road surface of seven highways in the Pacific area which serve the states of Jalisco, Nayarit and Sinaloa, and includes the Guadalajara, Culiacán and Mazatlan ring roads, amounting to over 2,000 km of highway. The results will be incorporated into the ÍCARO management system already implemented on these highways.

Road asset management and maintenance systems are being deployed for national and local networks in several countries, such as the 18,000 km National Road Network of **Chile**, where a new information system is replacing those currently used; or the 700 km long urban network of the city of Ibarra, in **Ecuador**, where a training programme covering routine road maintenance has also been established for micro-enterprises. In **Brazil**, the ÍCARO pavement management system is being implemented in 7 road concessions, with a total of 4,000 km of asphalt and concrete surfaces.

In **Spain**, participation continues in the pavement condition survey programme for the 15,000 km National Road Network, obtaining the surface characteristics of the pavement which are incorporated into the ÍCARO-WEB management system.

This system is also being incorporated to manage the Gran Canaria networks, made up of 1,500 km and 289 slip roads, as well as the 1,650 km La Rioja network. In these networks, data collection is carried out with high performance multifunction equipment and mobile mapping survey equipment, customising the application for mobile devices through business intelligence, and also providing system training and maintenance. Several sections of the ABERTIS concessions, covering a length of 1,100 km and 93 links, also use these methods.

“ The extension of infrastructure lifespan, through proper conservation and maintenance management, must be a priority in budget allocation ”

## Sustainable mobility

Policies and strategies aimed at achieving sustainable urban mobility, providing citizens access to clean, energy efficient public transport optimised by the use of technology, have the support and participation of the companies of the TYP SA Group.

In **Türkiye**, we are preparing the Sustainable Urban Mobility Plan in the city of Trabzon, which includes the diagnosis of the current situation, the analysis of alternatives and an action plan to guarantee the technical, economic, environmental and social sustainability of the city which has 800,000 inhabitants. We are also planning and developing a series of intermodal corridors to transfer freight from road to rail, favouring and encouraging intermodality.

In **Serbia**, the analysis and diagnosis of the transport sector, the development of the model to follow and the elaboration of proposals in the field of infrastructures and services within a sustainability framework have been carried out.

In **Ireland**, we have carried out the preliminary design for the implementation of the new bus corridors and active travel in the city of Cork, integrating 18 km of bus lanes and cycle tracks, along three corridors in the metropolitan area of the city.

In **Spain**, we have carried out the detailed design of the Bus-HOV lane on the A-8057 road to Seville, which allows direct access to the SE-30 from Mairena del Aljarafe and San Juan de Aznalfarache, on a highly congested stretch; in Bilbao, we have signed a framework agreement with the city council for the provision of support services in municipal mobility infrastructures.

We led the construction management of the Electric Mobility Centre expansion in Vitoria-Gasteiz with double slow-charging pantograph chargers for electric buses; and construction supervision of the works on the pedestrian and cycle bridge over the Bilbao estuary, between Barakaldo and Erandio, which opens to allow large boats through, and with the extension of the Altxaga park.

In Galicia, we were also involved in the environmental and archaeological supervision and monitoring for sustainable mobility axis works in Santiago de Compostela, which includes pedestrian paths and cycle tracks along the roadside, to promote non-motorised travel; and the same tasks for the improvement of bus stops in the Autonomous Road Network of Galicia, to improve accessibility and connectivity.

We carried out construction supervision of road crossing adaptation works in Alcañiz and Teruel by extending sidewalks, implementing cycle paths and pedestrian walkways; and the construction management and supervision of the works of the footbridge over the V-21 motorway, in Pobla de Farnals, for cycling and pedestrian use, connected to the network of non-motorised routes of Valencia.



Bus corridors in Cork, Ireland



Pedestrian and cycle bridge over the Bilbao estuary, Spain

## Strategic infrastructure consulting

Advising governments, developers and financiers in decision-making for projects involving large-scale financing operations, long-term contracts and schemes with private sector participation, is increasingly becoming a central activity for the group's companies.

In Europe, TYP SA is responsible for the preparation of the public-private partnership (PPP) project for the Trubarevo Multimodal Terminal in **North Macedonia**, involving market analysis, strategic study of alternatives, feasibility study, PPP structuring and preparation of tender documents. In **Greece**, TYP SA is structuring the PPP project for educational centres and sports facilities in Kozani. The project is part of the European Bank for Reconstruction and Development (EBRD) PPP framework programme.

“ Decision-making advisory services to governments, promoters and funders in public-private partnership projects ”

In the **USA**, we are providing advisory services during the bidding process for the PPP dynamic toll lanes contract on the SR 400 Highway, in Atlanta, Georgia, which will be managed under an availability payment model.



Kozani, Greece



Road rehabilitation in Madagascar



SR 400 Highway in Atlanta, Georgia

In Central America, we have carried out the economic and social study of the contribution of **Belize's** port activity to the economy of the country, analysing the current state and capacity of the infrastructures of the four main ports, growth projections and proposal of necessary expansions, as well as an action plan for the modernisation of the Port Authority. In **Panama**, we have performed the technical due diligence for the financing and monitoring of contractual compliance during the construction of the new Costa Verde Hospital, in the district of La Chorrera, province of Panama West, which includes a hospital, medical offices and a technical health training building. In **Guatemala**, the same services are provided for the financing of the new San Cristobal educational complex, in Mixco, Guatemala City, composed of a university and a sports campus suitable for Olympic competitions.

In Africa, we provide support services in the selection and tendering of road rehabilitation and maintenance contracts in **Madagascar**, covering a 1,000 km network to be tendered under the MROR results-oriented contract modality.

## Infrastructure conservation and emergency actions

The companies of the TYP SA Group provide support to the different institutions in resolving and repairing incidents related to the operation of transport infrastructures, in the risk assessment of possible future incidents, addressing road safety issues, and conducting repair and maintenance activities.

In **Spain**, we have carried out the structural review, implementation and monitoring of the reinforcement of the Caballar viaduct, Almería; the design and construction supervision of the repair works for three structures with serious damage requiring emergency measures, on the A-4 motorway, in Córdoba; the design and construction supervision of emergency repair and replacement of the road restraint system of the Vichocuntín viaduct on the River

Lérez in Pontevedra; specialised advisory services during the emergency works as a result of the collapse of the Castro viaducts, on the A-6 motorway, León; and the construction supervision and management of the repairs of the damage caused by the meteorological phenomenon DANA (isolated low-pressure system at high altitudes) on several roads in the southwest area of the Community of Madrid.

In addition, TYP SA is carrying out the construction supervision of the works to upgrade 10 coastal highway tunnels in the province of Granada, in compliance with the tunnel safety regulations. Actions include ventilation systems, electrical network, security and emergency, closed circuit television, signage, and the automatic incident detection system. Structural monitoring and inspections of bridges is also being carried out in the east-northwest area of the railway network administered by ADIF.

The Basque railway network is undergoing the review and risk management of the tunnels for the implementation a new inspection and classification methodology, and the drafting of detailed design for the rehabilitation of the worst areas.

The integrated assessment and classification of geotechnical risks has also been carried out on the Gipuzkoa Provincial Council road network, defining necessary mitigation, reduction or elimination measures; and the inspection of transit works on motorways and roads in the province of Gipuzkoa, which includes 248 viaducts and structural works on the AP-8 and AP-1 motorways and on the GI-20 and A-636 highways.

In Bizkaia, TYP SA is supervising the actions included within the Road Safety Improvement and Modernisation Programme, carried out by the Provincial Council; and, in Aragón, leads the construction supervision of the road safety improvement works on the A-2506 road, in Calatayud, which involve layout upgrade and pavement reinforcement.

In **Portugal**, upgrade projects for roads EN374 and EN374-2 in the Lisbon district are being carried out with a view to improving road safety conditions and ensuring service levels; the rehabilitation of the EN-395 road in Albufeira, Faro district, to improve road safety and traffic conditions; the stabilisation of embankments on the EN248 road in Arruda dos Vinhos, Lisbon district; and of the ER338 road, Sierra de la Estrella, in the districts of Guarda and Castelo Branco.

The inspection of geotechnical structures in the national railway network is being carried out, with over a thousand containment, drainage, embankments and water crossings inspected.



Collapse of Spans 1 and 3 of the Castro viaduct, direction A Coruña, Spain



Reinforcement works on the Caballar viaduct. Almería, Spain

## Rail design and construction supervision

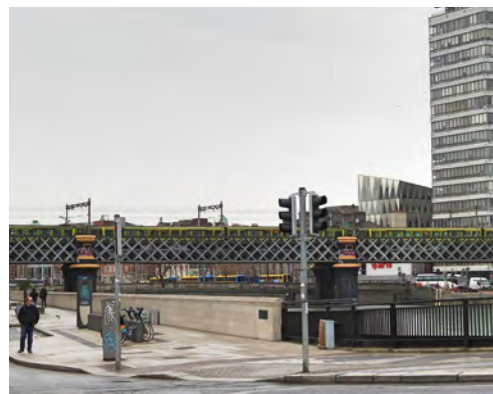
In Europe, TYP SA continues to play an outstanding role in the development of the HS2 high-speed project, which will link London with the main cities in the north-west of the **United Kingdom** and will connect the country with the continent. Following participation in the tunnel sections leaving London, TYP SA is working on sections between London and Birmingham, providing design and construction engineering support services, as well as with environmental procedures.

In **Ireland**, we have drafted the DART+South West Line Project of the Dublin commuter network which, following government approval, is in the process of obtaining final approval from the relevant authorities. Work is expected to begin in 2025 for the construction of 20 km of electrified track serving the suburban area of Dublin.

In **Norway**, after successful completion of the Drammen-Kobbervikdalen section of intercity Oslo-Tønsberg, where TYP SA has carried out the preliminary design, the review of the detailed design and construction supervision of the works, collaboration is now underway with the Norwegian rail network authorities on the works at Moss station, part of the Sandbukta-Moss- Sâstad project.

In **Portugal**, we are participating in the design to quadruple Lisbon's ring railway line between Roma/Areeiro and Braço de Prata, and to modernise the North Line between Braço de Prata and Sacavém, and between Ovar, Espinho and Gaia.

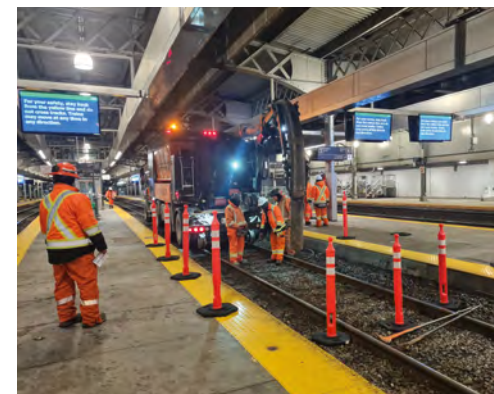
In **Brazil**, we are reviewing and assessing various designs for rail yards and an urban viaduct, in the Metropolitan Region of Baixada Santista.



Dart+ South West Line, Ireland



Integration of high-speed rail in the city of Valencia, Spain



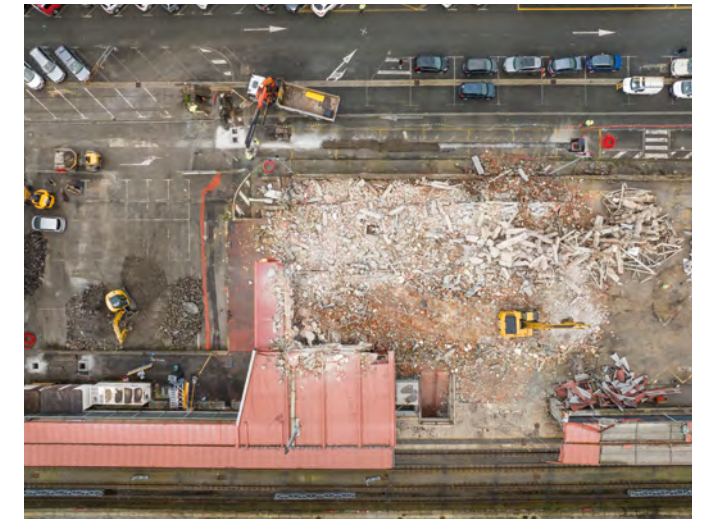
Union Station. Toronto, Canada



Intersection of the Piñerías-Pancorbo high-speed railway line with the N-1, Spain



Tabora - Kigoma railway line, Tanzania



Construction supervision of the new passenger building at Irún station, Spain

In **Spain**, we are drafting the preliminary and detailed design for the 23 km Piñerías-Pancorbo high-speed stretch, which is part of the connection between Burgos and Vitoria-Gasteiz; the preliminary study of the rehabilitation of the Migjorn railway line, in Mallorca, which connects the city of Palma with the towns of Lluçmajor and Campos; the design of the traction substations and associated autotransformation centres for the electrification of the Teruel-Sagunto railway line, in the Cantabrian-Mediterranean corridor; and the preliminary design of a mobile railway bridge for access to the Port of Seville container terminal and rail yard.

In the field of railway construction supervision, we are carrying out the integration of high-speed railway infrastructure in Valencia, a fundamental milestone in the development of the Mediterranean Corridor, taking the railway accesses to the Joaquín Sorolla and Valencia Nord stations; and construction supervision of the works of the intermodal and logistics terminal of Valencia-Fuente San Luis.

In the Basque Country, we are supervising the Altzola railway bypass works on the Bilbao-Donostia line, involving a double-track tunnel; as well as the new railway station at Usurbil, Gipuzkoa, with a new building over the tracks; and the new passenger building at Irún station, Gipuzkoa, also built over the existing tracks.

Other supervisory activities include the comprehensive renovation of the section between Guillarei station, Pontevedra, and the Portuguese border; and that of the new railway viaduct over the River Ebro on the 700 m long high-speed section between Castejón and the Pamplona Region, with pre-stressed concrete box girders, constructed using a combination of in situ methods and successive cantilevers.

In **Canada**, specialised advice is being provided in relation to the reinforcement of the railway slab in Union Station, Toronto. The slab, almost a century old, supports the current commuter and freight rail traffic, and a dynamic study has been carried out that will allow adaptations to future traffic, increasing the speed of trains and the level of service of the city's commuter network, the most congested in the country.

In **India**, TYP SA has successfully completed the detailed design for the Digra-Palshi section on the Yavatmal-Nanded line in Maharashtra State and is about to begin construction supervision and management of the works on the 68 km infrastructure and superstructure of the section.

In Africa, we are carrying out the design review, construction supervision and project management of the works on the railway line from Tabora to Kigoma, in **Tanzania**. The section is 506 km long, with standard width electrified track, and will be constructed in the design-build modality.



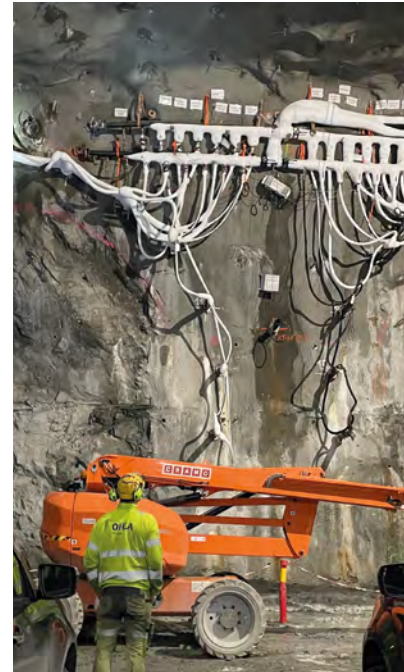
Works for HS2 High-speed railway in the United Kingdom

“ Extensive experience in large-scale intercity high-speed rail connections and commuter rail networks ”

## Metropolitan systems

In **Sweden**, TYP SA continues to provide support services on the extension of the Stockholm Metro Blue Line and this year has begun construction management and supervision of the works of the 11 km stretch from Kunstragården to Nacka and Söderort, with 7 new stations, including mechanical and electrical installations, and complete railway systems. TYP SA is also designing the ventilation and fire safety systems on the Akalla-Barkabay section.

In **Mexico**, contracted as independent engineer, TYP SA will review the detailed design and compliance of the concessionaire's and contractors' obligations of the suburban railway expansion of 23 km of electrified double track with 5 stations, between Lechería Station and Felipe Ángeles International Airport, in the state of Mexico. We are also supervising the detailed design, execution of the works, equipment and commissioning of Line 4 of the metropolitan area of Guadalajara, state of Jalisco, with a length of 21 km and 8 stations.



Metro works in Stockholm, Sweden



Metro works in Toronto, Canada

In **Australia**, after completing the detailed design for the tunnelled central section of the Sydney Metro West Line, we now continue support services for the tunnel works and the five-station excavation sites on the 11 km long twin tube section between The Bays and Sydney Olympic Park.

In the **United Arab Emirates**, we are carrying out the design review and update for the 10 km long light rail Line 1 project in Abu Dhabi, including the review of LRT technology, updating the preliminary design and preparing documents for the tender.



Metropolitan train of São Paulo, Brazil

In the **Dominican Republic**, engineering and environmental consulting continues for the detailed design of Santo Domingo Metro Line 2C. This 7.3 km extension will run for 6.4 km on viaduct and 0.9 km underground and will have 5 stations.

In **Brazil**, we have drafted the preliminary design for the duplication of the Metropolitan Train Line 7 - Ruby in São Paulo, the 56 km stretch between the stations of Barra Funda and Jundiaí divides to separate freight traffic from that of passengers.

In **India**, TYP SA leads the consortium for the general consultancy of the comprehensive detailed design and construction management of the metro networks of the cities of Kanpur, with two lines, 32 km and 30 stations; and Agra, with two lines, 29 km and 27 stations. In the latter, the first 7 km long stretch between Jama Masjid and Taj East Gate has recently been successfully inaugurated with 6 stations, 3 underground and 3 elevated.



First section of the Agra metro network, India



Barcelona metro line 8, Spain

In **Canada**, we are carrying out the detailed design for the tunnels in the Eglinton Crosstown West extension in Toronto, with a 6.3 km twin tunnel, including the tunnel boring machine launch and extraction shafts, the cross passages between tunnels and the headwalls for future stations and emergency evacuation buildings.



First section of the Agra metro network, India

In **Spain**, TYP SA is carrying out the construction management and supervision of the extension of the Madrid Metro Line 11 between Plaza Elíptica and Conde de Casal, passing under the M-30 and the River Manzanares, with two new stations and three stations interconnecting with Metro Lines 1, 3 and 6, and with suburban railway and AVE high-speed train tracks; the construction management and supervision of the Barcelona Metro Line 8 extension, between the stations Plaça d'Espanya and Gràcia, carried out with an EPB tunnelling machine and with three new stations excavated in deep caverns, including the inspection of possible damage to nearby homes; at the Gràcia station, which acts as an interchange with the Vallés Line, we are carrying out the architectural and MEP design; and on the Bilbao metro, construction supervision of the works on Line 5, Galdakao-Hospital section, including the execution of the Hospital station and its three access ramps and three lines under the River Nervión.

We also carry out the construction management and supervision of the renovation of the signage and automatic train protection systems on the single-track sections of Lines 1 and 2 of the Metrovalencia network; and the comprehensive project and construction management of the completion of the tramway system to Alcalá de Guadaíra, in Seville, including railway systems, electrification, architecture and MEP systems, workshops and garages, manufacturing and supply of mobile equipment, and supervision of the commissioning.

“Improving inner-city mobility with our expertise in designing and executing extensive tunnel projects”

## Airport expansion and modernisation

The expansion of airport infrastructure in **Saudi Arabia** is undergoing significant developments and TYP SA is playing an important role in such progress. King Khalid International Airport in Riyadh one of the largest in the world, is currently experiencing substantial expansion efforts aimed at reaching a capacity of 70 million passengers per year. TYP SA continues to support Riyadh Airports Company in the preparation of analysis, preliminary and detailed design, and providing tender support services for both the modernization of terminal buildings, and the expansion of airfields. Additionally, the contract for updating the master plans for King Fahd International Airport in Dammam, Al Ahsa Airport in Al Hofuf and Al Qaisumah Airport in Hafar Al Batin is in progress.



Infographics of possible options at King Khalid International Airport in Saudi Arabia

In **Brazil**, the planning and growth strategy for Congonhas Airport in São Paulo, is being developed, focusing on the investments necessary to reach 30 million passengers per year. Comprehensive project management for the expansion and improvement of 11 airport complexes across the states of São Paulo, Mato Grosso do Sul, Pará and Minas Gerais is being carried out. This five includes the development of the terms of reference for the contracts, design review, project management and construction supervision.



Ensenada Airport Project, Baja California, Mexico

In **Chile**, designs for improvement and modernisation of several existing airports are under way. These projects include updating passenger terminals and control towers, improving runways and taxiways, and developing surrounding areas. Notable projects include Mataverí Airport on Easter Island, La Florida Airport in La Serena, Coquimbo region, El Tepual Airport in Puerto Montt, Los Lagos region, and Pucon Airport in the Araucanía region. Plans for investment in new buildings and improved access at Pucon Airport are also anticipated in preparation for an upcoming concession.



San Miguel de Allende Airport Project, Guanajuato, Mexico

## Port engineering diversity

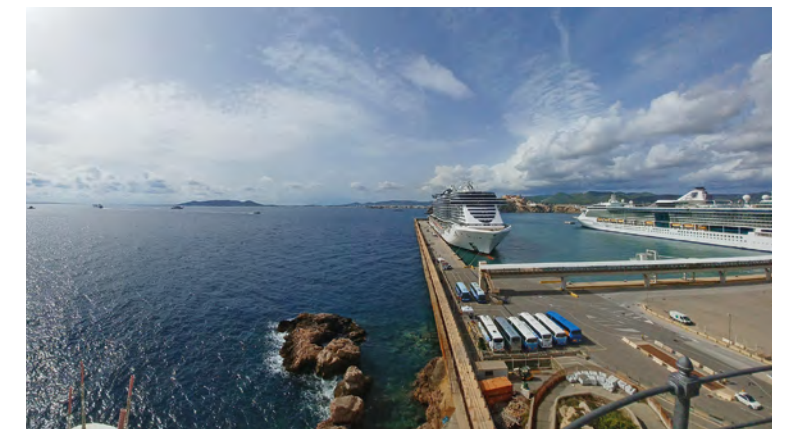
Port activity is a central part of the Group companies' activities, particularly in the areas of planning, design and construction supervision, as well as in the study of the impact on the natural, economic and social environment.

In **Panama**, TYP SA is carrying out the comprehensive project and construction management of the New Customs Pier at the Armuelles Port, in the Chiriquí province, which includes the main operating platform, a platform for artisanal fishing, a floating dock, berthing and mooring works, and the corresponding access, construction and development works.

“Innovating development, modernisation and capacity increase of port facilities for the transport of goods and artisanal activities”



Extension of Nueva Palmira port bulk terminal, Uruguay



Botafoc Dock, port of Ibiza, Spain

In **Uruguay**, the construction supervision of the expansion works at the Nueva Palmira port terminal is underway. The terminal is used by barges for the operation of liquid bulk cargo. The mineral operation facilities will also be expanded.

In **Brazil**, engineering services for maintenance and improvement works are ongoing on the breakwater pier of reinforced concrete caissons in the Port of Açu, state of Rio de Janeiro.



Port of Açu, Rio de Janeiro, Brazil

In **Belize**, an analysis of the current state and infrastructure capacity of the four main ports has been carried out, with a view to assessing growth potential and to propose infrastructure expansion, as well as an action plan for the modernisation of the Port Authority.

In **Angola**, a study has been prepared that includes the development and improvement of the marine and land elements of a new multipurpose terminal in the port of Luanda, as part of the environmental and social management plan for the construction and operation phases, analysing vulnerability and adaptation to climate change.

In **Spain**, activity is mainly focused on supervising rehabilitation and reinforcement works of existing port facilities, such as the rehabilitation of the protection elements of the Botafoc dock's foundation, 515 m long and 20 m deep, in the port of Ibiza; and the breakwater reinforcement at the Port of Ondárroa, 372 m long, heightening the back wall with high density concrete blocks.

## Design, operation and maintenance of dams

Both the design and the activities related to the operation and maintenance of dams for supply, irrigation, mining or hydropower, are a tradition for the companies of the TYP SA Group.

In the **Dominican Republic**, we are carrying out the detailed design review, for Las Placetas hydroelectric project; the design comprises three dams, a transfer tunnel between two of them, two headrace tunnels and two power houses, with a total installed capacity of 89.2 MW, and the construction supervision of 120 km of access roads and highways.

“ Dam maintenance, conservation and operation for supply and irrigation, and new projects for hydroelectric production ”



La Fuensanta Reservoir. Albacete, Spain



Las Portas Dam. Orense, Spain



Taibilla canal intake dam Albacete, Spain

In **Brasil**, construction supervision and complementary studies are being provided for the heightening of the Itabiruçu dam, in Itabira, state of Minas Gerais. The 80 m high earthfill dam is used for the storage of mineral washing waste from the Conceição Mine.

In **Chile** we have carried out the feasibility study and the preliminary design of the La Chupalla dam, in the Valparaiso region. The 132 m high, concrete face rockfill dam has a volume of 56 hm<sup>3</sup>, a lateral spillway and a 3 m diameter diversion



Reservoir in the Guadalete-Barbate basin, Spain

tunnel. With this reservoir, the Government of Chile intends to address the drought that has affected the region for years, thus a relevant infrastructure to safeguard national irrigation.

In **Spain**, we are involved in the maintenance and operation of the dams Ojos, Mayes, Algeciras, Crevillente and Pedrera for the Tajo-Segura inter-basin water transfer, in Alicante and Murcia; in the infrastructure for the adduction, pumping, transport and distribution of untreated water in the Guadalete-Barbate River Basin District, Cadiz, consisting of 8 dams, a transfer tunnel and two hydroelectric power plants; in the Plandescún dam and reservoir in Huesca which regulates the waters of the River Cinqueta for hydroelectric use; in the reservoirs of La Fuensanta, Cenajo, Talave and Camarillas, in Albacete and Murcia; for the regulation of the water from the Tajo-Segura transfer and in the Segura River Basin District the risk governance management of 32 dams and of 27 dams in the Duero River Basin District.

The design for the upgrade of the bottom outlet of the Taibilla Canal, in Albacete, has been prepared to restore discharge and regulatory functions, with a view to maintaining the ecological flow of the Taibilla River, and engineering services for the hydroelectric uses of Iberdrola Generación, in the northern area of the company's activity.

## Water treatment and purification

In **Saudi Arabia**, as part of the programme led by Saudi Water Partnership Company to ensure the supply of drinking water and the treatment of wastewater throughout the country, TYP SA has completed the supervision of the implementation of the Jubail 3A **desalination plant**, with a capacity of 600,000 m<sup>3</sup>/day, and continues at other desalination plants, built under the PPP scheme, such as those of Jubail 3B and Yanbu 4, with reverse osmosis technology. In 2023, construction supervision began at the Shuaibah 3 desalination plant, located on the Red Sea coast, also under a PPP scheme, with the same technology and a production capacity of 600,000 m<sup>3</sup>/day.



Yanbu 4 desalination plant, Saudi Arabia



Works at the Shuaibah3 desalination plant, Saudi Arabia



Los Alcázares wastewater treatment plant. Murcia, Spain



Madinah-3 wastewater treatment plant, Saudi Arabia

In the **United Arab Emirates**, the preliminary and detailed design of the electrical installations is being carried out at the desalination plant of Shuweihat Island, Abu Dhabi. The seawater plant uses reverse osmosis with a production capacity of 320,000 m<sup>3</sup>/day.

In **Spain**, we supervised the repair works of the desalination plant in Bajo Almanzora, Almería. The plant uses reverse osmosis technology, has a production capacity of 45,000 m<sup>3</sup>/day, and was temporarily decommissioned due to flooding in the San Wenceslas flood in September 2012; and we carried out the detailed design for filter system remodelling at the Llobregat drinking water treatment plant, in Abrera, Barcelona.

“ Advanced technology in high-capacity water treatment, desalination and purification projects ”

With regard to **wastewater treatment plants**, in **Brazil**, the detailed design for the expansion and improvement of the wastewater treatment plant in Pavuna, Rio de Janeiro, is being carried out, to achieve an average flow rate of 2,580 l/s and a maximum flow rate of 4,500 l/s.

In **Saudi Arabia**, we are supervising the Madinah-3, Tabuk-2 and Buraydah-2 wastewater treatment plants with capacities of 200,000, 90,000, and 150,000 m<sup>3</sup>/day respectively, with continuous Sequencing Batch Reactor (SBR) technology, and use of cogeneration and solar energy to reduce energy consumption.

In **Spain**, we have carried out the design for the wastewater treatment plant expansion in Callosa de Segura, Alicante, by adding a new line increasing capacity to 12,000 m<sup>3</sup>/d, and providing tertiary treatment; the construction supervision of the adaptation and improvement works of the wastewater treatment plants of Los Alcázares and San Javier, in Murcia, providing tertiary treatment for its entire capacity; and the design to improve the current treatment plant; and the preliminary design of a new treatment plant on the Goiaín industrial estate, in Legutio, Álava, due to increased flows to be treated from the industrial estate and neighbouring urban areas.



## Supply, sanitation and drainage

In **Peru**, TYPSA is carrying out the evaluation of alternatives and the detailed design of the urban storm drainage of the city of Paíta, Piura department, and Chiclayo, Lambayeque department, implementing sustainable drainage measures, both structural and for green infrastructure, to cope with the floods caused by the heavy rainfall from the “El Niño” climate phenomenon, affecting 450,000 inhabitants.

In **Panama**, we are carrying out the project and construction management of Arraiján Este’s sanitary sewer system,

in the province of Panama West, including the collector system, mains and home network connections, as well as a wastewater treatment plant for 85,000 inhabitants.

In **Saudi Arabia**, we carried out the detailed design for a drinking water supply line for touristic development in the Trojena region, north of NEOM, with a length of 45 km, ending in a 60,000 m<sup>3</sup> tank.

In **Brazil**, we are providing support services for management and construction supervision for water supply and sanitation in the state of São Paulo. New construction and rehabilitation works are being carried out in 37 municipalities in the São Paulo metropolitan area; and the design-build of the Transparaíba-Cariri Branch water supply system, Paraíba state, to supply water to 20 towns through the construction of a 375 km pipeline network and a treatment plant.

In **Spain**, we are carrying out designs and construction supervision for expansion and improvement works of the supply and sanitation systems, in Los Alcázares, Cieza and Caravaca de la Cruz, in Murcia, Sot de Ferrer and Soneja, in Castellón, and in several areas of the Community of Madrid, Spain, as well as the study of solutions and the development of a management model for the evacuation of rainwater in the urban areas of the Vega Baja del Segura, Alicante.

Our participation is key in the development of the Sustainable Urban Drainage Techniques, in Madrid, applied in a pilot plant located in the wastewater treatment plant of Mecó, in the new Fuenlabrada Exhibition Centre (“Parque Ferial”), and in the Madrid Nuevo Norte project.



Pluvial floods in the city of Paíta, Peru



Construction of the wastewater treatment plant in Arraiján Este, Panama

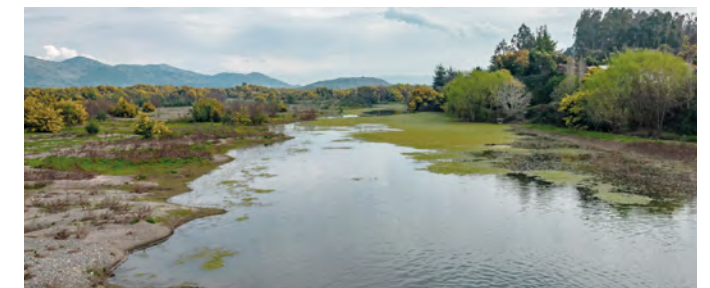
## Water engineering and management

In **Brazil**, the structuring of the Public-Private Partnership (PPP) for the untreated water adduction service of the São Francisco River Integration Project with the Northeast Watersheds is under way, with the aim of safeguarding water supply for the northeastern semi-arid region, which includes parts of eight states of the country; and assistance is being provided in developing the water resources rights concession framework in the state of Paraíba, with a view to increasing efficiency of its implementation by the governing body of the state water resources policy.

In **Chile**, diagnosis of the hydrometric network together with the hydrological and hydraulic studies are being carried out to determine flood maps and warning thresholds in the Matalquito River Basin, Maule Region, as a planning tool to face with extreme rainfall situations. In **Peru**, we are supervising flood defence works on the Cañete and Huaura Rivers, with the construction of 52 km of dikes and the channelling of four streams; and in **El Salvador**, the detailed design for the reconstruction of the underground channelling of the River Arenal de Montserrat, using a 600 m long vault cross-section.

In **Spain**, we are providing file processing support services for the Segura River Basin Authority in the area of Environmental Management and Hydrology, relating to authorisation of works that affect the public hydraulic domain, the streamflow regime, flood risk, water demand and water bodies and, likewise, we are supervising the channelling works on the River Oria, as it passes through Beasain, to prevent flooding on a 450 m stretch.

“Resource management to safeguard water and address the effects of extreme weather”



River Malaquito, Chile



River Cañete, Peru



São Francisco River Integration Project with the Northeast Watersheds, Brazil

## Architecture and building

In **Mexico**, TYPESA and the Group companies are carrying out important residential developments such as the comprehensive detailed design of the Cenit residential complex in San José del Cabo, Baja California Sur, composed of three six-storey towers with a total area of 23,600 m<sup>2</sup>; the detailed design of four residential villas in the Riviera Nayarit, within the Mandarina hotel complex, with a total area of 4,800 m<sup>2</sup>; and the project management for the Hotel NH Collection Monterrey upgrade, in San Pedro Garza, Nuevo León, with 157 rooms.

We also operate in the field of industrial building being involved in the project management of a new 8,650 m<sup>2</sup> processing food and cosmetics plants in Lerma, state of Mexico; the project management of a new 80,000 m<sup>2</sup> beverage processing plant in Veracruz; and thirteen buildings at the González Ortega combined cycle power stations, in Mexicali, Baja California and in San Luis Río, Sonora.

In **Panama**, we are carrying out the supervision and compliance audit of design, construction and equipment of six health centres and two hospitals in the indigenous regions of Guna Yala and Emberá-Wounaan; the comprehensive architecture and engineering detailed design for the new 53,600 m<sup>2</sup> headquarters of the Faculty of Medicine of the University of Panama, and the new 25,600 m<sup>2</sup> headquarters of the Civil Aeronautical Authority of Panama.

In **El Salvador**, we are responsible for the comprehensive construction project management for the new 35,000 m<sup>2</sup> Rosales National Hospital outpatient building and day hospital.

In **Saudi Arabia**, we carried out the conceptual design of a modular 300-room hotel in Oxagon Village in NEOM, built using off-site and modern mass modular technology and innovative sustainable architecture.



Design of the new headquarters of the Faculty of Medicine at the Universidad de Panama



Design of the new Technological Development and Experimentation Centre CETEDEX, Jaén, Spain

In **Spain**, amongst our work we can highlight the design of the Technological Centre for Development and Experimentation (CETEDEX) new main campus for research purposes in Jaén, consisting of five independent buildings, with a built area of 20,000 m<sup>2</sup> and 60,000 m<sup>2</sup> developed areas; the design and construction supervision of the 11,000 m<sup>2</sup> Advanced Manufacturing Centre of Jundiz, Vitoria-Gasteiz, aimed at driving innovation regarding future technical challenges in the automotive sector.

In the area of building construction quality control, we are reviewing the structural design, civil works and building services of 121 homes in the Paseo de la Dirección, in Madrid; and 104 homes on two plots of the "Hospital" urban development in Marbella, Malaga.

Other actions in the field of comprehensive project management include detailed engineering, project management and construction supervision of the refurbishment works at the Stellantis automobile factory in Figueruelas, Zaragoza; the project management of the Hábitat Abisal residential building in Las Palmas de Gran Canaria, with 40 homes; and that of a residential complex of 75 houses in Sant Adrià del Besòs, Barcelona, with a total built surface area of 8,900 m<sup>2</sup>.

“Comprehensive project management of large residential complexes and public facilities”

## Urban development

In **Saudi Arabia**, TYPASA is responsible for the overall integration of Ministry of Defence transformation initiatives being developed as part of Vision 2030, which includes a new Military City, the modernisation of the National Defence University and a new Joint Forces Command. Project management tasks are being carried out, including the development of the master plan, infrastructure design, building design review, programme management plan and communication programme.

We are also preparing the Initial Asset Briefs for the design of the planned assets in the suburban region of The Line, in NEOM, in which the master plan and objectives will be reviewed, and existing conditions will be confirmed. The codes and standards to be used, the business model, and the basis of design will be established. The project covers 186 km of coastline with a surface area of 2,222 km<sup>2</sup>.

In **Panama**, we are carrying out the master plan and preliminary design of two new corporate and industrial complexes in the Panama Canal, with the aim for strategic integration which favours the modernisation and optimisation of the Canal's activities.

In **Georgia**, we have carried out the conceptual design and feasibility study for the urban regeneration of the city of Tbilisi, based on the development of superblocks following the urban planning principles of the Superilla Barcelona model, including the proposal of refurbishment of historic buildings.



Current situation and proposed urban development in Tbilisi, Georgia



El Cañaveral urban development Madrid, Spain



Urbanisation of Pozokoetxe. Basauri, Spain

In **Spain**, as part of the growth plans for the city of Madrid, TYPASA is participating in the design and construction management of the important developments that are being carried out. In the area known as Southeast Developments, TYPASA is engaged in the project management, construction management and site supervision of Los Berrocales and Cañaveral developments and corresponding infrastructure services, as well as the construction management of the first phase of the urban development Los Cerros. In addition, studies are underway for the Sectorisation Plan of the 'Nueva Centralidad del Este'.

Within the railway and urban development project known as Madrid Nuevo Norte, TYPASA is providing engineering services and design for the urban development of the Parque Central located on the structure that covers the tracks at Chamartín Station, together with the project management services for the management and coordination of railway works and actions across the entire station area.

In Vizcaya, we are carrying out the development design and construction management of the Pozokoetxe residential complex in Basauri. The scope includes the railway underpass and Lehendakari Aguirre Avenue, following the Special Urban Regeneration Plan guidelines.

## Sustainable development and environmental protection

Environmental protection, the effects of climate change, and alignment with the basic principles of sustainable development are the subject of studies, evaluations and projects of the Group's companies around the world. To this end, collaboration is ongoing with the international financial institutions in the development and implementation of cooperation policies and the establishment of action plans to mitigate and adapt to climate change, and with the different official bodies in the development of projects to mitigate the impacts produced.

We are also participating in the framework contract, financed by the Inter-American Development Bank, entitled "Design, engineering and certification services of sustainable buildings for projects in Latin America and the Caribbean" for the implementation of projects concerning vulnerability and adaptation to climate change. Within this contractual framework, several projects are being implemented, such as the climate change vulnerability study at the Costa Verde Health Services Hospital in **Panama**; the design of adaptation measures to achieve climate resilience objectives on the Xochi Highway, Corredor de las Flores, in **Guatemala**; and support services for obtaining EDGE certification for sustainable construction in four industrial warehouses at the Itulpark Logistics Centre, in Itulpachi, **Ecuador**.

“Contributing to the reduction of infrastructure construction impact and to the policies to combat climate change vulnerability”

In **Angola**, we have carried out the environmental and social impact study for the construction of the new multifunction terminal in the port of Luanda. The project involves the development and improvement of the marine and surface elements of the terminal, the drafting of the Environmental and Social Management Plan for the construction and operational phases, and the analysis of vulnerability and adaptation to climate change. We have also drafted the Environmental and Social Impact Study, the Climate Risk Analysis, the Waste Management Plan and the Resettlement Plan for the 400 kV high voltage line between Xa Muteba and Saurimo.

In the **USA**, we conducted environmental studies for transportation infrastructure, such as the Sonoran Corridor, a 33.8-mile state highway, to improve access to Tucson International Airport; and the 30-mile SR-260 extension in Payson, Arizona. Both studies include archaeological and cultural fieldwork, surveys, analysis, and interpretation.

Throughout the world, the impact caused by the building of infrastructure and climate change vulnerabilities is also very present in the studies and designs carried out in the different sectors -road, rail, port, energy and building-, with the environmental aspect forming part of each. Noise pollution correction projects include the creation of strategic maps and action plans against noise and vibrations, as well as specific projects for mitigation, such as those carried out in **Spain** on the Vitoria-Bilbao section and the Bergara node of the Basque Y junction, or on the high-speed line Murcia-Almeria.

We also collaborate with different agencies in drafting regulations and implementation guides, such as support services for the evaluation of plans and designs for the Canal de Isabel II, or the drafting of the noise protection standard on roads and highways, for the Ministry of Public Works of **Chile**.



Proposals for the Xochi Highway, Corredor de las Flores, Guatemala

## Renewable energy

TYP SA and the Group companies are participating in the development of large solar photovoltaic and wind power projects, by evaluating implementation, the master plan, detailed engineering, environmental, social, hydrological and geotechnical studies, and obtaining permits and authorisations.

In **solar energy**, in **Spain**, we are involved in the development, engineering and construction management of large photovoltaic solar power stations such as those of Carmonita Sur in Badajoz, Alcores in Seville, and Terrer in Zaragoza. Within Europe, in **Finland**, whose latitude limits resource availability, TYP SA participates in the feasibility study, conceptual design and support for the tender of the 100 MW Utajärvi photovoltaic solar park; in **Portugal**, services include accompaniment of the hybridisation of six wind farms with eight solar photovoltaic plants, reaching power of 330 MW to add to the solar plants installed in the country.

In **wind energy**, during 2023, TYP SA extended the operating life of more than 800 MW distributed in 20 wind farms in **Spain, Portugal and Mexico**. In **Spain**, we supported the tender and selection of contractors for the construction of a renewable generation cluster in the Rueda Sur complex, Zaragoza, with 188 MW of total installed power. We have also carried out the preliminary design of the Cortijos and Pedrizas wind farms, in Teresa de Cofrentes, Valencia.

The majority of the onshore wind farms in Europe are approaching the end of their design life, making expansion now necessary, and we are supporting the main European developers, such as Acciona and Iberdrola, in the design of verification and repair solutions of wind turbines foundations to extend lifespans and ensure operational continuity of these projects.



Electrical substation of the Los Alcores solar park, Seville



Implementation works at the Carmonita Sur solar photovoltaic park, Badajoz



Wind farm in Boulouvar, Mauritania

In the **USA**, private clients continue to place their trust in TYP SA for the development of civil, electrical and structural engineering services in three solar photovoltaic parks located in Texas, Indiana and Arizona, which total more than 600 MW; in **Saudi Arabia**, within the framework of the roadmap set out by the Vision 2030 Plan, TYP SA is participating in the development of six photovoltaic plants, with a total capacity of 11 GW.

In Latin America, important contracts continue to be added to our portfolio, such as the detailed design of three solar parks in **Mexico**, totalling 200 MW; in the **Dominican Republic**, preliminary engineering and support for the tender for the construction of the Dominican Azul 101 MW solar photovoltaic plant and its 97 MWh battery storage system; in **Uruguay**, technical services for the performance evaluation of six solar photovoltaic plants in Paysandú with a total power of 70 MW; and in **Chile**, preliminary engineering for tender of the EPC contract of the Andes Solar 3 solar park, of 175 MW, with 171 MW of power in batteries for 4 hours of storage.

In **Mauritania**, we have continued to provide owner's engineering services for the Boulouvar wind farm, inaugurated in December 2023, consisting of 39 turbines, with a total installed capacity of 100 MW.

“Technology for the creation of clean energy sources to meet emission reduction targets”



Floating solar plant



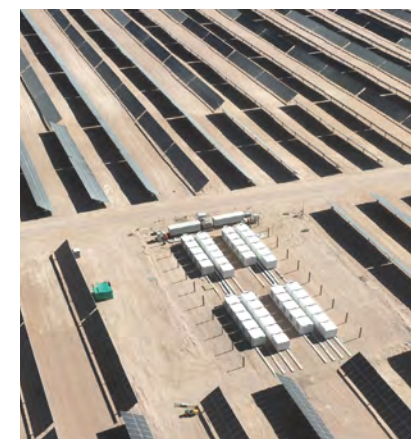
"Condor" stand-alone project, with lithium-ion batteries, California, USA

The design of **offshore facilities**, both in the field of energy generation, whether wind, solar or produced by waves, as well as the design of underwater transmission lines, represent a field of work that requires high technology and in which TYP SA is present both in the preparation of conceptual designs and in detailed engineering, or acting as Owner's engineering.

In **Saudi Arabia**, the conceptual and detailed design of a submarine power cable, in the NEOM region, to supply energy to Susha Island has been carried out, as part of a project to energise 33 islands. The design features three 33 kV power cables, each with two 72 fiber optic cables. The project is particularly challenging as special protected environmental areas need to be avoided.



Section of the submarine cable used in the NEOM region project



Battery system of the Andes Solar IV plant, Chile

The **United Kingdom** is the country with the highest development of offshore wind energy. TYP SA collaborates with one of the industry's leading developers, in owner's engineering for the development of two parks in the Irish Sea, on a multi-gigawatt scale. In the **Philippines**, due diligence has been carried out for a 300 MW onshore wind farm and four offshore wind farms with a total of 2.2 GW, encompassing the basic design of the entire farm, the study of risks, production, logistics, and current regulation and financial analysis.

TYP SA also stands out as a key player in the growing world of floating photovoltaic solar energy and has carried out the analysis, technical evaluation and engineering design of a 25 MWp floating solar plant in **France**.

As for **energy storage facilities**, the rapid fall in battery prices, especially those of lithium, has driven the implementation of these systems. TYP SA participates in the owner's engineering and design in projects such as those in the Condor, Nightwalk, Peregrine and Atlas in California, **USA**, which total 1,600 MW of power in batteries with a capacity of 3,000 MWh; at Bluegrass solar plant in **Australia**, with 60 MW and 120 MWh lithium-ion batteries; and in **Chile**, in several of the largest projects in the country, such as Andes Solar II and IV, with a capacity of 150 MW of batteries with capacity for three hours.

In **energy transmission and distribution**, in **Spain**, TYP SA participates in the owner's engineering in preparing bidding specifications for tenders, contract support services, validation of engineering and construction management of evacuation nodes for the main energy developers, such as Carmona 220/30 kV, Ébora 220/30 kV, Ayora 400/138 kV or Almodóvar del Río 220/30, which integrate several transformer positions with capacity from 50 to 100 MVA and multiple line positions for integration with the transport network.

In **Uganda**, feasibility studies have been developed for the 220 kV and 92 km Hoima-Kinyara-Kafu line, two new 220 kV substations and the expansion of the Hoima 220 kV substation. In **Burkina Faso**, we provide owner's engineering services for the Wona - Dédougou, Pâ - Diébougou, Ziniaré - Kaya high voltage lines and associated substations.

## Irrigation infrastructure

In **Chile**, TYP SA is undertaking numerous studies, projects and programmes aimed at increasing water availability and improving water management for farmers and consumer organisations at the request of the National Irrigation Commission of Chile, responsible for planning irrigation in the country. TYP SA's participation is remarkable in the design and construction supervision of the infrastructure works necessary for these purposes.



Imperial Canal, Araucania Region, Chile



Laja-Digillín Canal, Nublé region, Chile

In the Nublé region, TYP SA is responsible for the control, management and surveillance of the 50 km long Laja-Digillín canal, which irrigates 44,630 ha. In the Araucania region, detailed engineering is being carried out for the improvement of the Quepe Sur Canal, 20 km long and with a capacity of 4 m<sup>3</sup>/s, together with several adjoining works. Also ongoing is the design and construction supervision of the Las Vertientes-Púa irrigation improvement works, with a



Las Vertientes-Púa irrigation system in the Araucania region, Chile



Conservation and maintenance of the Calanda-Alcañiz canal, Zaragoza,

200 km network of canals and capacity of 3 m<sup>3</sup>/s, providing water for irrigation to 8,000 ha. Also in this region, design and construction supervision of the Imperial Canal irrigation system improvement works is underway. The 25 km long canal joins the cities of Temuco and Nueva Imperial, and aims to irrigate 6,000 ha.

In **Spain**, TYP SA is in charge of the maintenance and conservation of the state-owned canals in the Duero River Authority. Services include ordinary and extraordinary operations, arising from emergency situations in the Orbigo, Esla, Tuerto, Carrion, Alto Duero and Tormes systems. In Spain, TYP SA participates in the maintenance of the Calanda-Alcañiz and Caspe canals, in the provinces of Zaragoza and Teruel, which serve the 12,500 ha irrigable areas of the same name in the Guadalupe river basin. TYP SA is also supervising the construction of the new pipeline on the left bank of the Júcar-Vinalopó inter-basin water transfer, which distributes the water from the Toscar reservoir to the irrigation communities of Vinalopo and has a branch connecting with the La Mola reservoir.

## Rural development



Tea plantation in Tanzania

In **Tanzania**, we conducted the evaluation of the AGRI-CONNECT programme, aimed at optimising the horticulture value chain, including tea and coffee crops..

In **South Sudan**, we are supporting the implementation of the Green and Resilient Economic Programme, with the aim of contributing to increased food and nutritional safety, promoting the green economy and improving resilience to crisis situations.

In **Mozambique**, we participated in the review of the PROMOVE Agribiz programme, which supports the development of sustainable small-scale commercial agriculture, through the integration of smallholders into the production chains of the country's enterprises, as well as in the design of a programme for the development of sustainable and nature-positive agricultural and agroforestry value chains.

The European Union considers aid contributions to the agricultural sector of the least developed countries, mainly in Africa, to be a priority, and the TYP SA Group companies are actively participating in the programmes established for such purposes, contributing to agricultural economic development and the conservation of natural resources.

In **Malawi**, we are providing support services for the conservation, restoration and regeneration of natural resources and ecosystem diversity in the country, with the overall objective of improving land use planning, watershed management, soil and forest cover conservation and regeneration, together with the development of multisectoral natural resource management capacities.



Rural village of Mozambique

“Increasing the value chain of agricultural and agroforestry developments in lesser developed countries, in a sustainable and positive way for nature”



Small-scale trade in Mozambique markets

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