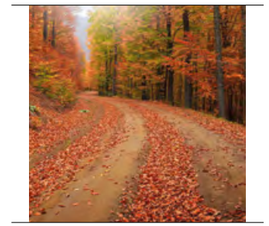
annual report 2021

Group

TYPSA

Every accomplishment starts with the decision to try



Letter from Pablo Bueno

> **We continue to grow, preparing for the most important challenges, helping to improve citizens' quality of life with the best competitive solutions**

A-465 Heads of the Valleys. Wales, United Kingdom

Jubail desalination plant. Saudi Arabia

The year 2021 represented a transition to a new normal that has not yet been fully defined. Living with COVID-19 is now a reality in which restrictions on travel and face-to-face meetings have practically disappeared. The pandemic has fuelled new ways of working and relating, some of which are here to stay.

Many countries have launched investment measures to alleviate the economic crisis that the pandemic ushered in and to drive progress towards more sustainable and digital societies and economies. As a result, there is a greater demand for engineering. In most markets, we are seeing renewed appreciation of our services and more stringent demands on the contribution that our solutions make to sustainable development. Some markets, however, continue to be led by a misguided inertia that perpetuates the belief that savings made on thinking and securing construction quality will make investments cheaper. We have also noticed a rise in legal disputes in major contracts, making the insurance market more expensive and complicated and putting unwelcome pressure on contract management functions. Once again, the year saw a steady rise in the price of commercial software, confirming that proprietary software and open and interoperable formats continue to be the key to success. Despite these difficulties, the engineering sector is proving extremely attractive to private equity and venture capital funds, whose operations are pushing up prices in the market and making growth through acquisitions unreasonably difficult.

For TYPSA, 2021 was a momentous year. Our production, contract awards, backlog and earnings are once again at an all-time high, all the result of organic growth alone. Production increased by 11.5 % to 267 million euros. Contract awards reached 280 million euros and we ended the year with a backlog of 330 million euros. The number of people working with the Group at the end of the year stood at 3,126, the highest in our history.

We have followed a particularly remarkable growth path in newer regions such as South Asia, Australia and Canada, while we also continue to expand in regions we have been serving for many years, such as Latin America. We have maintained our strong presence in Europe, the United States and Africa. The significant activity in these markets amply offsets the decrease in our activity in the Middle East and the uncertainty of the Spanish market where, despite the rise in public procurement, the current contracting conditions generate a particularly complex scenario for engineering.

Our revenue shows a higher proportion of design-related services to construction-related services in 2021, while our transport engineering activity surpassed that of other traditional TYPSA areas of expertise. Yet again, this illustrates our status as an authority in more sustainable mobility solutions, especially in the railway sector, with flagship projects in Canada, Mexico, Sweden, the United Kingdom, Brazil, India, Bangladesh and Australia.

Our R&D activity focused on digitalisation and collaborative projects, bolstering our contribution to the sustainability and resilience of buildings, infrastructure and cities. R&D projects also targeted combining technical knowledge with modern technologies to design new consulting, engineering and architectural services. In 2021, the TYPSA Digital Accelerator was created with a mission to provide both our clients and the Group itself with innovation and digitalisation support. At the end of the year, Madrid hosted the first TYPSA hackathon, exploring ideas for improving digital twins from BIM models. We increased our investment in training for all our employees, aiming for performance excellence for the benefit of our clients, as evidenced by the numerous international awards won for our work.

We continue to honour our status as a Signatory member of the United Nations Global Compact, and we renewed our commitment to its ten principles on human rights, labour, environment and anti-corruption. The Global Compact Network has recognised our commitment to six new good-business practices related to clean water and sanitation, the circular economy, climate change, sustainable mobility, digitalisation and respect for human rights. The TYPSA Foundation for Development has continued its work at the recently officially opened Lake Albert University in the Democratic Republic of the Congo, and in Kenya on the Emmaus programme.

We saw out 2021 among uncertainties arising from the dramatic rise in the debt of many countries, the already irreversible increase in the cost of these debts and unusually high inflation rates, which had not been seen for a long time. The serious conflict that is currently raging in Europe, which we all wish would end, only adds further doubts. The impact on the global economy will undoubtedly be significant and will probably negatively affect planned investments in some countries and consequently the engineering market and its costs.

Despite this scenario, I have full confidence in the future and our continuing ability to provide our clients with new and better solutions that will contribute to improving people's lives. We are stronger, TYPSA as a company is sound and we are capable of dealing with complex situations, as demonstrated by the excellent results in recent years. But, above all, we know we can count on our people's positive attitude, their ability to excel and their willingness to serve the community.

PABLO BUENO TOMÁS
TYPSA Group President and CEO

Management report

Highlights of the year

> **Innovating, fuelling digitalisation and improving our procedures and systems to offer our services anywhere in the world**

MARKET ACTIVITY

International contracts represent:

80 % of the Group's revenue

79 % of the Group's awards

78 % of the Group's backlog

UNITED STATES & CANADA

Major Infrastructure Investment Plan approved in the United States and promotion of the use of new technologies in project implementation.

13 % of the Group's revenue | **176** people | **5** offices in USA | **1** office in Canada

Important participation in the Toronto Transit Expansion Program in Canada.

SPANISH-SPEAKING LATIN AMERICA

Continuation of our large rail projects in Mexico, new opportunities associated with government-to-government (GTG) agreements in Peru. Political instability in some countries slowing down investments.

21 % of the Group's revenue | **808** people | **8** offices | **1** laboratory (in Peru)

New contracts consolidate our presence in Central America.

BRAZIL

Focus on transport infrastructure concession programmes continues.

4 % of the Group's revenue | **252** people | **1** office

New public procurement law, representing an important step forward for the development of our business in Brazil.

SPAIN

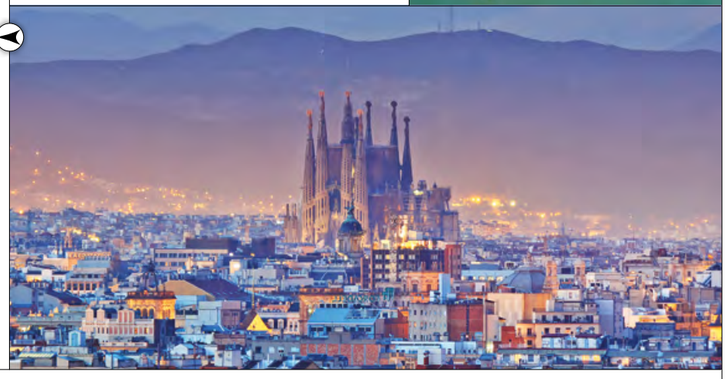
Public procurement picked up in the second half of the year.

20 % of the Group's revenue | **1,368** people

16 offices | **3** environmental laboratories

1 materials laboratory | **1** harbour laboratory

Contract awards and backlog up on the previous year.



REST OF EUROPE

Major projects continue in the UK and Sweden, new contracts in Ireland and business growth in Northern Europe.

14 % of the Group's revenue | **126** people | **4** offices

New projects strengthen our presence in the Balkans.

ASIA & AUSTRALASIA

We continue to strengthen our presence in Central and South Asia with new offices and involvement in major projects in different sectors.

11 % of the Group's revenue | **171** people | **4** offices

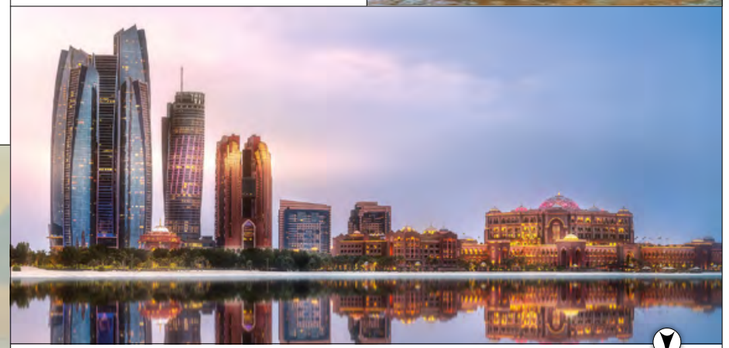
Taking part in significant design-build tenders in Australia and new renewable energy projects in Vietnam.

AFRICA

Participation in different water, road and railway projects continues in Tunisia, Madagascar and Uganda, and work starting in new countries.

6 % of the Group's revenue | **55** people | **3** offices

Consolidating our presence in the energy market in the west of the continent.



MIDDLE EAST

New projects in renewables in Saudi Arabia. Our participation in major water treatment plant projects continues.

11 % of the Group's revenue | **170** people | **4** offices

Restructuring our presence in the area and good prospects in new countries in the region.

Key figures

Consolidated data and Group figures (in € million).

Exchange rate December 31 2021: 1 EUR = 1,2271 USD.

REVENUE	2017	2018	2019	2020	2021	2021(USD)
Total	215.99	213.82	219.40	239.44	266.93	302.32
USA & Canada	28.45	26.30	21.11	21.18	34.34	38.89
Spanish-Speaking Latin America	40.39	37.33	41.20	45.23	56.79	64.32
Brazil	13.29	10.30	11.68	8.72	10.00	11.33
Spain	29.77	42.63	47.03	52.10	53.36	60.44
Rest of Europe	18.38	25.85	29.48	36.13	38.55	43.66
Africa	15.47	15.14	15.48	12.67	14.89	16.86
Middle East	67.49	50.80	37.65	40.00	30.60	34.66
Asia & Australasia	2.75	5.47	15.77	23.41	28.40	32.16

CONTRACT AWARDS	2017	2018	2019	2020	2021	2021(USD)
Total	211.98	230.11	250.62	267.79	280.14	317.29
USA & Canada	33.90	23.18	18.90	28.76	41.99	47.56
Spanish-Speaking Latin America	20.94	45.03	36.03	49.37	69.11	78.27
Brazil	19.36	29.00	16.71	15.09	7.15	8.10
Spain	38.84	59.52	59.78	49.49	59.49	67.38
Rest of Europe	26.41	18.94	28.74	55.89	29.98	33.96
Africa	20.44	17.93	17.82	13.34	13.22	14.97
Middle East	45.16	17.91	34.42	27.67	19.08	21.61
Asia & Australasia	6.93	18.60	38.22	28.18	40.12	45.44

BACKLOG	2017	2018	2019	2020	2021	2021(USD)
Total	264.64	283.71	316.86	320.77	330.37	374.18
USA & Canada	13.83	11.40	8.54	15.46	24.47	27.72
Spanish-Speaking Latin America	39.01	47.23	43.67	42.52	56.11	63.55
Brazil	28.48	38.23	42.36	35.92	22.95	25.99
Spain	31.41	55.83	68.53	65.93	72.35	81.94
Rest of Europe	27.78	20.77	17.28	37.13	29.56	33.48
Africa	32.19	37.93	40.33	40.66	37.63	42.62
Middle East	83.17	53.11	53.58	37.46	27.88	31.58
Asia & Australasia	8.77	19.21	42.57	45.69	59.42	67.30

Equity	2017	2018	2019	2020	2021	2021(USD)
	101.09	106.25	112.07	119.51	132.33	149.88

Total equity	2017	2018	2019	2020	2021	2021(USD)
	97.80	105.19	110.30	115.39	130.10	147.35

Earnings before taxes	2017	2018	2019	2020	2021	2021(USD)
	16.92	15.90	16.04	21.00	28.95	32.79

Earnings after taxes*	2017	2018	2019	2020	2021	2021(USD)
	10.98	10.97	11.07	14.12	19.39	21.96

** Attributed to the parent company*

People	2017	2018	2019	2020	2021
No of people (at Dec. 31)	2,445	2,562	2,818	2,845	3,126
No of people (yearly average)	2,450	2,504	2,665	2,831	2,974

Equity / Total assets	2017	2018	2019	2020	2021
	0.61	0.59	0.61	0.59	0.55

Current assets / Current liabilities	2017	2018	2019	2020	2021
	2.30	2.46	2.58	2.36	2.10

% Earnings after taxes / Initial net equity	2017	2018	2019	2020	2021
	12.0 %	11.9 %	10.8 %	13.3 %	17.0 %

% Earnings before taxes / Revenue	2017	2018	2019	2020	2021
	7.8 %	7.4 %	7.3 %	8.8 %	10.8 %

% Earnings after taxess / Revenue	2017	2018	2019	2020	2021
	5.3 %	5.4 %	5.2 %	6.1 %	7.3 %

Revenue per person (in euros thousand)	2017	2018	2019	2020	2021
	88.16	85.39	82.33	84.58	89.75

Management report | Financial review

Financial review

CONSOLIDATED ASSETS (in euros)	2021	2020
A) NON-CURRENT ASSETS	36,892,212.52	30,231,800.31
I. Intangible assets	4,738,386.88	5,353,705.73
II. Plant and equipment	19,861,256.20	15,202,836.87
III. Long-term investments in subsidiaries	2,713.33	1,629.58
IV. Long-term financial investments	4,100,949.98	3,864,185.83
V. Deferred tax assets	8,188,906.13	5,809,442.30
B) CURRENT ASSETS	202,360,597.72	172,345,464.64
I. Non-current assets held for sale	68,822.27	68,822.27
II. Inventories	8,189,874.56	65,738.50
III. Accounts receivable, work in progress and others	83,290,289.20	91,203,010.71
IV. Short-term investments in Group companies and associates	35,785.50	-
V. Short-term investments	1,359,360.75	2,069,122.49
VI. Prepaid expenses and other current assets	2,473,103.04	1,900,111.41
VII. Cash and cash equivalents	106,943,362.40	77,038,659.26
TOTAL ASSETS (A+B)	239,252,810.24	202,577,264.95

CONSOLIDATED EQUITY AND LIABILITIES (in euros)	2021	2020
A) TOTAL EQUITY	130,102,161.57	115,392,185.46
A-1) Equity	132,332,659.50	119,514,823.96
I. Share capital	2,400,000.00	2,400,000.00
II. Retained earnings	82,126,172.58	81,688,829.86
III. Retained earnings in other companies in the group	34,363,722.12	27,480,569.46
IV. Retained earnings at companies accounted for using the equity method	(34,689.82)	(34,622.48)
V. (Treasury stock)	(435,936.74)	(1,190,896.35)
VI. Net income attributable to the parent company	19,391,996.36	14,115,693.47
VII. (Interim dividend)	(5,478,605.00)	(4,944,750.00)
A-2) Currency translation adjustments	(3,703,825.10)	(5,470,655.87)
A-3) Minority interests	1,473,227.17	1,348,017.37
B) NON-CURRENT LIABILITIES	12,561,744.64	14,017,184.79
I. Long-term provisions	5,259,900.11	5,209,787.82
II. Long-term debt	3,244,357.50	3,271,810.74
III. Billing in excess of cost (long-term)	3,365,668.95	4,891,625.00
IV. Deferred tax liability	691,818.08	643,961.23
C) CURRENT LIABILITIES	96,589,004.03	73,167,894.70
I. Short-term provisions	806,785.44	3,911,389.18
II. Short-term debt	180,914.09	298,679.11
III. Billing in excess of cost	43,364,277.92	26,019,241.10
IV. Trade accounts payable and advanced billing	51,928,618.68	42,699,032.23
V. Accrued expenses and other current liabilities	308,407.90	239,553.08
TOTAL EQUITY AND LIABILITIES (A+B+C)	239,252,810.24	202,577,264.95

CONSOLIDATED PROFIT AND LOSS ACCOUNT (in euros)	2021	2020
A) CONTINUING OPERATIONS		
Operating revenue	266,930,476.98	239,439,122.85
Changes in inventories of developments in progress	8,140,369.16	-
Capitalised in-house work on fixed assets	55,811.33	60,139.26
Materials, services of third parties and subcontractors	(72,646,550.42)	(51,485,650.77)
Other operating revenues	1,972,431.38	1,516,526.56
Personnel costs	(131,056,078.42)	(115,315,469.29)
Other operating costs	(45,171,022.71)	(47,088,853.58)
Depreciation and amortisation	(3,639,275.06)	(3,430,264.46)
Surplus	7,335.93	-
Income from sale of assets	96,412.50	(17,309.58)
A-1) Operating income	24,689,910.67	23,678,240.99
A-2) Financial income	4,255,811.53	(2,672,794.73)
Share in the profits (losses) of companies accounted for using the equity method	1,015.06	(67.22)
A-3) Earnings before taxes	28,946,737.26	21,005,379.04
Income taxes	(9,382,320.79)	(6,329,642.10)
A-4) Net income from continuing operations	19,564,416.47	14,675,736.94
A-5) Consolidated net income for the year	19,564,416.47	14,675,736.94
NET INCOME ATTRIBUTABLE TO NON-CONTROLLING INTERESTS	172,420.11	560,043.47
NET INCOME FOR THE PERIOD ATTRIBUTABLE TO THE PARENT COMPANY	19,391,996.36	14,115,693.47

Responsibility, integrity and sustainability

Our team


Antonio Capilla, Elena Holgado and Javier García-Monsalve

Our People: our most valuable asset.
We base our strategy on pursuing engagement and wellbeing, paying special attention to career development.

> **We attract and retain the industry's top people'**

Analysis and Indicators

Number of people

	Spain	International	Total
2019	1,178	1,640	2,818
2020	1,241	1,604	2,845
2021	1,368	1,758	3,126

Gender ratio

69 % Men — 31 % Women

Staff per type of employement contract

81 % Permanent — 19 % Temporary

People by region

USA & Canada	176	6 %
Spanish-speaking Latin America	808	26 %
Brazil	252	8 %
Spain	1,368	44 %
Rest of Europe	126	4 %
Africa	55	2 %
Middle East	170	5 %
Asia & Australasia	171	5 %
Total	3,126	100 %

Staff turnover in 2021

6.89 %

Still a low percentage

Board of Directors

7 Men — 4 Women

People Benefits

Consolidation of the Flexible Remuneration Plan
An opportunity for benefits other than salary (dining cards, childcare vouchers, private health insurance, travel cards and training). Benefits can be adapted to suit personal requirements, generating significant savings.

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.

> **TYPSA Benefits: our remuneration package is tailored to people's needs**

People Management

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.).

Occupational Health and Safety Management System

In-house Health and Safety Service
TYPSA has the technical expertise to manage occupational safety, ergonomics and applied psychosociology, while outsourcing industrial hygiene and health monitoring.

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

System Improvements
ISO 45001:2018 occupational safety and health systems certification renewed. Up until 2021, the certification covered all TYPSA workplaces in Spain, Peru, Chile and Saudi Arabia, subsidiaries TEYS, MC2, INTEMAC and RAUROS in Spain, TYPSA LIMITED in the United Kingdom, TYPSA AB in Sweden, TYPSA Pty Ltd in Australia and MEXTYPSA in Mexico. In 2021, it was extended to RAUROS Mexico and Peru.

COVID-19 actions: monitoring, controlling and updating measures needed to combat the impact of Covid 19 on the work environment and in the workplace.

We continue to use the Corporate Occupational Health and Safety app for management and SharePoint for agile and fast access to the same documents across Group companies anywhere at any time. All health and safety system documentation is now available in English.

Paula de Lama, Olimpia Kierkicz and David Moreno


Accident Rate Statistics

Accident Frecuency Rate (AFR) for work-related accidents
AFR = (No of accidents / No of hours worked) x 10^6

Accident Severity Rate (ASR)
ASR = (No of days lost / No of hours worked) x 10^3

Training

Strengthening our Intellectual Capital

- One of the Group's firmest commitments to its people.
- Essential for career progression and motivation.
- Annual and specific training plans.
- More training opportunities every year.

Training hours

81,541
hours

Training activity

1,387 training actions for **4,334** attendees

Priority Training in:

- Improving the digital workplace, digital transformation and collaborative working environments.
- Resilient and sustainable cities and infrastructure, climate change, renewable energy, life cycle, circular economy.

The fight against corruption

Our **Integrity Management System (IMS)** enables us to pursue and consolidate an ethical corporate culture that prioritises regulatory compliance, transparent business practices and a commitment to society.

Commitment to Ethics and Integrity

Supported by our:

- Code of Ethics containing mandatory guiding principles for everyone in the Group.
- Corporate Integrity policy.
- Gift policy.
- Integrity Management Manual.
- Financial and non-financial control procedures.
- ISO 37001 Anti-Bribery Certification.
- Compliance Committee, working independently and reporting directly to the Board of Directors, enhanced by our Compliance Team reporting to the Committee.
- Annual Modern Slavery Statement.
- Equality, Diversity and Inclusion Statement.

System Improvements

- Compliance Team created to enhance the work of the Integrity Management System Compliance Committee.
- Updating, simplifying and improving the Integrity Management System documents, including the new Code of Ethics, Corporate Integrity Policy, Gift Policy and Integrity Management Manual.
- 100% of our people have received Integrity Management System training.
- Technological tools:
  - Due diligence automation for partners and suppliers in commercial and operational phases.

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

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

2019	2020	2021
8.5	8.5	8.3

(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

2019	2020	2021
3	3	2

TYPSA's Management System

We operate as ONE COMPANY from anywhere in the world

TYPSA's ISO 9001 certified quality system has been in place for 26 years and is a common reference for all branches and subsidiaries.

Our ISO 14001 certified Management System has assured correct environmental performance for over 15 years.

Systems and Procedures

An Information Security System is in place to ensure the confidentiality and integrity of nonpublic information; a Legislation Database, available on the corporate intranet, gives our people permanent access to up-to-date environmental laws applicable to the work they are doing; and an Environmental Legislation Alert System relays news on environmental legislation and standards the moment they are published.

System Improvements

- Our management system achieved ISO 19650 Certification (Building Information Modelling).
- New ISO 27001 Information Security Certification.
- More than 70% of the Group's output has been audited.

Number of internal quality and environment audits

2019	2020	2021
134	112	122

Internal quality and environment audit scores

2019	2020	2021
8.2	8.5	8.5

(max. possible 10)

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.

System Improvements

Optimised automated order and invoice management model for better control of outsourced activities and final job evaluation.

Supplier and subcontractor evaluation scores

(max. possible 10)

2019	2020	2021
7.8	8.2	8.2

The Community

Commitment to Society: acting responsibly and playing our part in improving society wherever we are.

Our Presence in the Industry

Involvement in Business and Professional Organisations

Leading the sector's positioning for the opportunities offered by the European funds for economic recovery and transformation, and to address new regulations on climate change and sustainable energy, international mobility, digital transformation, sustainable cities, international development and development financing.

- We continue to occupy top positions in key Spanish and international industry organisations: FIDIC, EFCA, TECNIBERIA, CEOE, MAFEX.
- We are active in Spain's Professional Associations (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, such as: the Spanish and International Committees on Large Dams (SPANCOLD and ICOLD), Tunnelling Association of Canada (TAC), Spanish Association of Tunnels and Underground Works (AETOS), International Federation for Structural Concrete (FIB), World Road Association (PIARC) and the Water Environment Federation (WEF).

Pablo Bueno, Group CEO

Working with Universities

- The Group is a Member of the School of Civil Engineering Advisory Board at the Universidad Politécnica de Valencia.
- Collaboration with several universities offering technical courses in Spain; 51 interns during the year.
- Our Agreement with the Madrid School of Civil Engineering Harbour Laboratory is still in place, continuing the 14 years of teaching and innovation support through the TYPSA - 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 agreements with the Universidad Politécnica de Madrid, teaching at the Schools of Civil Engineering, Industrial Engineering and Aeronautical Engineering.
- Extension of the agreement with the Madrid School of Architecture, teaching on the BIM Methodology and Project, Construction and Real Estate Asset Management Master's Degree.
- Collaboration with the UNED distance learning university to organise and teach the AETOS Master's Degree in Tunnels and Underground Works.
- Collaborations with the National College for Advanced Transport & Infrastructure (NCATI), University of Birmingham (UK), teaching BIM; with California State University, Los Angeles (USA) giving classes on detailed design at the School of Engineering, and with the Universidad Europea (UE), Madrid, teaching BIM on the engineering master's degree.

José Laffond

Awards and Honours


Tamoios Highway, Brazil

Excellence in Concrete Construction Awards 2021 awarded by the American Concrete Institute (ACI). Infrastructure category

Viaduct V3 in the Tomoios Highway, in the difficult to access Serra do Mar State Park

The curved viaduct was designed with a prestressed concrete box deck for a 125 m central span and construction by balanced cantilever method. A temporary cable crane was installed for use during the construction stage, drastically reducing the environmental impact. TYPSA Group is part of the award-winning team, together with developers and contractors, thanks to Group subsidiary ENGECORPS' contribution to the final design.

Andalusian Engineering Works Award 2021, Andalusia, Ceuta and Melilla Chapter of the Spanish Institution of Civil Engineers. Best Public Works Category

Málaga Metro

Concept, design and development excellence. TYPSA has been involved in the project on an ongoing basis since the outset in 2005 and now shares the prize with developers, designers and contractors. Works to be highlighted include Lines 1 and 2 concession contract construction supervision; detailed designs for the infrastructure and site development of the Guadalmedina-Malagueta section (lines 1 and 2) and Malagueta-El Palo section (line 3); the study of alternatives for the extension of Line 2 north to Ciudad Jardin; construction supervision of the Renfe – Guadalmedina section (lines 1 and 2), and engineering services provided to the Malaga Metro Concession Company.


Rande Bridge, Spain

FEPAC 2021 - 50th Anniversary Awards. Grand Award of Excellence

Widening of the Rande Bridge

MC2, a TYPSA Group subsidiary, won this award for design and construction supervision services.

'Madrid M-30 – Madrid Rio, an urban transformation project'

TYPSA, Intecsa-Inarsa and Acciona's engineering area won this award for their participation in design and construction supervision.


Madrid M-30 - MRio: Greening over the M-30 motorway

Spanish Ministry of Transport, Mobility and Urban Agenda Matilde Ucelay Award. Design category

'Via Irun' project

TYPSA shares this award for its contribution to the Urban Development Plan Modification on railway land in Irún. A central mixed-use hub around the high-speed train station and a public transport interchange are the main features of this urban renewal project that boosts TML (transport, mobility and logistics) while integrating a gender perspective.

International CEEQUAL Client & Outline Interim Award. Excellent sustainability rating (80.1%)

Stockholm Metro project

An essential project that significantly boosts the city's public transport capacity to support the sustainable growth of the rapidly developing region. TYPSA won the award, together with its partners, for the engineering component of the project.


Stockholm metro

Albert Serratosa National City and Territory Award from the Spanish Institution of Civil Engineers and the Fundación Caminos. Local Action category

Green Streets design for the transformation of Cristobal de Moura Street

Promoted by the Barcelona Municipal Institute of Urban Planning, the award recognises the project's contribution to SDGs through innovative and outstanding urban naturalisation solutions. TYPSA Group is a member of the award-winning team through its subsidiary Green Blue Management which calculated and modelled the SUDS, green infrastructure that enhances the city of Barcelona's liveability and resilience.


Green Streets Project: Cristobal de Moura Street

Universidad Politécnica de Madrid (UPM) Annual Research and Innovation Award 2021

Prize awarded to TYPSA for 'Public-Private Development Partnership for Sustainable Development Goals in collaboration with the Universidad Politécnica de Madrid'

The award recognises the uninterrupted relationship that TYPSA and UPM (Universidad Politécnica de Madrid) have developed over a period of more than 13 years, through various institutional development activities, in particular promoting education and teaching at the faculties of Civil and Agricultural Engineering at Lake Albert University in the Democratic Republic of the Congo. This public-private collaboration in an area of Africa with very limited access to quality education significantly contributes to meeting SDGs, in particular SDG 4.


Lake Albert University, Mahagi (R.D. Congo)

Ground Engineering Award 2021. Editor's Award category

SCS Design House comprising ARUP, TYPSA and STRABAG

Award for work on HS2 high-speed rail detailed design, in London.


HS2 High Speed, London

Publication of the History of TYPSA in the prestigious English academic journal *Management and Organizational History*

Journal Citation Reports (JCR), the authority in the academic world for the classification of publications, ranks *Management and Organizational History* among the top 10 Social Sciences and History publications. Publishing in these journals involves a rigorous anonymous peer review process.

The article 'Contextualizing corporate entrepreneurship theory: the historical case of the Spanish engineering consulting firm TYPSA (1966-2000)' was published in the research section, by the authors Adoración Alvaro Moya, Agueda Gil López and Elena San Román. The article highlights TYPSA's ability to adapt to changing times, being permanently entrepreneurial, innovative and proactive, willing to take risks and highly resilient.

(https://www.tandfonline.com/doi/full/10.1080/17449359.2022.2033441)

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.

Carlos Pérez, Ainara González (MAFEX) and Nacho Pardo. TransMEA 2021, Cairo

Aitor Ezquerra, Inés Ferguson and Beatriz Rodríguez. Rail Live 2021, Madrid

Juan Ojeda. Mediterranean Water Forum, Malta

- Webinar on Collaborative Contracts. AEDIP, April '21.
- XVI Hotel Real Estate Market Sector Meeting. *Project Management Inmohotel 2021*. Cesine Publishing Group. Madrid, May '21.
- Technical symposium to present the document 'Recommendations for characterising the heritage value of bridges'. Technical Road Association (ATC) in collaboration with the Spanish Institution of Civil Engineers and promoted by the Ministry of Transport, Mobility and Urban Agenda. Madrid, May '21.
- EFCA General Assembly. Brussels, June '21.
- Webinar on Sustainable Communities. FIDIC, September '21.
- FIDIC Global Infrastructure Conference. Geneva, September '21.
- XII Spanish Conference on Dams, SPANCOLD. Las Palmas, September/October '21.
- 2nd World Conference on Sustainable Transport. *World Forum of Underground Urban Transportation*. United Nations. Beijing, October '21.
- *British Tunneling Society Conference & Exhibition*. London, September/October '21.
- VII Global Engineering and Public Works Forum 'Investing for Growth'. CICCP in collaboration with the Caminos Foundation, the UMP and the Ministry of Transport, Mobility and Urban Agenda. Madrid, November '21.
- European Underground and Tunnel Forum (EUTF). Tunnel associations of 9 European countries. Madrid, November '21.
- Iberian Congress on Groundwater. Spanish Group of the International Association of Hydrogeologists and the Universidad Politécnica de Valencia. Madrid, November '21.
- TransMEA. Transport, Logistics and Intelligent Traffic Fair. Organised in cooperation with the Ministry of Transport of Egypt. El Cairo, November '21.
- Spain-Ecuador Business Meeting. Madrid Chamber of Commerce, November '21.
- IDB Webinar on Digital Transformation. ICEX, November '21.
- *Rail Live* Conference and Fair. Terrapin and MAFEX. Madrid, November/December '21.
- Virtual meeting on Strategies and Opportunities for Sustainable Logistics and Transport in Central America. EUCA Trade Talks 4 programme, funded by the European Commission, December '21.
- Mediterranean Water Forum, World Water Council. Malta, December '21.
- 2nd Smart Roads Conference. Spanish Road Association. Madrid, December '21.

Environment

Environmental Management System: committed to minimising environmental impacts generated directly or indirectly by civil works.

Lines of Action

- 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

TYPSA has two main strategies to combat climate change:

- a company strategy, measuring and verifying the corporate carbon footprint since 2013, each year's footprint being registered in the National Carbon Footprint Registry at the Ministry for Ecological Transition, achieving not only recognition for footprint calculation, but also for reduction over the years.
- a project strategy developed by our Environmental Consulting and Assessment division, integrating climate change variables in all project phases that mitigate GHG emissions, incorporate climate change adaptation measures into our projects, and achieve resilient infrastructure.

Our carbon footprint in Spain in recent years (tCO_2eq.):

2019	2020	2021
2,929	1,557	1,837

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. In addition to management, waste reduction policies are applied to eliminate (plastic bottles) and reuse (equipment).

Resource Consumption

TYPSA 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 2021 is still being affected by the pandemic. Covid measures forced us to continue with social distancing and ensure well-ventilated spaces, which prevented some employees from returning to the office. Certain consumptions were therefore favoured/affected by these measures. It is not possible to compare 2020 consumption savings and increases to 2021, since 2020 was an exceptional year.

Water (m^3)	2019	2020	2021
Spain	3,763	2,826	3,181
Peru	2,294	1,633	2,437
UAE	156	119	43

Paper (kg)*	2019	2020	2021
Spain	15,801	9,791	8,801
Peru	6,056	2,528	2,678
UAE	102	162	137
Mexico	1,334	1,805	2,684

Electricity (kWh)**	2019	2020	2021
Spain	1,707,002	1,607,796	1,737,884
Peru	248,440	216,700	254,783
UAE	55,196	38,606	37,438

* *Increased consumptions in Mexico are due to the growing number of people needed for the growing number of contract awards.*

** *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.*

Innovation

A Core Management Value: we base our services on knowledge and prioritise being at the forefront at all times.

56	13	16	5	2.1	2.5
ongoing projects	completed projects	new projects approved	TYPSA innovation awards	million euros invested (2021)	million euro budget commitment for 2022

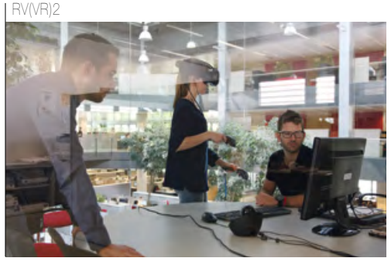
Participants in the First TYPSA Hackathon

- TYPSA's Digital Accelerator was created to support both our clients' and the Group's innovation development and digitalisation processes, a new fast-acting unit located in our subsidiary TEyS.
- First TYPSA Hackathon was held to explore the possibilities of combining BIM models with video game programming engines for the construction of digital twins.
- Second edition of the TYPSA Digital Talks discussion forum on digitalisation, under the theme 'Digital Boost'.

> **All projects are developed under our UNE 166002 certified R+D Management**

Strategic Research

RV(VR)2



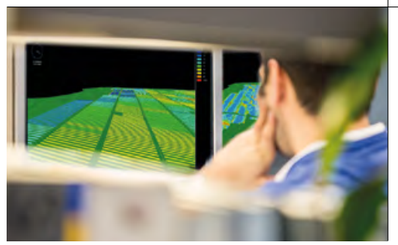
Going Digital and the Collaborative Working Environment

- **RV(VR)2:** second generation virtual reality methodologies and tools for the design of buildings and infrastructure. New inputs focused on including virtual reality in production processes.
- **BE-PYTHON:** Python for BIM design process automation for buildings.
- **BI-OPORTUNIDADES:** business intelligence tools for business opportunity analysis.
- **BIM-PM:** optimisation of processes to improve construction control and monitoring, further exploiting BIM-4D and developing new workflows.
- **AUTM.MFDI:** automation of BIM model federation and clash detection.
- **INFRAZERODT:** digital models as input data in infrastructure projects.
- **AP-MI-C3D:** BIM process automation for linear infrastructure design.

Sustainable and Resilient Cities and Infrastructure

- **PVGRAd:** 3D simulation tool for optimising solar plants. New algorithms for optimising earthworks and foundation pile lengths.
- **REDCONECT:** physical-mathematical modelling to resolve wind farm and solar photovoltaic plant grid connection issues.
- **PAGADAF:** innovative tools for digital twins with an urban wastewater treatment plant and an office building as demo projects.
- **BE-ACCESS:** virtual reality applied to accessibility and emergency evaluation in infrastructure and building projects.
- **SIMOV:** combined development of pedestrian and vehicle mobility simulations.
- **BIM-RAIDER:** augmented reality technology for use in the operation and maintenance phase of port infrastructure.

PVGRAd



Pagadaf

> **We design new solutions and services based on combining technical aspects and technology**

Consulting, Engineering and Architectural Excellence

- **PESTO:** People and Smoke Evacuation for Tunnels under Operation. New tool for combined evacuation and smoke studies to address tunnel fires.
- **MAESTRAL:** improvement and automation of wind generator structures.
- **ACOM-SR:** advanced constitutive models for soils and rock.
- **CFD-VENTILACIÓN:** computational fluid mechanics tools for ventilation design in large underground works.
- **ENHANCINGFRC:** optimisation of fibre-reinforced concrete design in tunnels and underground works.
- **GEO-PROB:** probabilistic analysis for the study of port foundations.

Pesto

CFD-Ventilación

Sustainable development

TYPSA contributes to Sustainable Development Goals (SDGs) through its policies and management systems, its business areas, and the TYPSA Foundation for Development.

We are making progress towards the 2030 Agenda through the knowledge and innovation, good business practices and social action of a leading engineering firm, strengthened by the creation of partnerships to bolster sustainability.

Our SDGs and main targets:

SDG 4 QUALITY EDUCATION and SDG 17 PARTNERSHIPS FOR THE GOALS

Targets we work towards

Target 4.3. By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.

Target 4.4. By 2030, substantially increase the number of young people 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.

UNILAC graduates

Pablo Bueno Sainz, President of the Fundación TYPSA, with Godefroy Upartho, rector of UNILAC, Monsignor Ayikuli Sosthène, Bishop of Mahagi and president of the Governing Council of UNILAC, and José Miguel Atienza, Director of the UPM School of Civil Engineering, during his recent visit to UNILAC. June 2022

Our commitment

Promote technical education in developing countries.

Achievements

- Gradual increase in the number of students in engineering faculties. The Foundation pays 50 % toward the cost of tuition fees.
- New access road to UNILAC (Lake Albert University, D.R. Congo) from Mahagi (3 km), with a sprayed seal.
- Teaching staff residence allowances in Mahagi to encourage staff to settle at UNILAC enabling students to learn without interruptions.
- Boreholes, an elevated reservoir and a distribution network to supply drinking water.
- Geotechnical soil laboratory set up at UNILAC. The basic instrumentation was donated by UPM and TYPSA.
- Permanent high speed internet service.
- Monthly on-line tutorials given by UPM professors.
- Good results in the local talent pool for Civil Engineering and Agronomy graduates in 2021. 80% of Civil Engineering graduates have been able to benefit from Foundation-promoted employment opportunities.

The Foundation's collaboration with the Universidad Politécnica de Madrid (UPM) in the UNILAC University project in Mahagi, won the 2021 UPM Annual Prize for Research and Innovation in the 'Public-Private Development Partnerships for Sustainable Development Goals in collaboration with the Polytechnic University of Madrid' category.

Indicator trends

UNILAC University, Mahagi (DRC)	2018-2019	2019-2020	2020-2021
Number of students	215	343	368
Number of scholarships	118	171	163

SDG 6 CLEAN WATER AND SANITATION

Targets we work towards

Target 6.3. By 2030, improve water quality by reducing pollution, eliminating dumping and minimising 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

Our water management services constitute one of TYPSA's main business areas and enable us to contribute directly to improving water availability, management and quality in the countries where we operate.

Achievements

Digitalisation in the WATER sector: BIM-iAGUA.

Our work as water engineering consultants helps strengthen efficiency in water management, with a special focus on the whole infrastructure life cycle. BIM methodologies enhance information management, optimise the use of materials and resources and facilitate operation and maintenance. TYPSA's growth in BIM capability therefore represents a significant milestone on the way to improving our contribution.

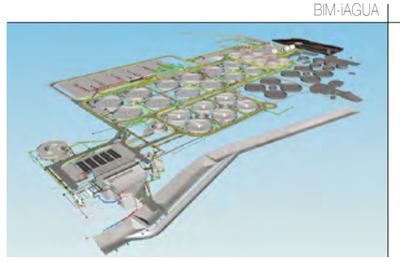
The BIM-iAGUA project, now completed, has driven the BIM implementation process in the Water Engineering Department by coordinating standards, identifying leaders in each specialist field, organising digital information and providing interoperability guidelines for information systems.

The project, in collaboration with the subsidiary company ENGECORPS, focused on strengthening BIM uses for treatment plant and drainage system design.

Building dam safety capacity in Spain.

Protecting people, property and natural ecosystems downstream of dams forms an essential part of operating system sustainability. The safety of certain dams is being affected by climate change, among other things, while at the same time their role is becoming increasingly important in coping with more frequent droughts and more intense floods. TYPSA Group has made a remarkable effort to expand its technical capabilities in dam safety inspections and risk analysis methodologies, currently working on more than 300 dams in Spain.

BIM-iAGUA



Irueña dam. Salamanca, Spain

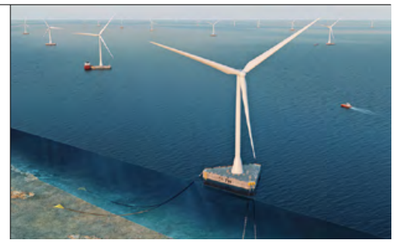
Indicator trends

Teams	2019	2020	2021
Number of people trained in BIM in the water sector	28	43	48
Number of people specialised in the management of dam safety and risk analysis projects	9	13	23

SDG 7 AFFORDABLE AND CLEAN ENERGY

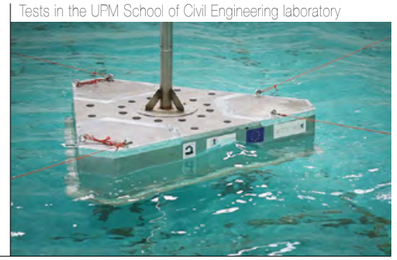
Target we work towards

Target 7.2. Increase substantially the share of renewable energy in the global energy mix by 2030.



Floating wind farm modelling. ARCHIME3

Tests in the UPM School of Civil Engineering laboratory



Our commitment

Back renewable and clean energy as energy generation business lines.

Achievements

Technology at the service of floating renewable energy systems.

The world's renewable energy sources may find new opportunities at sea, where wind is more readily available than on land. As an international authority in the wind sector, TYPSA has recently been steadily acquiring new technical offshore capabilities, developing innovative projects with gravity and floating foundations. Capitalising on wind energy in aquatic areas, this technology significantly increases the renewable energy that can be supplied to the grid.

R&D projects have helped tremendously to give impetus to these capabilities, by focusing on aspects such as the analysis of mooring systems in floating platforms for the installation of wind turbines in the sea through coupled wave-wind models. TYPSA has been collaborating with Beridi in the ARCHIME3 project, under the European Horizon 2020 innovation programme framework, to install a novel 1:2 scale floating wind platform. In parallel, another self-financed R&D project, FLOATYP-WIND, focused on optimising needed tools and calculation methodologies.

Floating platforms can also perform well as sites for photovoltaic solar energy, located, for example, in artificial lakes and reservoirs, avoiding other areas of land that may be more environmentally sensitive or destined for other uses. In addition, in the case of reservoirs with hydroelectric power plants, they can help to optimise the use of the existing grid connection since there is generally more solar radiation when there is less rainfall, and vice versa.

TYPSA has added skills to anchored floating platform design capabilities by providing technical solutions to ensure buoyancy, secure the anchoring system and make energy production compatible with variations in reservoir levels. Detailed engineering has been delivered for a floating solar park on Alqueva reservoir (Portugal) and basic engineering and permit processing services provided at a plant in a lagoon in the Muntenia region of Romania.

Indicator trends

Renewable energy activity	2020	2021
Number of renewables innovation projects	8	10
Renewable energy we design and install (in MW)	6,800	21,757

SDG 8 DECENT WORK AND ECONOMIC GROWTH

Targets we work towards

Target 8.2. Achieve higher levels of economic productivity 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.

Our commitment

Ensure respect for human rights, ethical business behaviour, integrity and equality, diversity and inclusion in TYPSA and its supply chain.

Achievements

- Corporate Responsibility and Sustainability Statement available on our website.
- Due diligence automation for partners and suppliers in commercial and operational phases.
- Company Risk Map update adopting the corresponding prevention and control measures.
- New business integrity and ethics, equality, diversity and inclusion requirements incorporated into our supplier audit system.

Marta Gutiérrez de Cabiedes, Juan Francisco Hernández Villada and Nacho Escudero

Indicator trends

Follow-up on supplier contracts	2020	2021
Percentage of contracts that explicitly accept our Code of Ethics	71 %	75 %

SDG 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Target we work 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.

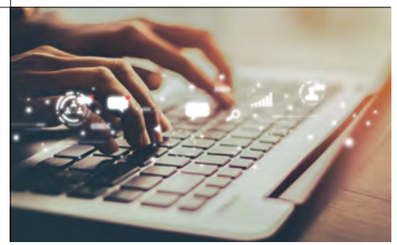
Achievements

Digital boost to our services.

Three concurrent actions were implemented to boost TYPSA Group's digital solutions.

The second edition of the Group's discussion forum on digitalisation, the TYPSA Digital Talks, was held under the theme 'Digital Acceleration'.

Wiwili Bridge, Nicaragua



TYPSA Hackathon winners

The **TYPSA Digital Accelerator** was created as a new fast-acting unit located in our subsidiary TEyS, with a mission to provide innovation and digitalisation support to our clients and to the Group itself.

The **First TYPSA Hackathon** was run both in-person and virtually, to explore the possibilities of combining BIM models with video game programming engines for the construction of digital twins. Six prizes were awarded for the teams' most outstanding work. In parallel, three round tables were held on Open BIM, digital twins and sustainability, on digital engineering and on the metaverse. An experimental virtual reality room was set up for TYPSA employees, while the Hackathon was broadcast on social media to open up the debates to a wider audience.

The Hackathon has helped form a team specialised in the construction of digital twins, contributing to the promotion of TYPSA Digital Accelerator digital services.

Indicator trends

Innovation projects	2019	2020	2021
Number of new R&D projects approved	11	13	17
Number of Digital Accelerator requests completed	-	-	23

SDG 11 SUSTAINABLE CITIES AND COMMUNITIES

Targets we work 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 urbanisation and capacity 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

New sustainable mobility tools.

TYPSA's contribution became a reality when three R&D projects were approved to develop new methodologies and tools for the detailed analysis of mobility in infrastructure and cities.

The **SIMOV** R&D project aims to generate methodologies for the combined analysis of vehicle-pedestrian mobility simulations to provide a holistic interpretation of mobility in shared spaces, addressing the constraints imposed by the use of very different tools and simulation algorithms.

BE-ACCESS R&D project is under development for virtual reality applications that assess and audit public infrastructure and building accessibility and emergency evacuation flows, especially in underground railway and metro stations.

In collaboration with the Madrid Regional Transport Consortium the **MICROSIMULATION** R&D project is developing new methodologies for mobility simulation in transport interchanges.

Sustainable Urban Drainage System (SUDS).

New SUDS milestones have been achieved thanks to the work of TYPSA's subsidiary, **Green Blue Management** (**GBM**), specifically in Spain.

In-house technical growth has been enhanced by the incorporation of new specific design and calculation software and the completion of the **SUDS-GIS** R&D project, which generated a GIS tool for selecting optimal SUDS implementation sites. Our teams have also reached outside the company, working with various municipal councils to draft Municipal SUDS strategies and Technical Guidelines focusing on standardisation, to help facilitate deployment of these technologies.

Indicator trends

Sustainable urban infrastructure improvement capabilities	2019	2020	2021
Number of sustainable city and infrastructure R&D projects	15	14	16
Number of people working exclusively on SUDS	3	6	7

SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Targets we work 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

New digital infrastructure management tools to extend the lifecycle.

Advances have been made in reality capture based on images and digital information processing, essential for the subsequent application of prediction algorithms. Better infrastructure and building condition monitoring using images is crucial for predictive asset maintenance, resulting in improvements in functionality, performance and a longer life cycle.

In this regard, the DRONES2 R&D project aimed at organising and expanding drone capabilities to be able to capture information for the design or technical inspection of buildings, facilities and infrastructure, reducing the carbon footprint associated with these tasks.

Subsidiary company INTEMAC launched two R&D projects: INTEMAC-AC and INTEMAC-IA, focusing, respectively, on applying the IoT and low-cost accelerometers to the structural dynamic behaviour analysis of buildings and bridges. They also leverage artificial intelligence for image recognition as a bridge inspection support tool to endorse maintenance and repair decisions.

Indicator trends

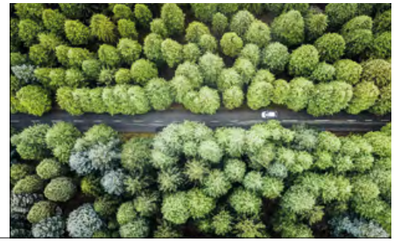
Infrastructure damage analysis	2020	2021
Number of structures analysed for treatment by artificial intelligence	10	550

SDG 13 CLIMATE ACTION

Targets we work 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

The CEO and senior management approved the TYPSA Sustainability Action Plan to enhance sustainability skills and competencies and incorporate them into engineering and consulting services. The Plan focuses on introducing climate aspects into infrastructure and building design, in particular addressing decarbonisation and resilience. The Action Plan will be in place during 2022-2023 with an initial 0.6 million euros in funding.

The implementation of the Plan includes a first phase of general sustainability training, available to technical staff on the in-house *TYPSA Learning* platform. In a second phase, people will be trained to obtain sustainability certifications applicable to infrastructure and buildings, and in a third phase, a design guide will be published with a special focus on decarbonisation (NetZero) and adaptation to climate change. It is estimated that sustainable design can deliver a 30% saving in GHG emissions.

Indicator trends

Specialised technical training courses	2020	2021
People with professional sustainability qualifications (*Envision, Leed, Breeam, Ceeqal, etc.*)	4	6

SDG 16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Target we work towards

Target 16.5. Substantially reduce corruption and bribery in all their forms.

Our commitment

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

Achievements

- Code of Ethics and Corporate Integrity Policy review and update.
- New Gift Policy
- Strengthened Compliance Function structure in charge of overseeing the Integrity Management System.
- Second ISO 37001 Anti-Bribery Management System follow-up audit passed and certified by AENOR.

Indicator trends

Average anti-corruption system self-assessment score (in % correct answers)	2019	2020	2021
Management	85.60 %	89.70 %	90.10 %
Other staff	85.89 %	86.88 %	90.60 %

2021 featured projects

Transport master plan and feasibility study for bridges over the Meghna River in Dhaka, Bangladesh

Bangladesh is a riverine country divided into three parts by the Jamuna, Padma and Meghna rivers. Rivers create a separation between the different regions of the national territory, triggering significant socio-cultural differences between local populations and unequal economic growth. Bridge construction therefore plays a key role in transport policy and in the country's development.

> **Boosting development through infrastructure and transport policies as part of VISION 2041**

The Bangladesh Bridge Authority (BBA) has launched the preparation of a master plan that will lay the foundations for the development of the transport network in the country. Feasibility studies will be conducted simultaneously for four of its major infrastructure works, namely the bridges over the Meghna River, on the Shariatpur-Chandpur, Bhola-Lakhnipur and Gajaria-Munshiganj roads, and the inner elevated ring road around Dhaka.

BBA has engaged TYPSA, in partnership with several national and international firms, to draw up the master plan and conduct the feasibility studies for these bridges. TYPSA is the consortium lead and is responsible for managing the whole project.

In addition, TYPSA is preparing the entire master plan, which involves extensive field work throughout the country's vast territory, transport modelling at national level and the identification, prioritisation and study of new transport project investments, as well as the analysis of potential sources of funding. TYPSA's input for the feasibility studies for the three bridges and the elevated motorway entails traffic studies, structural design, hydrological and hydraulic studies and all the economic and financial evaluations of the activities planned.

Both the master plan and the infrastructure feasibility studies are being executed at a crucial time for Bangladesh. The country is undergoing a process of solid and rapid development that is leading it to a key position in the context of the global economy. The VISION 2041 strategic plan provides the framework for much-needed planned transport policies accompanied by infrastructure investments that will boost the country's development and growth.

Widening the Autopista del Norte motorway in Tenerife, Spain

The Autopista del Norte, or TF-5, is one of the main communication routes between the Santa Cruz de Tenerife–La Laguna metropolitan area and the rest of the island, providing links to the main northern towns.

The typical cross section of the motorway consists of two carriageways while the number of lanes varies depending on the slope and volume of traffic on each section. From Los Rodeos airport onwards, each carriageway has only two lanes. In addition, there is a stretch of complicated terrain that gives

> **Modernisation and advanced communications technology,prioritising public transport**

rise to the so-called El Sauzal curves, which continue for 2 km. These are not the usual features of a high-capacity road.

The Canary Island Regional Ministry of Public Works and Transport decided to improve this section of motorway, engaging TYPSA, in partnership with a local engineering company, to prepare the designs to widen 21 km of the TF-5 to three lanes, between Guamasa, close to the airport, and La Orotava. Alternatives were analysed for the area of the El Sauzal curves, resulting in construction of a 1,200 m long bypass in a twin tunnel through quaternary volcanic rock, with considerable geological and geotechnical risks. Consequently, the project required a major geotechnical survey, a careful design including extensive safety measures, and provision for a rigorous construction procedure that considers all the risks.

In addition to the design, TYPSA is also conducting a study on the possibility of adding a 33 km bus-HOV lane with ITS technology (Intelligent Transport System). The dedicated lane would run between Santa Cruz de Tenerife and Puerto de la Cruz and would operate depending on the level of motorway congestion. In particular, buses would not only cease to disrupt road efficiency but would also offer collective public transport that enhances inter-urban mobility.

Interstate I-10 - SR-143 System Traffic Interchange in Phoenix, Arizona

Arizona Department of Transportation (ADOT) is executing the largest urban freeway reconstruction project in its history with the I10 Broadway Curve Improvement, which runs along 11 miles (17.7 km) of Interstate 10 between Loop 202 (Santan/South Mountain Freeway) and I-17 near Phoenix Sky Harbor International Airport. On an average weekday, nearly 300,000 vehicles travel through the I-10 Broadway Curve making it a critical connection for the regional freeway network in Phoenix.

The reconstruction is being carried out as a 'design-build project' and TYPSA Group, through its subsidiary AZTEC, together with two other prestigious engineering companies, is preparing the final design for the JV developing it under a 'Public-Private Partnership' scheme.

This large-scale project consists of widening the I-10 to six general purpose lanes and two high occupancy vehicle (HOV) lanes in each

> **Improved regional mobility and access to business districts through public-private participation**

direction between US 60 (Superstition Freeway) and I-17, directly connected to SR 143, plus a fourth lane in each direction, between Ray Road and US 60. Parallel collector/distributor roads are added to the I-10 between Baseline Road and 40th St. to separate I-10 traffic from local traffic. All this involves replacing the Broadway Road Bridge and 48 Street Bridges on the I-10 and widening the I-10 Bridges over Salt River. New bridges for pedestrians and cyclists will be built over the I-10 between Baseline and Broadway Roads, and the Sun Circle Trail crossing at Guadalupe Road will be improved.

AZTEC is executing the design segment for south-to-east and west-to-north traffic movements, including an embedded high-occupancy vehicle ramp (HOV), which requires the complete reconstruction of the Interchange ramps, the mainline and crossroads to make the DHOV flyover ramp fully operational. Efforts include two miles of I-10 and SR 143 freeway reconstruction, 0.5 miles of arterial streets, one diamond interchange, 10 bridges, 12 interchange ramps, on/off site drainage system, lighting, signing/marking, landscaping and major utility relocations.

Specialised bridge and structural engineering services for the Ministry's (MITMA) Directorate General for Roads in Spain

TYPSA Group, through its subsidiary MC2 Estudio de Ingeniería, is delivering specialised bridge and structural engineering services to the Directorate General for Roads, under Spain's Ministry of Transport, Mobility and Urban Agenda (MITMA).

This is an ambitious project that reviews the designs of existing outstanding structures, studying modification proposals and analysing any issues that may arise during bridge construction and service life.

In addition, TYPSA is providing support to the Technical Directorate of the Directorate General for Roads to develop policies and regulations applicable to structures. Several guides and recommendations have already been developed and large numbers of participants have attended technical awareness workshops.

> **Optimising outstanding structures, providing policy and regulatory support to the Spanish Ministry of Transport, Mobility and Urban Agenda (MITMA)**

Eglinton Crosstown West Extension in Toronto, Canada

Toronto's transit system has been rapidly expanding in recent years, with investment expected to reach 28.5 billion Canadian dollars (19.3 billion euros) over the next 10 years. Two regional public entities *Metrolinx* and *Infrastructure Ontario*, have been leading delivery for the Ontario Ministry of Transportation.

One of the key features of the expansion is the Eglinton Crosstown line west extension, which is expected to carry 31,000 passengers a day and achieve an annual reduction in greenhouse gas emissions of 39,000 tonnes. The project is part of a 33 km continuous connection that will create an LRT line along Eglinton Avenue, between the east and west of the city, and significantly improve road traffic.

A fundamental part of the extension is the 6.3 km long twin-tunnel, which will be the backbone of the total 9.2 km long extension. TYPSA is a member of the team responsible for the design of the Advanced Tunnel Project, which includes the twin tunnel and associated structures, as well as road remodelling at Scarlett Portal.

This twin tunnel has an inner diameter of 5.75 m and is being excavated with two EPB boring machines. It runs from the future Mount Dennis station to Renforth Drive, through an urban area where the water table is at surface level and rocky terrain alternates with soils. One of the challenges of the project is the existence of two sections, each half a kilometre long, with a mixed rock-soil face, a feature that complicates TBM operation. The project also includes the design of a launch shaft, the TBM extraction shaft, a short cut and cover section and the headwalls of the future stations and emergency shafts.

> **Large tunnel construction experience applied to the improvement of urban transportation in Toronto**

TYPSA is in charge of design and certification of the main tunnelling construction activities, namely the excavation, lining segments, cross passages and subsidence analysis, and is participating in geotechnical and structural engineering.

Reopening of Somport railway tunnel in Spain

> **Rehabilitation of the cross-border connection for passengers and freight between Spain and France**

Spain's Ministry of Transport, Mobility and Urban Agenda (MITMA) engaged TYPSA to study the reopening of Somport Tunnel, which would allow international passenger and freight traffic between Spain and France to be re-established on the Zaragoza-Huesca-Canfranc-Pau line, linking the regions of Aragon and Nouvelle-Aquitaine. The line forms part of the trans-European transport network and therefore falls within the framework of European network actions.

Somport and the central cross-border Pyrenean tunnels share a history going back to the 1850s that culminated in the construction and inauguration of Somport Tunnel in 1928. Service was interrupted in 1970 when the line closed on the neighbouring French side. The reopening is intended to provide a new trans-Pyrenean link in addition to the two existing border crossings at Hendaye and Portbou.

The single-track, 5 m wide, horseshoe-shaped tunnel is almost 8 km long, absolutely straight and has a maximum gradient of 3.4%. The original lining remains practically intact.

The tunnel provides an escape route for the road tunnel opened between the two countries in 2003, serving a key function that distinguishes it from other tunnels in the Spanish railway network. The study is also looking at ways of enabling tunnel operation to coexist with continued Canfranc Underground Laboratory activities. The laboratory was built in the tunnel where the mountain provides maximum coverage, taking advantage of the special conditions created for conducting tests that require strict protection from cosmic radiations.

To date, TYPSA has completed surveys on the current condition and existing railway infrastructure and is now examining the actions needed to reopen the tunnel and assessing their environmental impacts. The company's experts are also analysing tunnel management, operation and governance.

Runway rehabilitation at King Khalid International Airport in Riyadh, Saudi Arabia

The Authority responsible for King Khalid International Airport in Riyadh, Saudi Arabia, has undertaken the rehabilitation of the airport's runways and taxiways, engaging TYPSA to prepare the detailed design for the necessary works.

The airport, one of the largest in the world, is 35 km from Riyadh, and comprises five terminals and two runways, each 4,205 m long and 60 m wide, providing international connections to major cities in the Middle East, Asia, Europe and the largest countries in America, such as the United States, Canada and Brazil. With a total of 210,000 operations per year, it is ranked among the world's leading airports by ICAO.

The aim of the project is to refurbish and upgrade the pavements on the two existing runways, 15R-33L and 15L-33R, on taxiway A, parallel to the secondary runway, and on 30 entry and exit taxiways (A, G and H at the ends of the runway, and entry and exit taxiways G1 to G7, A1 to A7 and H1 toH4). These actions will maintain safety levels and optimise the operational efficiency of the airport.

Works involve demolishing the existing pavement, levelling, earthworks and new pavement foundations, pavement markings, and designing and implementing a new FOD detection system at the airport. The end-of-runway safety zones (RESA) and the surroundings of the taxiways to be rehabilitated will also be improved.

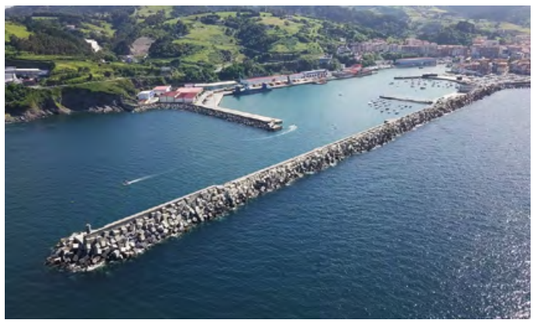
Runway improvement and rehabilitation making airports safer and more competitive

In addition, the project will rebuild the old AGL duct banks and study the redesign of Category II aeronautical ground lighting (AGL) on the runways and approaches, together with all runway and taxiway signs and markings.

Breakwater reinforcement in Basque Country ports in Spain

In recent years, episodes of extreme wave events and other climate-change induced weather phenomena have been becoming increasingly frequent. The year 2014 marked a turning point, when a series of storms recorded such energy and destructive power that port and coastal infrastructure was damaged along the entire Cantabrian coast.

TYPSA prepared the designs to reinforce the breakwaters in several Basque Country ports (Bermeo, Ondarroa, Orio, Zumaia, Getaria, and Hondarribia) to address this scenario. Sea level rises due to the effects of climate change were considered as a design component, entailing greater design wave heights and higher overtopping levels.



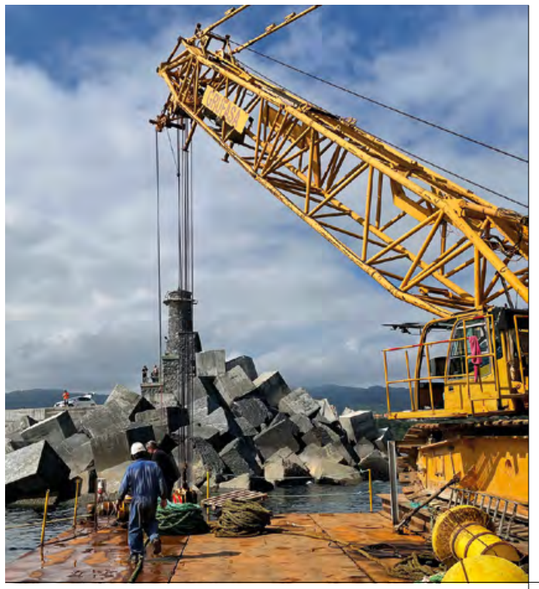
Construction supervision included breakwater reinforcement in the port of Bermeo, where siderurgical aggregate was incorporated during concrete manufacture to produce high-density concrete blocks. The use of this type of concrete achieves a positive environmental impact by reducing calcareous aggregate and creating value from electric furnace steel plant waste.

The key Bermeo breakwater reinforcement features are:

- 40 t blocks with a density of 2.75 t/m^3 on both the main armour layer of sections 1, 2 and 3, and on the inner slope.
- 60 t blocks with a density of 2.90 t/m^3 on the main armour layer of section 4.
- 80 t blocks with a density 2.90 t/m^3 on the breakwater roundhead.
- Crown wall increased by 1.5 m, giving it more weight and 'stitching' it to the breakwater with micro piles providing monolithic action.

Another interesting case is the reinforcement of the breakwater in the port of Ondarroa, in Bizkaia, home to the largest deep-sea fishing fleet on the whole Basque and Cantabrian coast. The solution involved two breakwater alignments and a complex bathymetry configuration, and also addressed rocky shallows that play a particularly significant role in wave action behaviour. The design was therefore tested in a physical model in the Polytechnic University of Madrid laboratory facilities, within the framework of the research agreement signed between TYPSA and the Agustin de Betancourt Foundation.

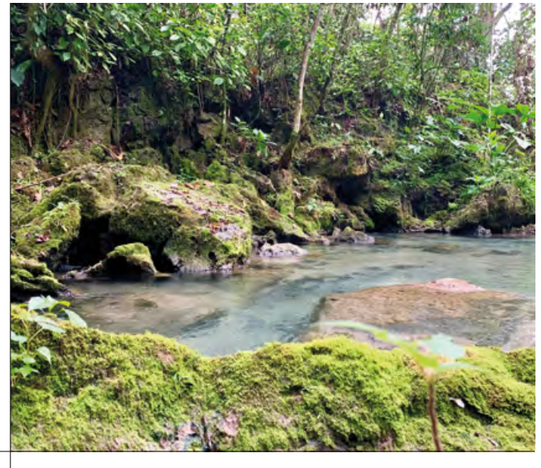
Reinforcing port infrastructure in response to extreme events caused by climate change



Financing water resources plans and programmes in Peru

Peru's National Water Authority is modernising its Water Resources Management Systems to address the disappointing results obtained so far, which have been largely due to insufficient funding and the absence of an adequate monitoring and evaluation system. The Water Authority set up a Modernisation Project Executing Unit which awarded TYPSA the contract to provide advisory services to strengthen and implement financing mechanisms for Integrated Water Resources Management Plan programmes and projects in this Andean country.

> **Implementing financing mechanisms for Water Resources Management Plans**



Financed with a World Bank loan, the contract sets out to enhance the capacities of the institutions responsible. Advisory and training services will be provided to the management agencies of six pilot basins located along the Pacific coast of Peru to achieve environmentally sustainable water use and ensure integrated and participatory management.

TYPSA is acting as strategic advisor to the National Water Authority and to the Puyango-Tumbes, Chira-Piura, Chancay-Lambayeque, Chancay-Huaral, Quilca-Chili and Locumba-Tacna River Basin Councils, to enhance and enable financing mechanisms for the priority programmes and projects in their respective plans.

TYPSA Peru's specialists in water resources planning and management and public participation are working on the study together with Infrastructure Advisory Division specialists in infrastructure financing. The contract's specific goals are to:

- Define the financing strategies for existing Basin Plans.
- Build the River Basin Councils' operational capacity and knowledge of financing mechanisms and sources.
- Identify existing national and international financing sources and mechanisms to achieve the implementation of priority programmes and projects.
- Design financial and fiscal mechanisms to finance these programmes and projects.

Desalination and wastewater treatment plants in Saudi Arabia

The Saudi Arabian government has launched an ambitious project to guarantee drinking water supply and wastewater treatment across large parts of the country, aiming to improve social well-being and citizens' quality of life. As a UN member state, Arabia is committed to achieving Sustainable Development Goals (SDGs) and their corresponding targets, in particular Goal 6 'Water and Sanitation', to ensure the availability and sustainable management of water and sanitation for all.

The Saudi Water Partnership Company (SWPC) plans to grant concessions for the construction and operation of a total of 14 desalination plants and 12 wastewater treatment plants, through public-private partnerships, aiming to attract investors from all over the world.

Engaged by SWPC, TYPSA is delivering the necessary engineering services to manage and control the concession contracts under

a framework agreement with an estimated duration of 5 years. Services to supervise Jubail 3A and Yanbu 4 desalination plants, which have a daily production capacity of 600,000 m³/day and 450,000 m³/day respectively, had already started in 2021.

The 14 desalination plants will produce a total of almost 6 million m³ of drinking water per day. Three of them will have a net capacity per unit of 600,000 m³/day. Wastewater treatment capacity will

Water supply and treatment to achieve Sustainable Development Goals

reach almost 1.5 million m³/day, one of the treatment plants achieving 375,000 m³/day.

In both cases, desalination and water treatment, modern and efficient state-of-the-art technology will reduce consumptions and increase production.

Desalination plants will use reverse osmosis technology, in some cases combined with photovoltaic plants to reduce specific energy consumption. Treatment plants will use innovative systems, such as Nereda technology or continuous flow SBR, introducing cogeneration systems in some plants to achieve improved energy efficiency and consumption.

Protecting watercourses from extreme weather events in Peru

Peru is located in a region where the topography, climate and geology vary considerably and it is highly exposed to the risk of natural disasters, which, due to climate change, are steadily increasing both in intensity and frequency. The 'El Niño' phenomenon generates extreme precipitation events that invariably lead to severe flooding.

The rivers on the Peruvian Pacific slope do not have sufficient capacity to contain the extraordinary flows produced by floods,

River engineering for flood control and actions in vulnerable river basins

which, coupled with a lack of early warning systems, frequently result in numerous human and material losses.

TYPSA, in coordination with the Authority for Reconstruction with Changes (ARCC), is preparing detailed engineering designs for reconstruction projects to repair damages and implement the necessary protection measures to provide solutions for the vulnerable sectors affected.

The result is the design and implementation of an integrated stormwater management system that combines the capacity of natural watercourses in the upper, middle and lower watersheds with the associated drainage systems. Rainwater and river flows can thus be successfully and safely discharged into the sea, preventing damage to material assets and risk to human lives and generating resilient and sustainable water infrastructure.

Projects are in progress on several rivers, namely along 77 km of the Casma River, and on the Huarmey (50 km), Cañete (31 km) and Huaura (18 km) Rivers. Construction includes defence systems such as rocks, gabion walls, riverbank reforestation and other protection techniques, designed for return periods between 50 and 200 years, depending on whether they are in rural or urban areas. Associated public spaces (viewpoints, riverside forests) are also being created as well as solutions to provide connectivity with neighbouring urban areas, landscapes and archaeological sites.

Torre de la Esperanza (Tower of Hope) at San José National Children's Hospital in Costa Rica

Dr. Carlos Saenz Herrera National Children's Hospital is a paediatric hospital located in San José, capital of Costa Rica. As one of Costa Rica's principal state hospitals, it caters for all areas of paediatrics, dealing primarily with particularly complex cases that cannot be treated at the country's other health facilities.

Founded in 1964, the hospital facilities include the *Torre de la Esperanza* (Tower of Hope), also known as the *Critical Care Tower*. Now, the much-needed facility upgrades and extension, which began to take shape as a project more than a decade ago, are about to become a reality. The project will be managed under a Trust, a legal entity constituted by the APHNN (Association

Project management capabilities enhancing the health care sector with a new paediatric hospital

Pro Children's Hospital), the CCSS (Costa Rican Social Security Fund) and the BNCR (National Bank of Costa Rica).

The project features an 11-storey tower located on an 8,770 sq m plot, with a gross floor area of 39,430 sq m, 10,000 of which are on three basement levels. Investment is estimated at 113 million dollars.

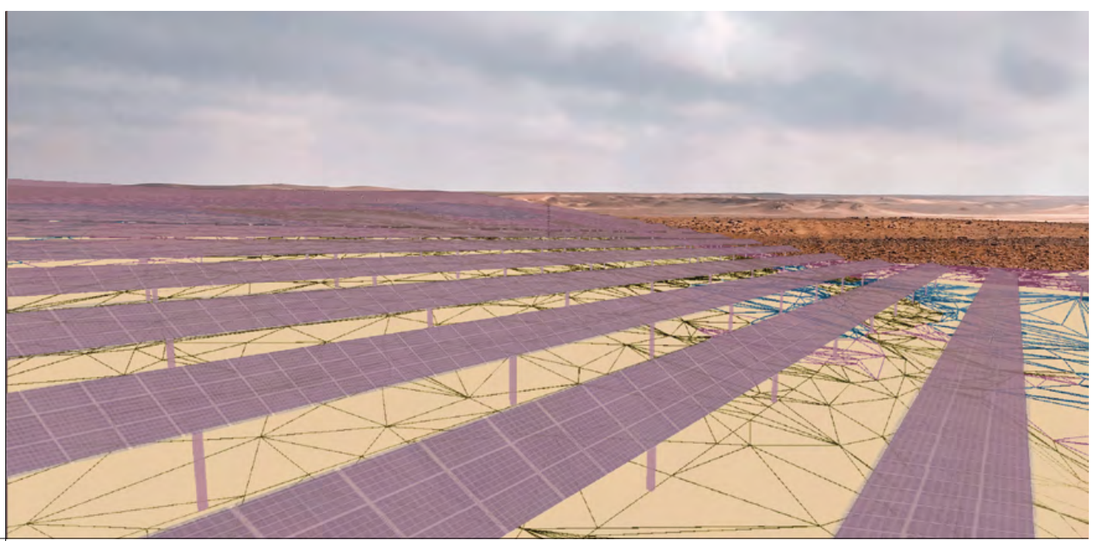
As project manager, TYPSA is leading the project and the UTE TORRESPERANZA joint venture, the end client being the Trust. Tasks include providing project and construction management services comprising scheduling, preliminary studies and medical equipment planning. TYPSA will also manage the 'turnkey'

procurement process that involves detailed design, construction, equipping, and 30-year operation and maintenance. The scope does not include services such as land acquisition management and demolitions on the building plot.

The Tower will house intensive care units (ICU), a surgical block, burns unit, medical emergencies, Neonatal ICU, pharmacy, trauma unit, cardiac ICU, medical imaging, a helipad, and other administrative and logistical support services. New projects for research and training in the various specialist medical areas are also expected to be developed and implemented.

Al Mowayh and Haden solar plants in Saudi Arabia

The National Renewable Energy Programme is part of the Saudi *Vision 2030* strategy that aims to increase the share of renewable energy production by 50%, achieve a balance in the local energy mix and fulfil obligations towards reducing carbon dioxide emissions.



Within this framework, the Ministry of Energy engaged TYPSA to undertake feasibility studies of two photovoltaic plants with a total capacity of 1,800 MW located on 60 km2 of undeveloped desert land, which is optimum for implementing these facilities. The plants will be able to generate up to 5,000 GWh a year for more than 25 years; sufficient to meet the needs of over 230,000 households. The energy produced will be fed into the Kingdom's national grid, reducing the use of fossil fuels and greenhouse gas emissions by an estimated 5.4 million tonnes of CO2 a year.

More than 4.5 million photovoltaic modules will be installed. These will be divided into several 'subplants' each with a dedicated high-voltage substation that will collect energy from all the modules and inverters. Each of these substations will be connected to another substation to be developed by the Saudi Electricity Company (SEC), which in turn will be connected to the national grid for electricity export.

TYPSA is working on the design from greenfield stage to request for proposal, which includes conducting the preliminary site assessment, assessing hydrological, geological, and social and environmental impacts, and preparing the master plan for the plants. In a second phase, the preliminary design will be developed, energy productivity at the plant evaluated, and the necessary permits and authorisations obtained.

> **Solar energy to reduce emissions and boost sustainability strategies**

GECAMA wind farm in Cuenca, Spain

GECAMA (acronym of Castile-La Mancha Wind Generation in Spanish) wind farm has an installed power of 329.2 MW and a power export capacity of 300 MW at the grid supply point. Operated as a single generation facility, it is the largest wind farm set up to date in Spain. The farm received government authorisation for construction from the Ministry for the Ecological Transition in June 2020 and work began in November of that year.

Occupying an area of approximately 8,000 hectares, the farm is located in the province of Cuenca, between the municipalities of Honrubia, Atalaya del Cañavate, Cañada Juncosa and Tebar. The farm is made up of 69 wind turbines each with a power of 4.8 MW. The concrete tower has a hub height of 120 m, and the 149 m diameter rotor brings the total height of the wind turbine to almost 200 m.

TYPSA is providing Owner's Engineering, Project Management and Construction Supervision services to the wind farm owner. Services include detailed engineering review, construction supervision, environmental and archaeological monitoring as well as health and safety coordination. In addition, TYPSA is coordinating operating permit procedures and liaising with the Spanish electricity grid (REE) to obtain authorisation for infrastructure energisation, grid feed-in and the commercial operation of the power plant, scheduled for mid-2022.

Spain's largest wind farm will supply clean energy to 260,000 households and prevent the emission of 150,000 t of CO_2 per year

Construction of the farm involved creating and upgrading some 68 km of access roads, excavating more than 126 km of trenches to accommodate the 33 kV medium voltage underground cable network and installing two 33/132 kV transformer substations, from which energy is exported through 132 kV underground lines to a main 132/400 kV step-up substation. From this substation, all the energy produced is transported 50 km via a 400 kV overhead line to the connection point at the REE substation in Minglanilla.

A significant component of the project is the strict monitoring of environmental impacts and tight control of corrective measures, which include marking and tracking the birds in the area and introducing bird anti-electrocution protection systems.

Support to reactivate post-earthquake production in Ecuador

In 2016, Ecuador experienced an earthquake measuring 7.8 on the Richter scale that hit the coasts of Manabí and Esmeraldas, killing a total of 677 people, injuring 6,274 and displacing 80,000. The tremor also destroyed thousands of homes and caused severe damage to public infrastructure, leading to the loss of more than 20,000 jobs. The estimated cost of reconstruction and economic recovery amounted to $3,350 billion.

In response to the disaster, the European Union offered International Technical Assistance to the Ecuadorian government to support the national institutions involved in post-earthquake production reactivation.

International experts from AGRER and TYPSA have been delivering technical assistance on the ground since early 2018. Services are scheduled to be completed in 2022 and are provided through short-term missions in the field of diagnostics, improvement planning and development policy implementation, in areas as diverse as fisheries, agriculture, livestock, tourism, the agro-industrial sector and solid waste management.

These missions seek to promote cooperativism and associativity within a framework of solidarity and sustainability as the most effective means of overcoming the effects of the earthquake and reactivating production.

The 'Post-earthquake Production Reactivation Agenda' has focused on 4 strategic axes, namely: access to formal financing; associativity strengthening; attracting investment and encouraging new enterprises; and increasing productivity, competitiveness and the introduction of innovation processes.

Implementing well-planned policies in response to natural disasters

Improving the governance of resilience, food and nutrition security and sustainable agriculture in West Africa

In an effort to address the challenges of food and nutrition insecurity, 15 West African countries have grouped together under the aegis of various regional inter-state networks and institutions (CILSS, ECOWAS and WAEMU) to prevent and combat future food crises. These agencies and their member states have implemented the policies, strategies and programmes required to ensure food and nutrition security in these countries.

In support of these efforts, the European Union has been funding the PAGR-SANAD project since 2018 to improve the governance of resilience, food and nutrition security, and sustainable agriculture in West Africa. Financed by the 11th EDF, with a

budget of EUR 20.35 million, this is the first international donor support provided to West African and Sahelian institutions and to regional producer organisations.

Governance and capacity building to combat Africa's food crisis

TYPSA Group, through its subsidiary AGRER, has been providing technical support to the PAGR SANAD project for the last four years. Long-term experts joined the project to prepare diagnostic reports and conduct studies on food and nutrition security, allowing beneficiaries to identify key indicators for strengthening improved food and nutrition security governance in the area.

This technical input has underpinned food and nutrition security policies and actions and enhanced methodological and political capacity building for the three beneficiary institutions and for the West African Farmers' and Producers' Organizations Network (ROPPA). Technical support services will continue for a further 20 months as a result of the successful outcomes thus far.

Technical support for the preparation of investments in the transport sector in Montenegro

Montenegro has been a European Union candidate country since 2010, but its infrastructure is far from meeting European standards. Although the road network is extensive, the construction of new motorways is considered a national priority since they are a key contributor to uniform regional economic development and enhance the country as a tourist destination. The rail network, while partially rehabilitated, is limited and some of the lines have fallen into disuse. The country has two airports with traffic of about two million passengers/year while the main port infrastructure is the port of Bar, which operates below its capacity for 5 million tonnes of cargo.

The Montenegro Public Works Agency, with European Union funding, engaged TYPSA in partnership with another prestigious engineering firm, to evaluate and prepare transport infrastructure investment projects considered by the government of Montenegro to be a priority for the socio-economic development of the country and its future incorporation into EU institutions.

This technical assistance contract is expected to improve the quality, efficiency and safety of Montenegro's transport systems, seeking alignment with European standards and interconnection with neighbouring EU countries.

The scope includes conducting technical studies and field campaigns, preparing designs and tender documentation and providing support to the contracting authorities, as well as relevant training for the officials in charge.

Planning and improvement of transport infrastructure in readiness for joining the European Union

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