

WATER ENGINEERING

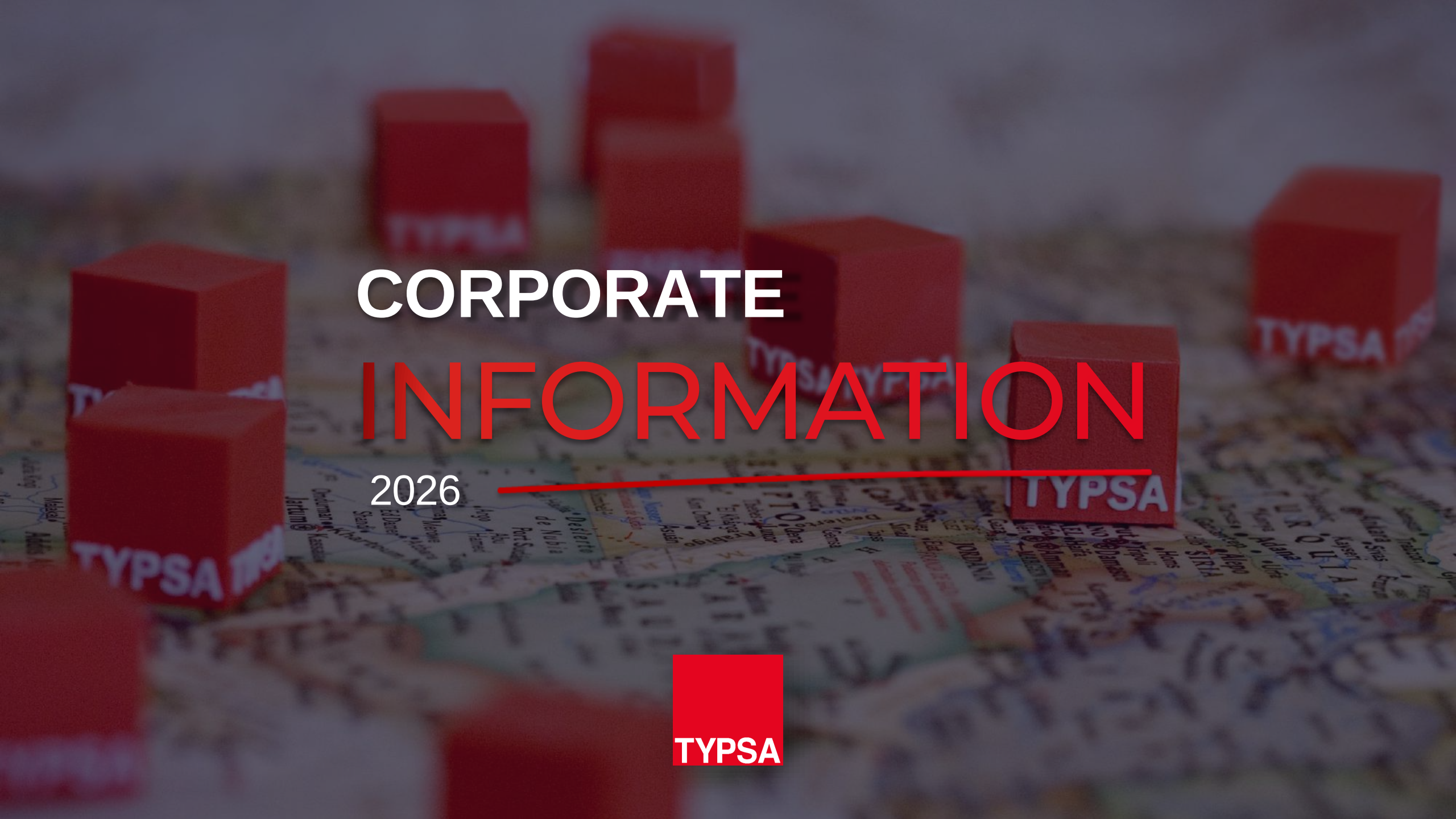
Dams and reservoirs



Global solutions based on knowledge

We are accelerating investments in infrastructure,
buildings, and sustainable cities.





CORPORATE

INFORMATION

2026



■ 60 years of **experience**

Committed to the highest standards of integrity and professionalism.

100%

Independent

Employee Ownership

Fighting against corruption

Certified Integrity Management System .



Since 2022

Customer Satisfaction

8.7/10

Average score

94.7%

Rate our work
higher than that of
our competitors



Since 1996

Equality on the Board

6 men

4 women

Equality and Work -Life Balance Plans

■ **Balanced regional distribution** of revenue

We operate as a single company on a global scale.



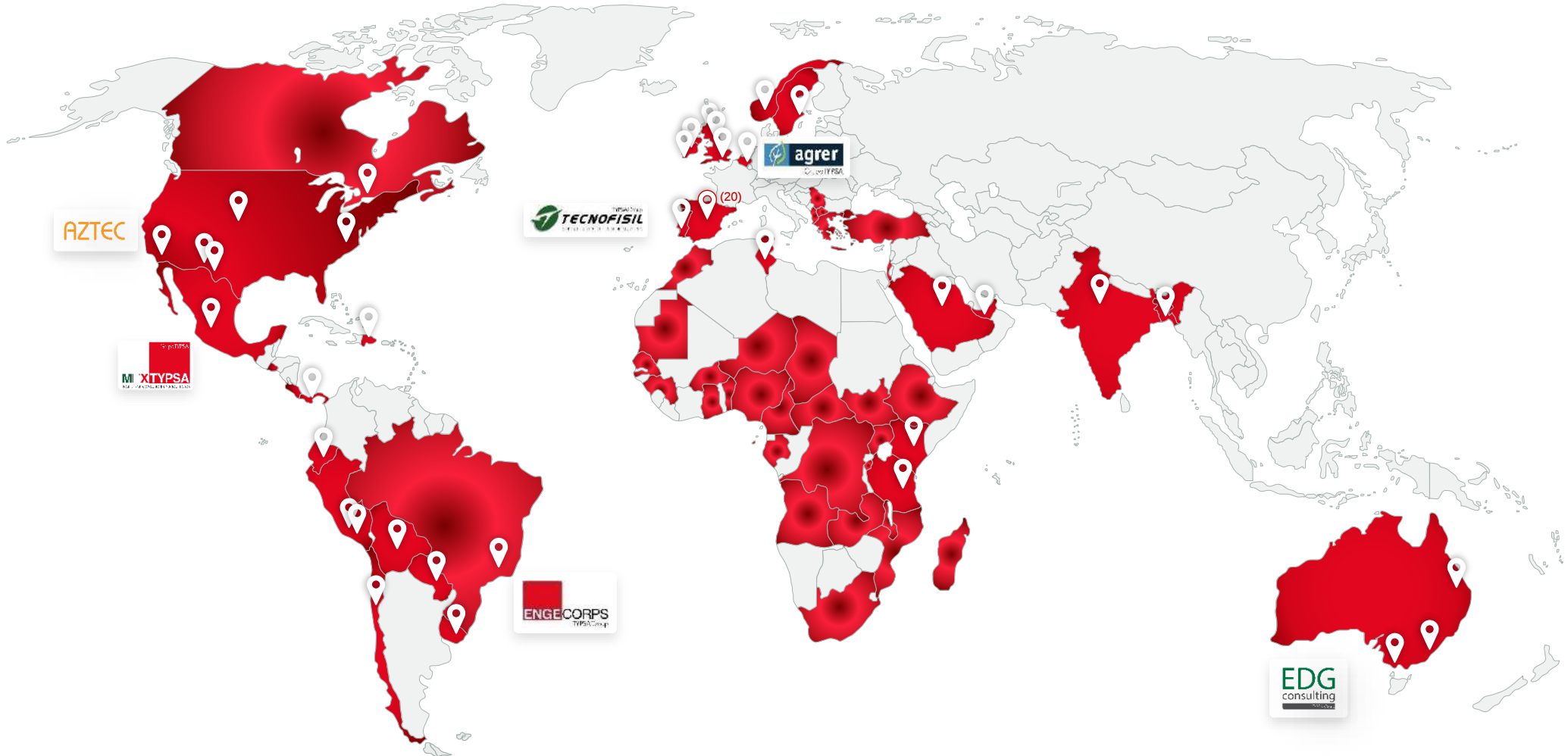
■ Experience in 125 countries and 56 permanent offices

No. 44 in the 2025 ENR Ranking* International Design Firms.

*Engineering News -Record

Canada
USA
Mexico
Dominican Rep.
El Salvador
Costa Rica
Panama
Ecuador
Peru
Brazil
Bolivia
Chile
Paraguay
Uruguay
Sweden
Norway
Ireland
United Kingdom
Belgium
Portugal
Spain
Albania
Serbia
North Macedonia
Greece
Turkey
Morocco
Mauritania
Senegal
Guinea

Burkina Faso
Ghana
Benin
Niger
Nigeria
Cameroon
Central African Republic
Gabon
São Tomé and Príncipe
Tunisia
Chad
D.R. Congo
Angola
South Sudan
Ethiopia
Uganda
Kenya
Burundi
Tanzania
Zambia
Malawi
Mozambique
South Africa
Madagascar
Israel
Saudi Arabia
UAE
India
Bangladesh
Australia



ENR Ranking

TRANSPORT	Nº 25	 Airports Nº 15	 Mass transit and rail Nº 15	 Brindges Nº 18	 Roads Nº 19	
WATER SUPPLY	Nº 27	 Dams Nº 15	 Transmission lines and aqueducts Nº 16	 Dams and reservoirs Nº 19		
SEWER/WASTE	Nº 23	 Wastewater Treatment Nº 15				
BUILDING	Nº 48	 Sports centers Nº 6	 Hotels Nº 17	 Educational centers Nº 22	 Offices Nº 23	 Retail Nº 23
ENERGY	Nº 49					



MEX TYP SA

2026



■ TYP SA

An independent group of companies providing services in the following areas:

- Engineering
- Architecture
- Consulting
- Infrastructure
- Energy
- Environment
- Cities

■ MEXTYPSA

Mexican subsidiary of TYP SA Group and **production** center for projects in Mexico, Central America, and the Caribbean .
Officially established in:

2009



Additional information is available on our [website](#).



MEXTYPSA



MEXTYPSA contributors



Staff

458 employees .



Oficinas en

- Mexico City
- Querétaro
- Atizapán

- **Consulting, engineering, and architectural** services that improve quality of life through the built environment.



Transport Infrastructure

Railway Engineering



Roads



Supervision of Transportation Infrastructure Works



Strategic Infrastructure Consulting



Transport and Mobility Planning



Buildings and Cities

Airports



Integrated Management



Architecture



Urban Development



Water

Hydraulic Works



Ports and Coasts



Urban Networks and Treatments



Energy

Wind power



Solar



Lines and Substations



Environment

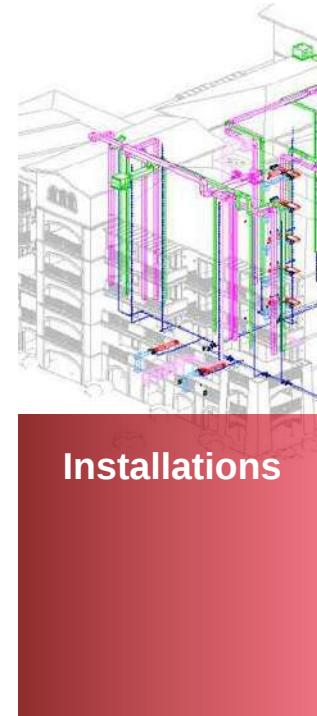
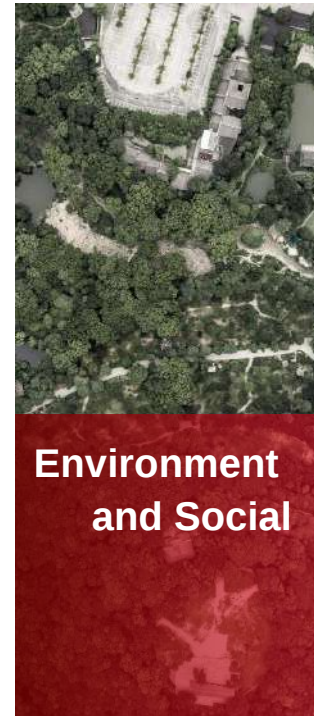
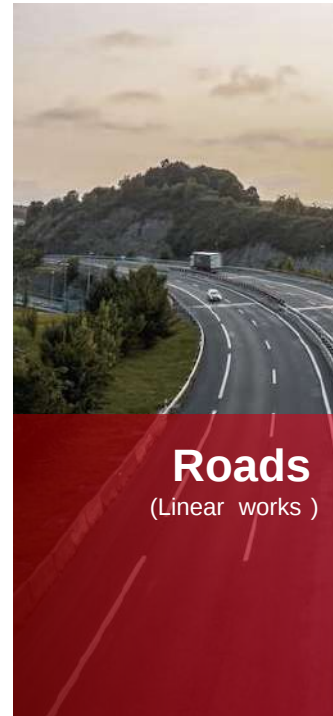
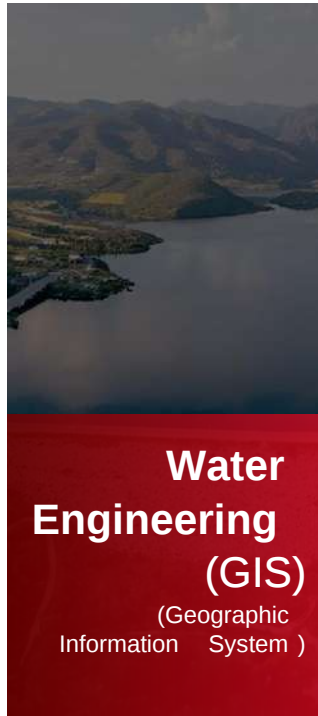
Sustainability and Environmental



■ Consulting, engineering, and architectural services

that improve quality of life through the built environment

Specialties



■ Consulting, engineering, and architectural services

Tender

- Conceptual projects
- Preparation of tender documents
- Assistance in the tendering and award process

Project Development

- Project Management and Coordination
- Preliminary designs
- Basic designs
- Construction designs
- Detailed engineering

Studies and Planning

- Master plans
- Feasibility studies
- Environmental and mitigation studies
- Social impact and public participation studies
- Economic and financial studies of investments
- Studies of concessions and PPPs

Construction and Operation Supervision and Management

- Construction supervision
- Health and safety coordination
- Comprehensive construction management
- Maintenance and operations management

Acciona
ALDESA
ALEATICA
ANADIE (Guatemala)
Grupo Aeroportuario
del Pacífico

**Banco Nacional de
Obras y Servicios
Públicos (BANOBRAS)**
Banorte
Bosque Real
Grupo BBVA

Canadian Solar
**Comisión Nacional
del Agua (CONAGUA)**
Compass Group
Concesionaria
Bicentenario
Cimesa
COPEXA

Dhamma Energy

Fermaca
Ferrovia Agroman
Fonatur
Formula E

EDP Renewables
EcoSolar
ENEL

GIA
Global Energy
Services

Hill International
HERMES
HYCSA
HKS

MAPFRE
MARHNOS
Mexican Renewable

ICA
Isolux Corsán
IBERDROLA

RCO-ABERTIS
RUBAU
ROADIS

Our Clients

Committed to the highest **quality** standards.

Sacyr
**Secretaría de
Infraestructura
Comunicaciones y
Transportes (SICT)**
SunEdisonSunPower

**PRONACOM
(Guatemala)**

Quantum

NorthLand Power

Zuma Energía

Voltalia Group
VESTAS
Valorán (META)
VISE

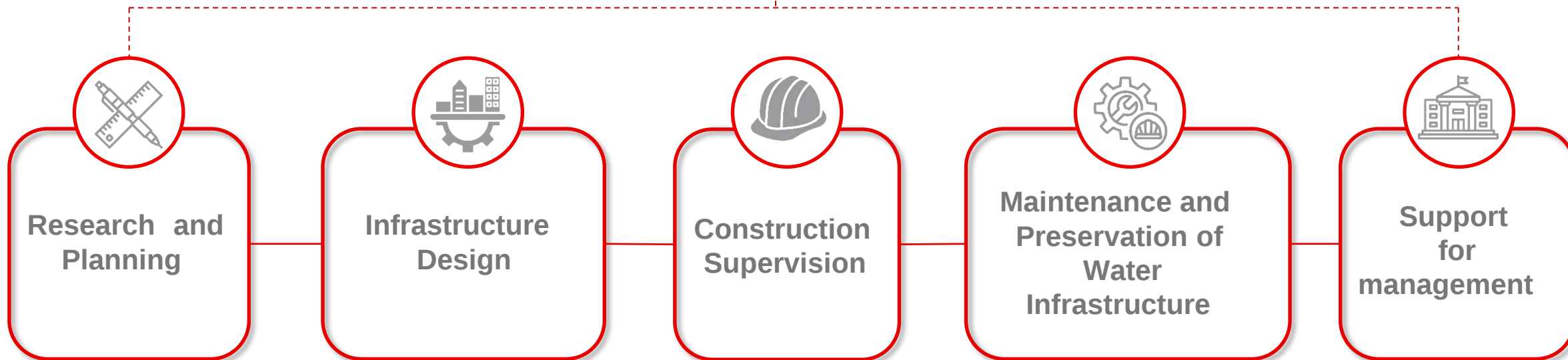
WATER ENGINEERING

2026

Our Scope



We collaborate throughout **all phases of the project lifecycle**, integrating technical coordination across disciplines, as well as design and construction requirements and methodologies.



Water Engineering Services

TYP SA's Water Engineering division provides the following services :



Hydroelectric Power Plants

Large power plants, medium capacity power plants, and small power plants



Water Supply and Sanitation

Tunnels and pressure pipelines, reservoirs, pumping stations, special projects (stormwater retention basins), urban sanitation and drainage, master plans for water supply and sanitation, etc.



River Engineering

River engineering and channelization, flood protection, geomorphology and sediment management, river habitat restoration, river basin planning, flood risk and floodplain studies, waterways, and hydrological warning systems .



Dams , reservoirs , and canals

Flood control, regulation of water supply for irrigation or communities, and hydroelectric power generation.



Water Treatment and Distribution Networks

Water treatment and reuse, drinking water treatment plants, wastewater treatment plants, desalination and brackish water treatment plants, water



Irrigation and Agronomy

Studies of the physical environment, feasibility studies for irrigation improvements, infrastructure design for large -scale irrigation systems, urban irrigation, technical and economic studies of agricultural operations, management of expropriation processes, and

Water Resources Planning and Management

Hydrology, hydrogeology, water resources planning, climate change, water regulations and law, etc.

■ Key Data on Dams and Reservoirs in TYPESA



Dams and Reservoirs

42 Dams Designed

Maximum height = 183 m
Average height = 82 m

Quantity	Height(m)
14	H> 100
20	50≥H> 100
8	H< 50

15 construction supervision contracts

Safety Inspections > **100** Dams

Risk Assessment of **59** Dams

O&M > **100** dams

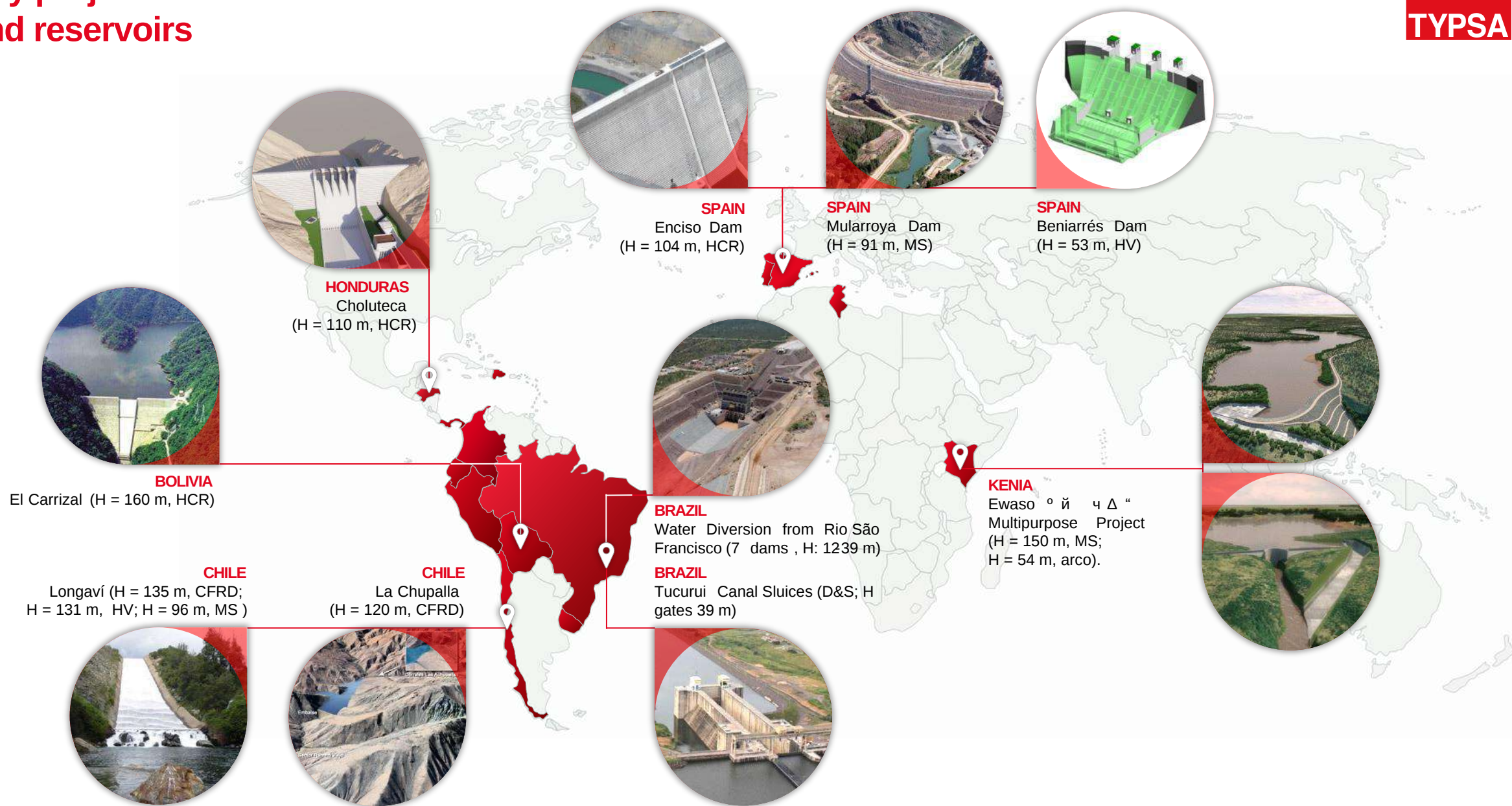
Services

- Ã Inspections and Assessments
- Ã Feasibility Studies
- Ã Design (preliminary, final, detailed)
- Ã Construction Supervision
- Ã Operation and Maintenance Services
- Ã Dam Safety and Risk Assessment
- Ã Bidding Support Services
- Ã Property Engineering and Consulting
- Ã Project Management Services
- Ã Rehabilitation, Adaptation to New Safety Standards, and Climate Change

Experience

- Ã Types of dams:
 - o Earthfill
 - o Rockfill with a clay core
 - o Rockfill with a concrete facing
 - o Gravity
 - o Gravity -arch
 - o Roll -compacted concrete (RCC)
 - o Concrete buttress dams
 - o Composite
- Ã Tailings and mining dams
- Ã Spillways with or without gates
- Ã Intakes
- Ã Hydromechanical facilities

■ Key projects in dams and reservoirs



■ Dams, reservoirs, and canals

Preliminary and feasibility studies, preliminary designs, and construction and detailed designs

Spain

- Francisco Abellán Dam (rockfill dam with a core ; H = 88 m).
- Jaranda Dam (rockfill dam with a screen ; H = 85.7 m).
- **Montoro Reservoir (arch-gravity dam ; H = 60.3 m).**
- Alcolea Dam (arch-gravity ; H = 61 m).
- Boeza Dam (compacted concrete; H = 65 m).
- Molino de la Hoz Dam (loose materials ; H = 39 m).
- Water management projects in the Oja River basin , La Rioja (2 earth -fill dams , H = 35 and 45 m).
- **Alcollarín Dam (gravity dam ; H = 31 m).**
- Búrdalo Dam (breakwater with screen ; H = 35 m).
- Biscarrúes Reservoir (composite; H = 84 m).
- La Cierva Dam Raising Project (gravity dam ; H = 65.3 m).
- **Upgrading of the Yesa Dam (compacted concrete; H = 111.7 m).**
- **Upgrading of the Beniarrés Dam (gravity dam; 53 m).**

Portugal

- Daivoes Dam (arch-gravity ; H = 77.5 m).

Kenia

- Nandi Forest Multipurpose Dam (compacted concrete; H = 66.4 m).

Brazil

- **Tucuruí Locks.**
- Interconnection of the Jaguari Reservoir.

Peru

- **Yarascay Dam (loose -fill dam with a clay core, 92 m).**

Bolivia

- Del Carrizal Dam (gravity dam , H = 160 m).

Dominican Republic

- Renovation of the Tavera Dam (rockfill; H = 80 m), the Jigüey Dam (arch - gravity; H = 110 m), the Maguaca Dam (rockfill; H = 26 m), and the Chacuey Dam (rockfill; H = 34 m).
- Las Placetas. Two roller -compacted concrete dams : Mata Grande (H = 57 m) and Los Limones (H = 83 m). **(in progress , Jun -25)**

Honduras

- Jicatuyo and Los Llanitos Dams and Hydroelectric Plants (2 dams : Los Llanitos (HCR; H = 115 m); Jicatuyo (loose materials ; H = 100 m)).
- Hydraulic infra. in the lower Choluteca River basin . Phase I. HCR, H = 110 m

Ecuador

- Baba Dam (loose -fill embankment ; H = 55 m).

Uruguay

- Arroyo Casupá Dam (earth or rock -filled; H = 30 m).

Chile

- La Tranca Reservoir (rockfill dam with screen ; H = 115 m).
- Irrigation reservoir on the Longaví River (3 dams : Los Laureles: rockfill dam with screen ; H = 135 m; Cuesta Clara: vibro -compacted concrete; H = 131 m; El Mañío: core -filled dam ; H = 96 m).
- Irrigation reservoir on the Teno River (2 dams : Los Queñes : rockfill dam with screen ; H = 115 m; La Jaula: rockfill dam with screen ; H = 114 m).
- Irrigation reservoir on the Achibueno River (2 dams : La Recova: rockfill dam with a screen ; H = 79 m; Montecillo: rockfill dam with a screen ; H = 89 m).
- El Sobrante irrigation reservoir (gravity dam ; H = 75 m).
- Chironta Dam (CFRD, H = 78 m).
- Zapallar Dam (CFRD, H = 100 m).
- La Chupalla Dam (CFRD, H = 120 m).
- Punilla Dam (CFRD, H = 136 m).

■ Dams, reservoirs, and canals

Construction Supervision and Environmental Monitoring

Spain

- **Ç Dam** (loose materials ; H = 85 m).
- **Enciso Dam** (compacted concrete; H = 104 m).
- **Mularroya Dam** (loose materials ; H = 91.5 m).
- **José Torán Dam** (arch ; H = 75.8 m).
- **Barbate Dam** (loose materials ; H = 30 m).
- **Environmental monitoring of the Andévalo Dam** (rockfill and clay core ; H = 62 m).



Ecuador

- **Manduriacu Dam** (compacted concrete; H = 57 m).
- **Rehabilitation of the Azúcar Dam** (loose materials; H = 28 m).

Panama

- **Borinquen Dam** (loose-fill embankment , H = 35 m).



Dominican Republic

- **Sabaneta Dam** (roller -compacted concrete, H = 70 m).
- **Los Limones Dam** (roller -compacted concrete, H = 70 m).

Peru

- **Tronera Sur Dam** (movable barrier with 3 radial gates: W=8 m x H=5 m).

Brazil

- **Campos Novos Dam** (concrete -faced rockfill dam , H = 202 m).
- **Barra Grande Dam** (concrete -faced rockfill dam , H = 183 m).

Tunisia

- **Kalaa Kebira Dam** (loose -fill; H=50 m) (under construction, Jun -25)

■ Dams, reservoirs, and canals

Operation , Preservation , and Maintenance

Chile

- El Bato Reservoir . Rock-fill dam with concrete face (CFRD), H = 80.3 m.
- Corrales Reservoir . Rock-fill dam with concrete face (CFRD), H = 75 m.
- Laja Diguillín Project: Control, Management, and Monitoring Services , 2023 -25.



Colombia

- Ranchería Dam (loose-fill , H=110 m, 200 Hm3).



Spain

- 55 dams in the Tagus Hydroelectric System (2011)
- The Santa Teresa Dam and 6 others in the Duero Hydroelectric System .
- The Baños, Aldeanueva del Camino, Hervás Weir , and Villar de Plasencia dams .
- La Colada Dam , Córdoba
- 39 Dams in the Tagus River Basin Authority.
- The small Terrateig Dam .
- The dams at Navalmoral de la Mata, Zarza la Mayor, Villanueva de la Vera, Mata de Alcántara, and 12 others managed by the Tajo Hydrographic Confederation.
- Dams in Zone 3 of the Tajo Hydrographic Confederation.
- The Guadarranque , Charco Redondo, La Hoya, Valdeinfierno , and Monte de la Torre dams (with daily regulation 0I-1) in the Campo de Gibraltar.
- Emergency repair work on the Mata de Alcántara Dam and immediate actions at the dams managed by the Tagus River Basin Authority .
- Commissioning , upkeep , and maintenance of the Colada Dam .
- Operation , maintenance , and upkeep of the Baños, Aldeanueva, Azud de Hervás, Villar de Plasencia, and El Bronco dams (Cáceres).
- Safety study and rehabilitation project plans for the Cornalbo Dam .
- Monitoring and inspection of dams in the Andalusian Intra -Community Basins in the provinces of Cádiz, Granada, Málaga, and Almería (Lot II).
- Maintenance and upkeep of the Andévalo, Chanza, Piedras, Los Machos, Corumbel , and Jarrama dams in the province of Huelva.
- Operation , maintenance , and upkeep of the Gabriel y Galán, Jerte, Valdeobispo , Borbollón, Rivera de Gata, Árrago , and Navamuño dams (Cáceres and Salamanca).
- Operation , maintenance , and upkeep of the Navalmoral de la Mata, Zarza la Mayor, Villanueva de la Vera, Mata de Alcántara, Arroyo de la Luz, Casar de Cáceres, Baños, Azud de Hervás, Villar de Plasencia, Aulencia , Los Morales, El Pajarero, Portaje, Torrejoncillo, Aldeanueva del Camino, and Guatel dams .

■ Dams, reservoirs, and canals

Dam Safety

Colombia

• Operating Guidelines for the Ranchería Dam

España

• Framework Agreement for the Preparation of Technical Safety Documentation Required by the New Regulations on Dams and Reservoirs, 2022-2024. Duero, Sil, and Eastern Zones.

• Safety Review of Dams in the Southern, Northwest, and Ebro-Pyrenees Hydrological Areas.

• Maintenance and upkeep of dams and infrastructure for the intake, pumping, conveyance, and distribution of raw water in the Guadalete-Barbate River Basin District in the Province of Cádiz. 2019-23 and 2023-26. Lot II. **(in progress, May 2025)**

• Risk governance, climate change adaptation, and prioritization of investments in the safety of state-owned dams in the Guadalquivir, Segura, Júcar, and Ebro River Basin Districts. Lot 4: Segura River Basin District. **(in progress, May -25)**

• Technical documentation on the safety of Ebro and Júcar dams and reservoirs. **(in progress, May -25).**

• Maintenance and Safety Inspection of ACA Dams. **(in progress, May 25)**

• Second review and general analysis of dam safety in the general regulation subsystem of the Guadalquivir River Basin District. **(in progress, May 25).**

• Inspection, Monitoring, and Safety of Dams Administered by the Regional Government of Andalusia in the Andalusian Mediterranean River Basins Hydrographic District.

• Second Safety Review of Dams in the General Regulation System.

• Operation, maintenance, and updating of safety documentation for state-owned dams in Zone G of the Duero River Basin. **(in progress, May -25)**

• Review and analysis of safety documentation for dams and reservoirs operated by concessionaires in the Inter-Community River Basins (Lot 8). **(in progress, May -25).**

• Safety management of state-owned dams in the Ebro River Basin. Dam Safety Report for the 2019-20 and 2020-21 hydrological years.

• Maintenance and upkeep of dams and infrastructure for the intake, pumping, transmission, and distribution of raw water in the Tinto, Odiel, and Piedras River Basin Districts, and the designated section of the Guadiana River (Chanza) in the Province of Huelva.

• Initial review and general safety analysis, operating standards, and Emergency Plan for the Las Navas del Marqués Dam (Ávila).

• Adaptation of safety and emergency plans for the Cancho del Fresno, Sierra Brava, Cubilar, Gargáligas, Rucas, and Azud de Rucas dams.

• Initial review and general safety analysis, Emergency Plan, and Operating Regulations for the Santa Teresa and Azud de Villagonzalo dams.

• Emergency Plan, Commissioning Plan, and Basin Management Plan for La Pantaneta de Celín (Almería).

• Initial review and general safety analysis, and Emergency Plan for the Aracena, Huesna, La Puebla de Cazalla, and Agrio dams (Huelva and Seville).

• Emergency Plan, Filling Plan, and Management Plan for the Negratín-Almanzora Reservoir.

• Emergency Plans for 10 dams on the Guadiana River and its tributaries.

Brazil

• Study on a potential failure of the Belo Monte Dam, as an integral part of the Dam Safety Plan.

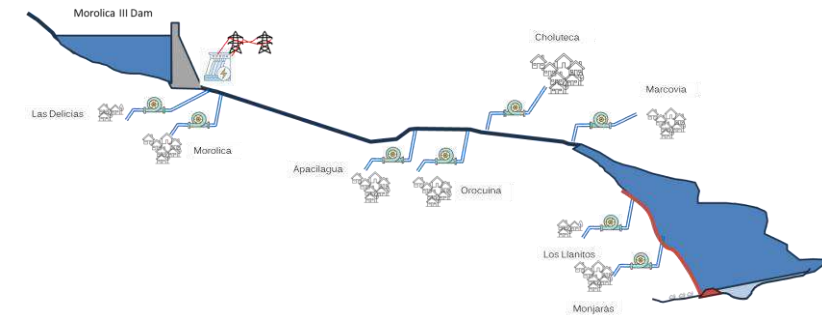
Water Infrastructure in the Lower Choluteca River Basin, Phase I

Client : Central American Bank for Economic Integration (CABEI/BCIE)

📍 Choluteca River, Honduras

Feasibility study, preliminary design, environmental and social impact assessment, and documents.

tender



~ Multipurpose reservoir :

- o Volume of 410 Hm³ for drinking water supply, irrigation, and power generation.
- o **Morolica Dam (CCR)** Height: 110 m; Length: 380 m, with a large spillway capable of discharging up to 20,000 m³/s.

~ Hydroelectric power plant with an installed capacity of 40 MW

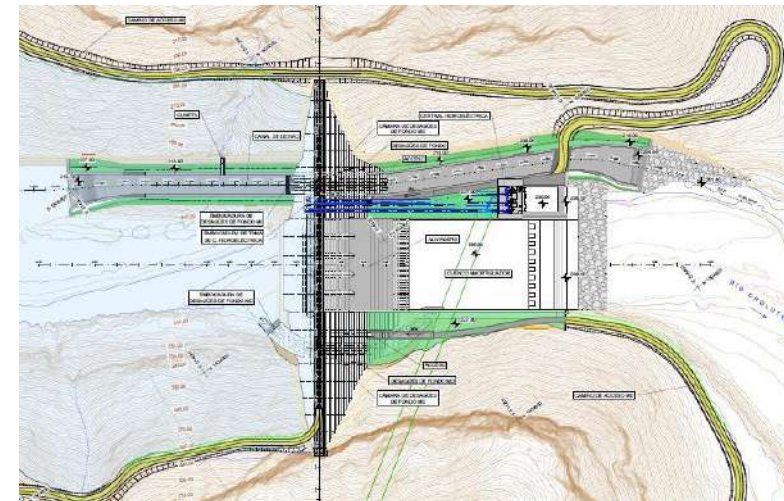
~ Water supply to 9 small riverside towns.

~ Drinking water supply and treatment plant for 230,000 residents in the city of Choluteca

~ 30 km of levees to protect the left bank of the river

~ Estimated budget: 629 M USD.

Main challenges: an area prone to earthquakes and hurricanes; extreme variations between the wet and dry seasons.



Montoro Reservoir

Client : Guadalquivir River Basin Water Authority (ACUAVIR)

 Spain

Grupo

TYPSA

Construction project for the reservoir expansion.

• New concrete gravity arch dam.

• Crown length: 255.40 m.

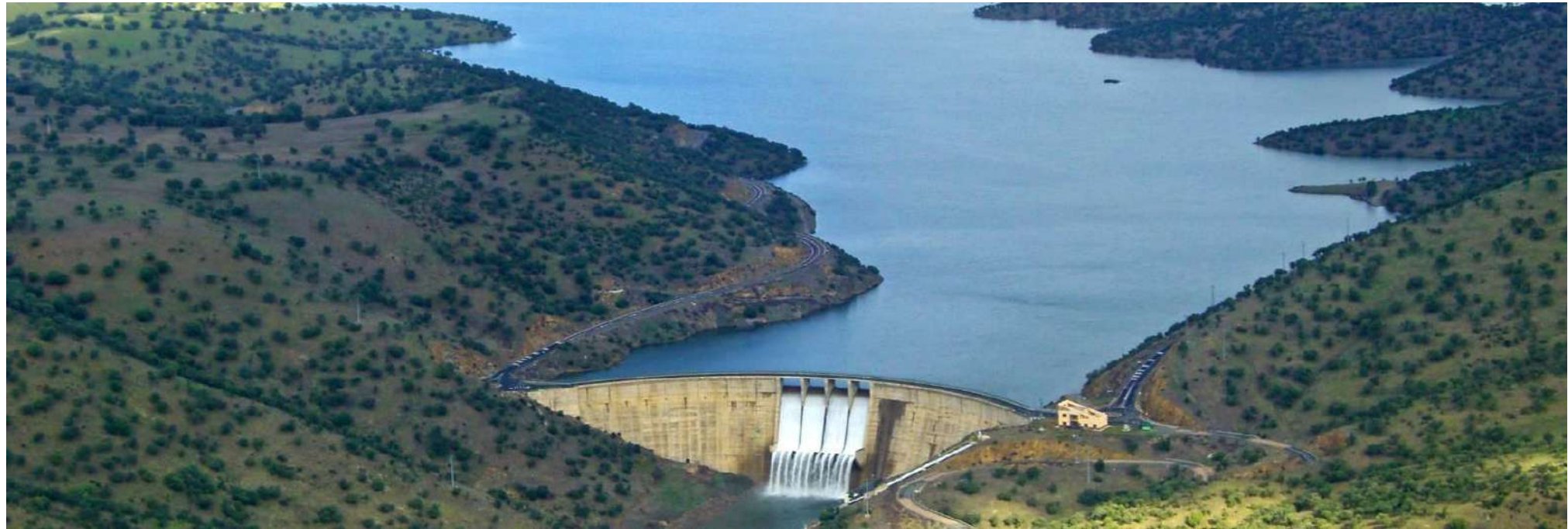
• Height above foundation: 60.30 m.

• Reservoir volume: 100 hm³.

• Pumping station with a maximum flow rate of 1.5 m³/s and a head of 146 m c.a.

• Fixed -lip spillway with four 11 -meter bays, capable of discharging 821 m³/s.

• Cost of the project: 41,203,285.98 EUR.



Alcollarín Dam

Client : FCC

 Spain

Grupo

TYPSA

Tender and detailed design .

• Vibro -compacted concrete gravity dam.

• Height: 31 m.

• Crown length: 626 m.

• Reservoir capacity: 51.6 hm³.

• Design spillway discharge: 89 m³/s



Yesa Dam

Client : MARM . Ebro River Basin Authority

📍 Navarra, Spain

Grupo

TYPSA

Construction project and plans for slope stabilization, as well as supervision of the stabilization work.

- Slope and dam monitoring.
- Technical consulting in geology and geotechnical engineering.
- Hydrology and hydraulics, and urban planning and construction.
- Emergency work to stabilize the right slope



Beniarrés Dam

Client : C.H. Júcar



Grupo

TYPSA

Construction project to bring the Beniarrés Dam and its spillways into compliance with current safety regulations.

• Vibro -compacted concrete gravity dam. Maximum height: 53 m; crest length: 395 m.

• Reservoir capacity: 27 hm³.

• T 1000 (2,139 m³/s) and T 5000 (3,350 m³/s).

• Inspection of the dam and update of the safety review.

• Analysis of technical and economic options to ensure compliance with safety requirements.

• Detailed design to meet hydrological and structural safety requirements:

- Reprofilng of the main spillway and the new side walls, new structure for the stilling basin and site preparation, new drainage galleries, and a new 25 -meter -high access tower.
- New side spillway (155 -meter fixed lip) and its discharge channel.
- Measures to protect the river and its banks; temporary diversion works; temporary and permanent access roads, including structures.
- Budget: 60.2 M EUR.

