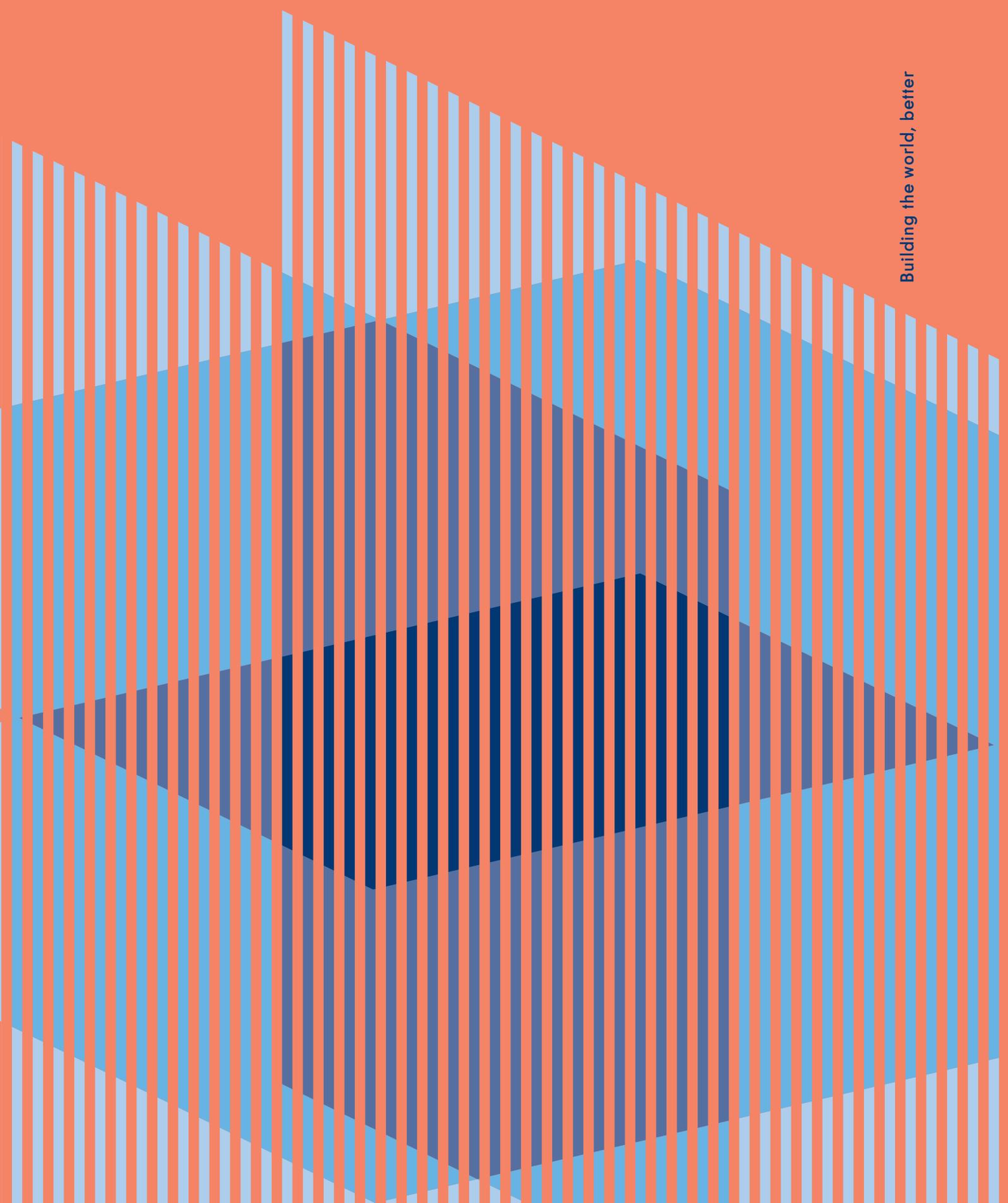




Activity report 2020

Building the world, better



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Foreword



2020 was a difficult year for the group in many ways, but it has also given us many signs of hope and success.

Beginning in March 2020, the pandemic successively struck all countries in which we are active.

However, consequences turned out to be very different depending on the type of our two main missions, whether it was carrying out studies, or following-up on construction sites.

As far as the “studies” activity is concerned, teleworking has prevailed everywhere and remains applied at 100% today in large countries such as India and Brazil.

As for the “construction sites” activity, although these sometimes had to be stopped, they were generally restarted quickly by all our subsidiaries.

But within our team of 4,000 employees, we unfortunately have to deplore the recent deaths of two employees in Brazil, as a result of the pandemic. In an attempt to deal with this affliction, we have had to take decisions quickly.

On March 26, just 15 days after the pandemic was declared, our crisis plan was drawn up, and provided all our subsidiaries with adequate principles and operational methods to deal with this situation.

On April 15, our budget was reviewed and included provisional impacts of the pandemic both quantitatively and qualitatively. This acted as our roadmap for the rest of the year.

Overall, we were able to achieve the objectives we had set for the year:

- our continuous improvement plan was implemented to standardize management procedures and has achieved all expected results;
- the transition to IFRS (International Financial Reporting Standards) was a success. We have in fact applied them for the presentation of our 2020 consolidated accounts;
- innovation programs have fully achieved their objectives;
- advances in training, namely towards the general adoption of BIM (Building Information Modeling), have been achieved well beyond our forecasts.

In addition, the TPF group has been involved for several years in sustainable development, and in the fight against climate change. We gladly support our clients in this essential path, as evidenced by all the projects we are carrying out around the world. We are also improving performance in each of our subsidiaries, which will now be subject to regular assessments.

TPF is resolutely committed to playing its part in the pursuit of this necessary ecological transition, with the objective of contributing to the achievement of the 17 United Nations sustainable development goals, as demonstrated by our subsidiaries projects. Throughout this report, illustrations demonstrate which objectives our subsidiaries have contributed to in 2020.



The principles of ethics and equality are also core elements in our work and in our relations with our partners. In addition to complying with the law, rules of good conduct and corporate governance, it is also important to safeguard the very enviable place TPF occupies in its sector of activity, thanks to the professionalism of our teams.

We are convinced that our corporate social responsibility (ESG) is reflected in our ethical behavior, in the respect for everyone's equality, whatever their origins or life choices, as well as in the sustainable development objectives that TPF subsidiaries strive to reach in the field.

All of these elements have enabled us to withstand 2020. As it stands:

- our revenues amount to 226 MEUR. They only fell by 10.8%, but at a constant exchange rate of 7%;
- our operating margin (EBITDA) of 33 MEUR is above 14% and all business units achieved positive EBITDA;
- the net result is above 4 MEUR;
- we were able to reduce our Net Working Capital by 7 MEUR, which contributed to generating Free Cash Flow of 12 MEUR and reducing net financial debt by 8 MEUR;
- we were also able to sign contracts for an amount greater than our annual turnover, resulting in a 6 MEUR increase in our order book.

This year again, the efforts of all our teams allowed TPF to be nominated for and to win several awards.

- In FRANCE, Fibois Sud Provence-Alpes-Côte d'Azur, the regional inter-professional association of the Forest-Wood sector rewarded the most remarkable wood constructions in France during the Regional Wood Construction Prize 2020, which was held in early June. Among some of the most impressive realizations in the category "Habiter une maison" (A house to live in), we can mention the Villa in Estoublon designed by Agence d'Architecture l'ACRAU and, in the category "Apprendre, se divertir" (Learning and entertainment), the Eco Campus of Sainte Tulle designed by firms "R+4 architectes", in Forcalquier, and "Leteissier - Corriol" in Marseille. TPF is particularly proud to have been able to support these two projects as a design office, respectively in charge of a project management mission and assistance to project owner (AMO).
- In PORTUGAL, our colleague Engineer Henrique Lopes was awarded by the Board of Engineers the prize for "Best Internship in the Geological and Mining Category" with the theme "Geotechnical Parameterization - Algiers Metro - Extension El-Harrach Centre - Aéroport".

Our Portuguese subsidiary was also nominated for the "Best Engineering Company" prize by newspaper "Construir".

- In INDIA, the Mandovi cable-stayed bridge, which is 5.1 kilometers long and known as "Atal Setu", won in February the "ICI-Ultra Tech Award for Outstanding Concrete Structure of Goa 2019 - Infrastructure Category". TPF was felicitated with Certificate of Commendation for being the Structural Consultant.
- Finally, in BRAZIL, TPF was awarded the Innovation Prize from magazine "O Empreiteiro".

In order to wrap up this retrospective, we can announce that with an order book of 469 MEUR representing 23 months of activity, TPF should be relatively serene for 2021 and the coming years.

We would like to thank all our employees and express our sincere gratitude. Thanks to their daily commitment, they are our most valuable asset towards the Group's success, and help us defend values which are ever more necessary today, in order to support the ecological transition.

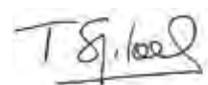
José Santos
Chief Operating Officer



Christophe Gilain
Managing Director



Thomas Spitaels
Chief Executive Officer



Executive committee



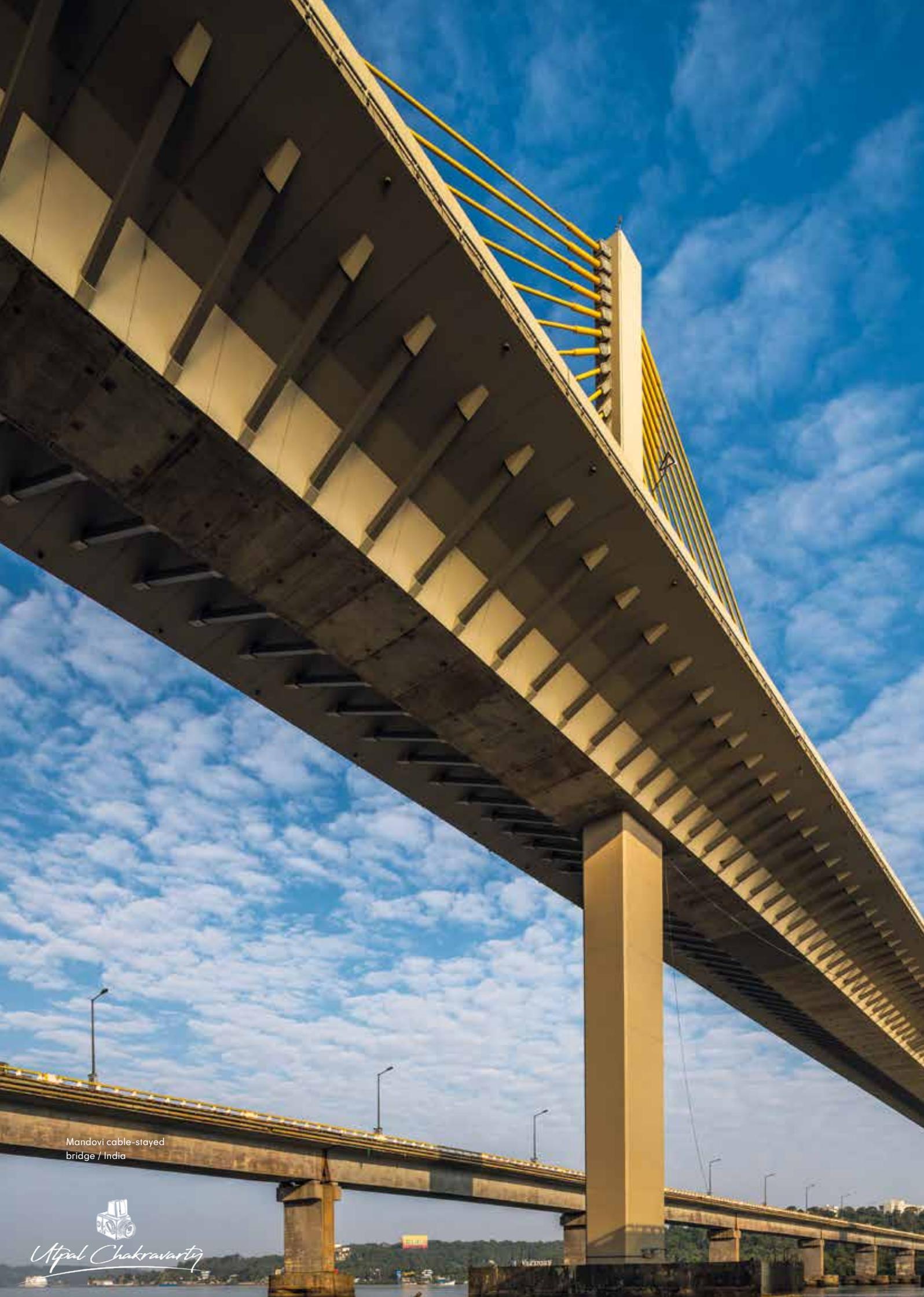
1. Thomas Spitaels
Chief Executive Officer
2. Christophe Gilain
Managing Director,
Member of the Executive Committee
3. José Castro Santos
COO, Member of the Executive Committee
4. Philippe Thibaut
CFO, Member of the Executive Committee
5. Carlos Baião
Member of the Executive Committee
6. Atul Bhoje
Member of the Executive Committee
7. William Meynard
Member of the Executive Committee
8. Amadou De
Member of the Executive Committee
9. Tom Van Looy
Member of the Executive Committee
10. João Recena
Member of the Executive Committee



TPF in the World



- Our Subsidiaries and Branch Offices
- Our countries of operation in 2020



Mandovi cable-stayed
bridge / India



Utpal Chakravarty

Highlights by geographical area and by sector

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America 32

Asia 54

Europe 65

Oceania 106

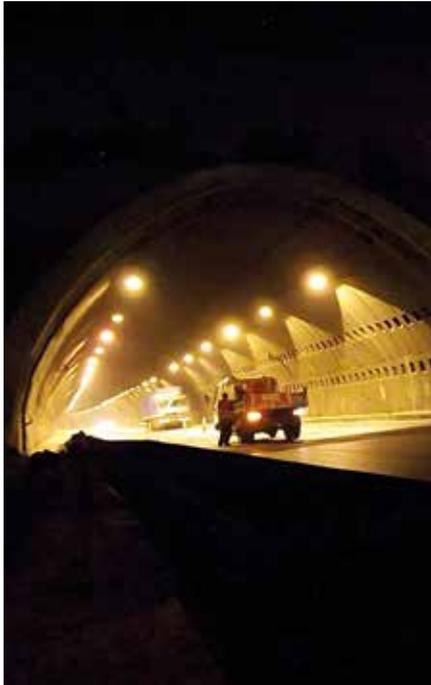
Algeria

ROAD INFRASTRUCTURE

The past year has brought us a lot of great news in the tunnel sector, both in terms of safety and renovation.

After completing the Kherrata tunnels project in Bejaia, our specialists worked towards the rehabilitation of the Oued Ouchayeh tunnel in Algiers. The safety devices proved to be insufficient in this 900 m long structure made up of three traffic lanes in each direction.

TPF proposed measures in the field of civil works, drainage, lighting, ventilation, fire protection and video-surveillance systems in order to improve road safety.

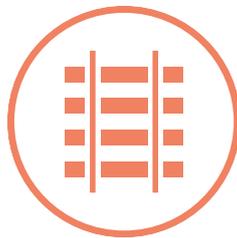


RAIL INFRASTRUCTURE

In Algeria, the rail sector is experiencing real momentum as evidenced by the many projects underway. Our experts in the field are currently controlling and supervising no less than 700 kilometers of line.

TPF is participating in the construction of the Annaba-Ramdane Djamel, Relizane-Tiaret-Tissemsilt, Oued Tletat-Tlemcen lines and in the construction of the eastern mining line (lot 3).

The Group is therefore reinforcing its reputation forged over the years in the region, both with its peers and with public establishments such as the Agence Nationale d'Études et de Suivi de la Réalisation d'Investissements Ferroviaires (ANESRIF).



700 KM

<
Oued Ouchayeh
tunnel / Algiers

>
Viaduct on the Oued
Tletat-Tlemcen line

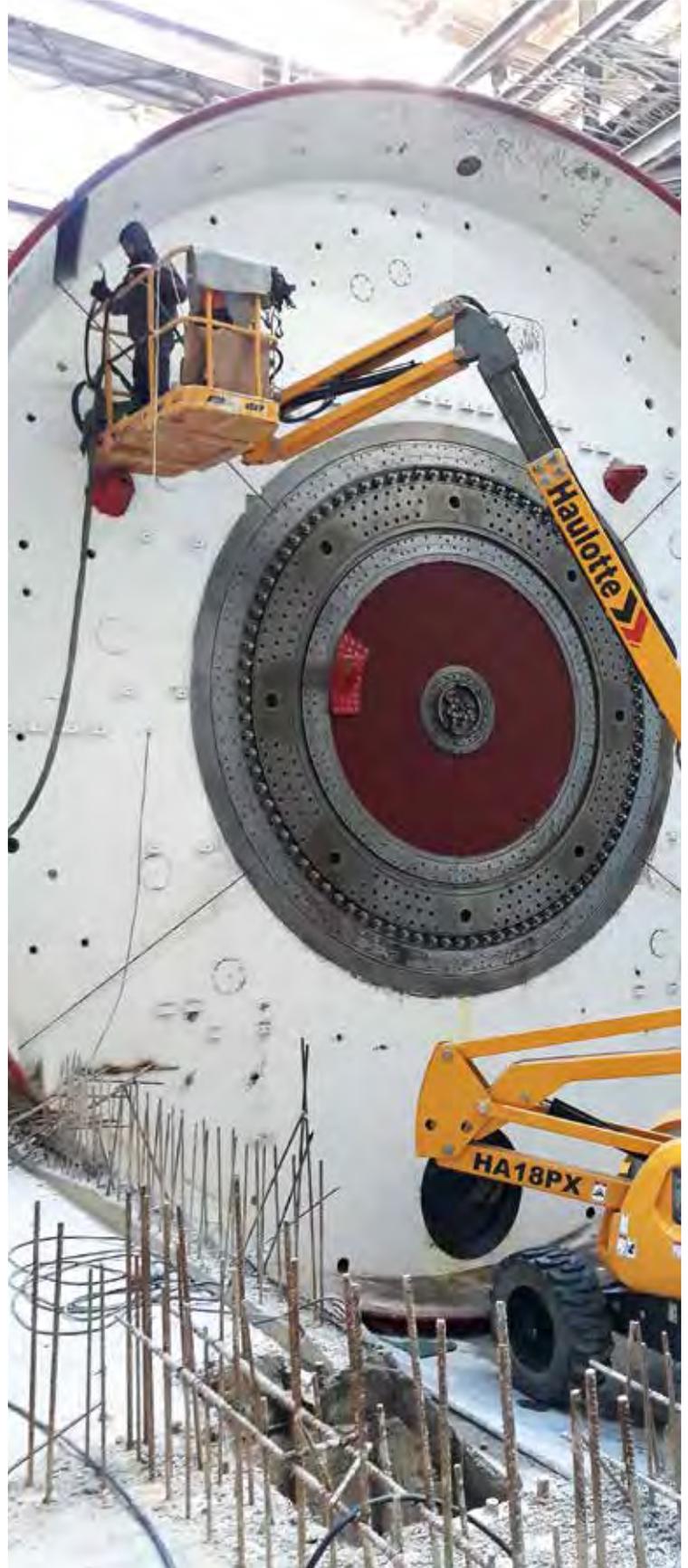


URBAN TRANSPORTMETRO, LIGHT RAIL, TRAM, BUS RAPID
TRANSIT (BRT)

We are picking up pace on the Algiers metro extension project and more specifically on the E extension of the line between El Harrach-Center and Houari Boumediene international airport.

The Algerian company Cosider turned to TPF for the realization of the construction design and technical assistance during the works.

The project includes
drilling a 9.5 km
tunnel, building
9 stations and digging
10 ventilation shafts



Angola



BUILDING - URBAN PLANNING

^
Multifunctional
building / Luanda

In Luanda, TPF was mandated to carry out construction design for the construction of two multifunctional buildings (including external infrastructures).

This new study contract covers the design and dimensioning of two buildings (construction area of 2,000 m² and 2,080 m²) as well as the dimensioning of external infrastructures (2,850 m²) including technical infrastructure and road access.

Note that this project is carried out in BIM (studies, architectural design and engineering).

Also in Luanda, we are supervising the construction work of the Pedro Maria Tonha “Pédale” hospital, which is proceeding at a rapid pace.

This new 58,000 m² hospital center is composed of 4 areas of activity corresponding to very specific services. The main building, with a hospital capacity of 111 beds, offers four floors including a technical floor. The other buildings will house administrative and management services, a training center in robotic surgery and a histocompatibility laboratory. The infrastructure also includes a hotel with a capacity of 100 rooms, an apart-hotel of 20 T2-type (2 bedrooms) units as well as a 180-space covered car park with a helipad on the roof.

Completion of the work is scheduled for the end of 2021 (except for the residential part which will be delivered around mid-2022).

The year 2020 featured many great successes in the field of urban infrastructure and irrigation



ENVIRONMENT - WATER

In the province of Moxico, our Portuguese and Angolan teams continued their activities relating to the project to extend the drinking water distribution network in the city of Luena: laying 150 km of pipes and creation of 15,000 home connections.

This project, financed by the International Bank for Reconstruction and Development (IBRD) is particularly complex given its location in disorganized and densely populated peri-urban areas.

The contract we won with the Ministry of Energy and Water covers the analysis and review of the project. TPF is also in charge of the supervision of the works which should start by March 2021.

In the irrigation sector, TPF won a new study contract for the rehabilitation of 2,500 hectares of irrigated areas.

This project should last 9 months and is funded by the World Bank and the French Development Agency.

The rehabilitation of the irrigated perimeters concerns three lots distributed in the provinces of Malanje, Cuanza Norte and Cuanza Sul. We are currently studying the feasibility of this project.

For the time being, we have started gathering information on the ground and putting together the documents with the collaboration of the Provincial Representative of the Commercial Agriculture Development Project (PDAC) in Cuanza Norte.

Burkina Faso



ENVIRONMENT - WATER

TPF is supporting Burkina Faso in its quest to improve access to drinking water and sanitation in urban and rural areas.

The project management mission ended this year. It was entrusted to us within the TPF SETICO - BRLi - ERGECI consortium, as part of the investment and capacity building program of the National Office for Water and Sanitation (ONEA).

In Ouagadougou, our teams successfully controlled and supervised construction design and works relating to the laying of approximately 59 km of DN300 cast iron pipes (lot 4). They also provided assistance with reception and commissioning operations. .



Cameroon



ROAD INFRASTRUCTURE

In Yaoundé, the economic capital of Cameroon, TPF has been entrusted with the control and supervision of the rehabilitation works on approximately 12 kilometers of main roads.

This new 30-month contract was signed with the Government of the Republic of Cameroon, through the Municipality of Yaoundé. This involves reviewing and validating the construction design, ensuring the control and monitoring of the work and supporting the customer during the warranty period of twelve months.

ENVIRONMENT - WATER

In the field of water and irrigation, the Emergency Flood Control Project (PULCI) in the Far North of the country deserves to be particularly highlighted this year.

Implemented from 2014 to 2020, the PULCI notably made it possible to rehabilitate the dikes of the Logone river (70km) and the Maga retention dam (27 km), to rehabilitate the irrigation infrastructure of the rice farming Société d'Expansion et de Modernisation de la Riziculture de Yagoua (SEMRY), to develop a flood management contingency plan or to create and consolidate eight water user associations.

This project was set up by the Cameroonian Government through the Ministry of the Economy, Planning and Territorial Development, and has benefited from funding from the World Bank (IDA) and the Cameroonian State.

Within the framework of the third component of the project relating to institutional support: "Study of the establishment of water user associations in the flooded perimeters of SEMRY and support for the maintenance operations of hydro-agricultural infrastructure", TPF has set up a sustainable and efficient operating and maintenance (O&M) system as well as the creation, training and structuring of functional associations of water users (WUAs).

97 KM of dikes

75 MW hydroelectric scheme

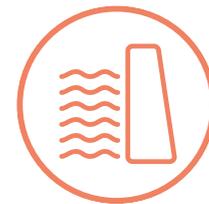
ENVIRONMENT - ENERGY

In the 75 MW (603 hm³) hydroelectric development project in Warak, on the Bini river, TPF is assuming the role of Project Owner Support (AMO). To this end, the work is continuing under our supervision.

The completion of this hydroelectric development goes hand in hand with the construction of a 225 Kv high voltage electricity transmission line with a length of 70 km to the Mounguel substation.

This work is one of the flagship projects of the Ministry of Water, Energy and Mines in which TPF has the honor to participate within the framework of the consortium formed with the company Intertechn.

Finally, it should be noted that the performance of this work requires the displacement of 300 people for whom a Travel and Relocation Plan has been implemented, in accordance with the requirements of the World Bank.



Flood protection

Hydroelectric
scheme
at Warak
v





Egypt

BUILDING - URBAN PLANNING



This year, our Moroccan subsidiary expanded the scope of its activities in Egypt to meet the new needs of the French Lay Mission (MLF - Mission laïque française).

After being associated with the extension of the Lycée André Malraux in Rabat and the construction of the Lycée Louis Massignon in Casablanca, we are delighted to continue our collaboration with the French Lay Mission in Egypt as part of a new project in Alexandria.

TPF has been entrusted with the studies and monitoring of the works for the new high school, which will be installed on an old redeveloped industrial site. This ambitious project was designed by Moroccan architect Khalid Molato and aims to obtain the HQE label.

The high school is expected to be finished by June 2022.

<
MLF
high school
in Alexandria
v



URBAN TRANSPORTMETRO, LIGHT RAIL, TRAM,
BUS RAPID TRANSIT (BRT)

Among the three projects on which TPF is currently working, the light rail project "LRT 10th of Ramadan" is definitely worth mentioning.

Work has progressed well on this site, which is requiring the construction of 67 kilometers of new double track line, ten stations and maintenance workshops to accommodate the 22 trains that will run on the line.

This new ultramodern line will connect Cairo, the new administrative capital and the city of the 10th of Ramadan, to the east of the Egyptian capital.

TPF is supervising the infrastructure construction works and the track structure.



< New LRT line / Cairo

**ENVIRONMENT - WATER**

TPF is keen to contribute to improving access to sanitation services in Sharkia Governorate.

We continue to provide supervision services in the framework of the sewerage project for Fakos – El Sawaleh Cluster (Group 3). The contract covers the construction of three sewage networks in the towns of Sowwada, El Rawwada and El-Hegagia El-Mostagada. It is envisaged to build 5 new pumping stations and 63.7 km of sewage pipes, in order to serve a population of 68,500 inhabitants.

We were awarded this contract last year, and it is even more significant since it is TPF's first contract in the water sector in Egypt.

1st contract
in the water sector
and school
infrastructure sector

Guinea Conakry

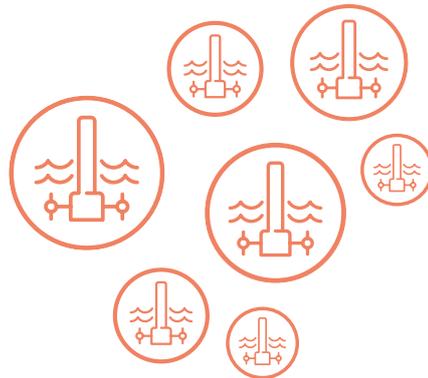
Africa
has a vast
hydropower
potential

ENVIRONMENT - ENERGY

The country wishes to develop it further in order to strengthen its energy autonomy. To that end, the number of sites under study for small hydroelectricity equipment is increasing.

The feasibility studies, detailed design and tender documents that we must carry out for the United Nations Industrial Development Organization (UNIDO) concern the 7 MW small power plant project, Gbotodou hydropower plant on the Milo river.

The feasibility study was delayed due to the COVID-19 pandemic but was finally completed this year. We are eagerly awaiting the opening of borders so that we can start the detailed design.



Kenya

ENVIRONMENT - WATER

This year, TPF continued its work on the Sagana River hydroelectric development project, with an estimated capacity of 45 MW.

The technical, economic and financial feasibility study of the project which had been entrusted to us by REIKE Ltd has been completed, and there is a renewed interest towards taking the next step. We can now move on to the detailed design: carrying out geological, hydrological and hydraulic studies, and dimensioning of the structure.

Another project close to our hearts is the hydroelectric development of the Ndanu Falls on the Yala River, not far from Kisumu.

The proposed development consists of a mobile dam, a water intake and a supply channel, a loading chamber and a penstock, as well as a power plant with an estimated power of 10 MW and a tailrace.

We were able to finalize the tender documents this year. It is now up to TPF to present an offer to the customer with a view to carrying out the construction design and providing technical assistance for the works.





Morocco

Three major projects in the school real estate market

BUILDING - URBAN PLANNING

This year, activity in the school real estate market was punctuated by three major projects: the construction of two schools for the ELBILIA Group (approved French education from kindergarten to the final year) in Rabat and Marrakech, and the construction of the American International School of Rabat.

The two new schools for the ELBILIA Group will be completed in the summer of 2022: the one in Rabat sits on a 7 ha land with a buildable area of 17,000 m², and the one in Marrakech sits on a 5 ha plot with a buildable area of 15,000 m². Both will be environmentally and energy efficient. TPF was entrusted with technical studies and follow-up of all trade works.

> ELBILIA school in Rabat

ELBILIA school in Marrakech
v





As for the American International School of Rabat, its completion is scheduled for the end of 2022. Designed by the American firm FXcollaborative and Omar Alaoui, the new international school will be built in the upscale district of Rabat on 10 ha of land. It will be equipped with state-of-the-art infrastructure and equipment in accordance with American educational standards. In addition to carrying out technical studies and ensuring the follow-up of all trade works, our engineering office is also involved in site management and control (OPC).



^
American
International
School
of Rabat
>



Our performance
is also
the result of
our positioning
in the fields of
sport and health

Our design office is involved in the construction project for the new Institute of Sports Sciences (ISS) of the Hassan I University in Settat, the first establishment of its kind in the Moroccan university landscape.

This project sprung out of the University's desire to diversify and enrich its offer, and to provide training courses for obtaining Bachelor, Master and Doctorate degrees in physical education and sports management, as well as to train professionals in the field of sports governance and sports organizations.

The new institute will be built near the university complex of the city of Settat, on a plot of 10 ha, and should be completed by the end of 2022.



<
Institute of Sports
Sciences (ISS) /
Settat

Ibn Sina Hospital
/ Rabat -
© AIA Life
Designers Image
BezierCG
v

TPF is also a member of the consortium which won the international competition for the construction of the new Ibn Sina Hospital in Rabat, alongside AWM and AIA Life Designers. The Group can be legitimately proud of this recognition.

This 130,000 m² project is structured around a bioclimatic garden tower 140 meters high, with its base opening onto a 6.5 hectare park. The complex will house a general hospital with 916 beds, the institute of the cardiovascular league, a teaching and conference center as well as a boarding school.

A true architectural and technical feat dedicated to hospital excellence and high environmental and energy quality, this new hospital will offer a perfect balance between city and nature.



Mozambique



BUILDING - URBAN PLANNING

The inauguration of the green infrastructure park located in the city center of Beira was undoubtedly the highlight of the year for this coastal region, threatened by the risk of flooding and storms.

It is the largest urban park in Africa covering an area of 45,000 m².

In addition to offering a multifunctional green space dedicated to leisure, sport and environmental education, the project aims to ensure control of the fluvial waters of the Chiveve river and the protection of the mangrove ecosystem.

This is a great success for our team responsible for controlling and monitoring the work. But our mission is not over yet, since we will ensure follow-up of the work during the warranty period of 18 months.

It should be noted that the part of the project devoted to urban redevelopment of the informal occupation zone of Goto was finally abandoned by the donor.

< Green infrastructure park / Beira
v





The way to a better health coverage and better flood management

ENVIRONMENT - WATER

Mozambique now has a decision support tool for flood management in high-risk areas. This tool allows the country to anticipate the impact of flood damage in the Zambezi basin.

TPF is particularly proud to have been able to contribute to updating the hydrological and hydraulic model of the Zambezi River basin, which covers an area of approximately 1,390,000 km².

In particular, our team used the free surface hydraulic modeling software HEC-RAS (Hydrologic Engineering Centers River Analysis System) to simulate the flows. This modeling was carried out using LiDAR topographic data.

But our mission did not stop there since we also trained the technicians of the National Directorate of Water Resources Management and the Zambezi Regional Water Board (ARA-Zambezi) in hydrological and hydraulic modeling (development, application and dissemination of models).

In addition to river flood problems, there are also storm water and sanitary coverage problems. They are of increasing concern to the world and in particular to Mozambique.

The 445,000 inhabitants of the municipalities of Chimoio and Inhambane are facing serious flooding and sanitation problems.

Within this framework and as part of a consortium, TPF was entrusted by the Water Supply and Sanitation Infrastructure Administration (AIAS) with the preparation of a development plan and feasibility studies, detailed design and tender documents for the improvement of sanitation, drainage and solid waste management in these two municipalities. This resolutely ambitious program will cover the next 25 years. Our mission is continuing as planned.

ENVIRONMENT - LAND USE PLANNING

This year once again, TPF took part in implementing the Maritime Spatial Planning (MSP) process, an essential tool for the efficient management of maritime activities and the sustainable use of marine and coastal resources.

The project
is financed by the
World Bank and
covers an area of
562,000 km²

The aim is to create a coherent, transparent and sustainable decision-making framework, resting on evidence-based data, leading to the planning and management of maritime activities in an integrated manner. This requires in-depth expertise in many areas such as ocean economics, oceanography, climate change, fisheries and maritime transport, aquaculture and biodiversity, coastal erosion, marine pollution, environment, energy, tourism and even marine resources.

The contract with the government of Mozambique, through the Fisheries Development Fund, is still ongoing.



Senegal

BUILDING - URBAN PLANNING

In the regions of Kolda, Sedhiou and Ziguinchor, schools will be built and others rehabilitated to make up for the lack of infrastructure.

This ambitious project is part of the Emergency Community Development Program (PUDC) and involves the construction of eight elementary schools and five middle schools (CEM) as well as the rehabilitation of eight primary schools.

TPF will be in charge of a fascinating task: work supervision and control of the structure of enclosed and covered works, offering at least partial protection against attacks from external natural elements (waterproofing), structures and equipment contributing to the prevention of fires and evacuation of occupants (fire safety) as well as electrical installations, sanitary plumbing and medical fluids.



ROAD INFRASTRUCTURE

The rehabilitation project of the Dialocoto-Mako section of approximately 115 km located on national road 7 will enable development and facilitate trade with neighboring countries such as Guinea via the Dakar-Bamako corridor.

Our department in charge of road projects is currently monitoring and supervising the rehabilitation works for the Dialocoto section at PK 120 over approximately 55 km. The project involves earthworks, foundation and base layers of the pavement and asphalt works.

Note that TPF won this contract with the Road Works and Management Agency (AGE-ROUTE) in consortium with the SCET-Tunisia design office.

^
High school students sitting in a classroom in southern Senegal- © 2017 Elin Martínez/ Human Rights Watch



ENVIRONMENT - WATER

In the department of Podor, the performance of the irrigated perimeters of the SAED (Société d'Aménagement et d'Exploitation du Delta) will be improved.

TPF was requested as part of the implementation of the Podor Irrigated Agriculture and Economic Development Support Project (AIDEP). SAED is the delegated contracting authority for this project, which aims to reduce poverty and food insecurity and contribute to the economic development of rural areas in the department of Podor.

TPF was entrusted with the control of consolidation works and equipment of the irrigated areas. The objective of the mission is, among other things, to control earthworks and civil engineering works, electrical, electromechanical and hydromechanical equipment, site installation, topographical layouts, administrative and follow-up documents, as well as construction design documents and plans.

Another success this year: the new design contract won within the framework of the West African Coastal Areas Management Program (WACA), whose objective is to promote various measures to combat coastal erosion.

TPF, in consortium with its partner MDK Partners, was selected to carry out the environmental and social impact studies for the stabilization works of the eastern and western corniche roads of Dakar.

Among the tasks entrusted to us, we can mention the technical studies (preliminary design, detailed design, tender documents) and the development of the Terms of Reference for the control of stabilization works.

Our Senegalese and Portuguese teams will tackle it together from February 2021, combining their expertise in topography, bathymetry, currents, sediments, hydrology, hydraulics, geotechnics and even civil engineering.

TPF and the engineering office SCET Tunisia are looking at large-scale work in the Malem Hodar area, in order to resolve the water problems of the groundnut basin linked to the high levels of salt and fluoride.

Technical studies for the transfer of water from the Malem Hodar catchment area will begin very soon.

This involves transferring water from the Malem Hodar catchment area to supply the areas located in the groundnut basin, and more specifically in the regions of Kaffrine, Kaolack Fatick and Diourbel, where the quality of the water table is problematic.

The contract is structured around the four missions defined in the Terms of Reference:

- the preparation of the preliminary design relating to the four transfer axes of Malem Hodar, Delay, Touba Toul and Sine Gambiet as well as the economic and financial analysis of the project,
- the development of the detailed design on the transfer axis of Malem,
- preparation of tender documents,
- study of the management mode of water transfer structures.



Tunisia



Two major objectives: improving the quality of air and water

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

The mega-project of the Central Loop of the Tunis Light Rail System and new transport hub in Place Barcelone which is scheduled for completion in 2024, will make it possible to limit automobile use particularly in the center.

The work is ambitious: traffic direction will be reversed on the central loop, so as to enhance mobility on the whole transport network. For that purpose, infrastructure upgrades will be carried out along the whole section (2 km), at the République Station, and at the Bab El Khadra Halt. Particular attention will be paid to the architectural, commercial and urban revitalization of Place Barcelone and its surrounding areas.

In 2019, TPF was awarded the contract to update the detailed design, prepare the tender specifications, review and approve the contractor's design, supervise the works, and provide assistance during the line's commissioning. The results are rather positive, since this year, we have updated the studies and the tender specifications and set up an Electronic Document Management (EDM) system.

ENVIRONMENT - WATER

TPF continues to be involved in the integrated pollution control program for the Lake Bizerte region.

TPF has been involved in an ecological restoration scheme aimed at enhancing water quality and restoring the ecosystems of Lake Bizerte in order to promote sustainable socio-economic development and improve the quality of life of citizens, as well as reducing pollution in this lake, which is located in northern Tunisia and connected to the Mediterranean Sea via a 7-km long canal.

In addition, we have been working on the design of the wastewater treatment plants that serve the towns of Bizerte, Menzel Bourghiba and Mateur.



<
Place de Barcelone
(Tunis)

Argentina



A year
focussed on the
environment

ENVIRONMENT - WATER

The company was awarded the supervision of the Areco bed widening works, involving channeling work over 12,800 meters and was awarded three new studies by the National Preinvestment Department:

- flood protection study for the city of Santa Lucia;
- study on the reuse of wastewater from the Bajo Grande wastewater treatment plant for irrigation purposes;
- study of the expansion and optimization project for the irrigation system in the southern part of Cruz del Eje.

In Lanus, we are continuing supervision of the design and construction of the Lanús Tannery Industrial Park and Industrial Liquid Effluent Treatment Plant (ILETP).

This new station has a capacity of 8,000 m³/d and will treat effluents from all tanneries in Buenos Aires grouped together in the new Industrial Park in Lanús. The project aims to reduce discharge into the Mantanza-Riachuelo river.

Lanús ETP

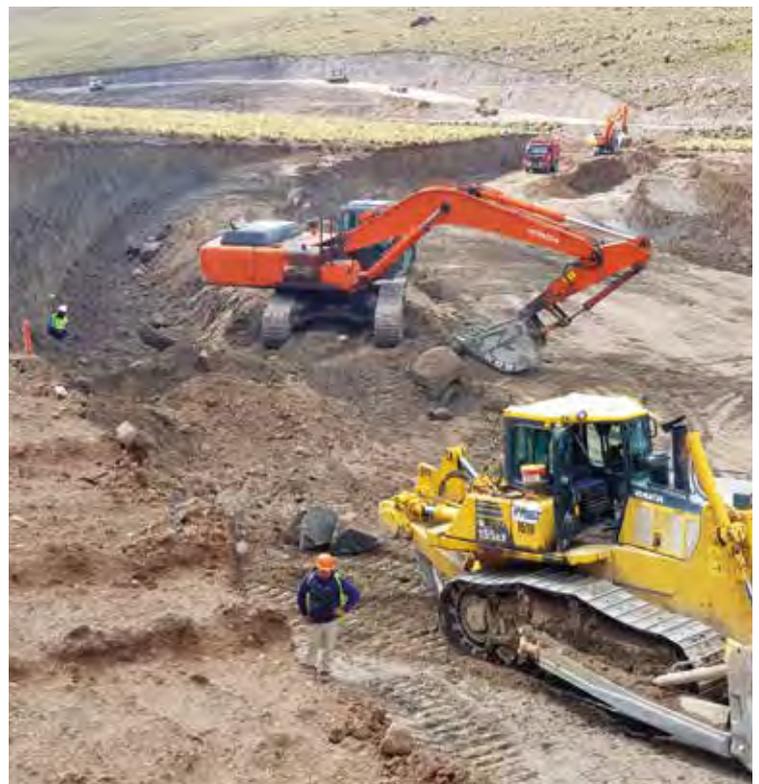


Bolivia

ROAD INFRASTRUCTURE

In the department of La Paz, TPF is currently providing technical and environmental supervision services for the construction of the Nazacara - Hito IV road. In particular, the company is responsible for overseeing works on Section III, a 50.3-km long stretch with two lanes and berms between Santiago de Machaca and Hito IV.

The contract period is 48 months and covers the review of the detailed design, the construction supervision, and the operation and maintenance of the infrastructure. The Nazacara - Hito IV section is part of the Viacha - Hito IV road in the Department of La Paz and has an approximate length of 110 km. The topography along the route is predominantly flat with some hilly sections. The new infrastructure links the southwest of La Paz with the Peruvian border and the port of Ilo. This road will allow for the integration of the municipalities it traverses, thus enhancing commercial, social and cultural activity, as well as economic growth.





Brazil

BUILDING - URBAN PLANNING

Aiming at maintaining and improving the education infrastructure of Bahia, the State Education Secretariat (SEC) selected, through a bidding process, TPF to provide technical support for the oversight of works and for the elaboration of renovation and construction designs for all school and administrative buildings of the state education system.

In total, TPF's activities include oversight, management, inspection, and support for the management and monitoring of the works and designs of more than two thousand buildings across the state.

In the State of Bahia, no less than two thousand education buildings will be renovated





1370KM

RAIL INFRASTRUCTURE

The year was marked by the feasibility study commissioned by the Department of State Roads of Paraná (DER) dedicated to the construction of the 1,370 km “Nova Ferroeste” interstate railway line.

This ambitious mission was awarded to TPF in a consortium with Sener.

The construction of this new rail axis between Mato Grosso and the export port of Parana will not only increase the transport capacity of agricultural products intended for export, but also increase logistics performance (reducing the number of trucks and therefore lowering costs). This project will also have a positive impact on the environment and lower emissions of pollutants into the atmosphere.

The consortium used Artificial Intelligence (AI), through Machine Learning in large mass of data (Big Data), to assist in the definition of tracks on the Railway, adapted to the complex topographic profile of the region and with existing terminal and railway mesh integration.

PORT INFRASTRUCTURE

In the state of Pernambuco, the project to implement a major Liquefied Natural Gas (LNG) terminal in the Suape industrial port complex is still progressing.

In partnership with Eicomnor Engenharia, TPF was selected to carry out the pre-feasibility study. The diagnosis includes an overview of LNG commercialization expectations in the country, an analysis of the feasibility of the terminal's location based on the port's current zoning and development plan and a conceptual design with proposals for readjustments in port facilities to meet the specificities of the cargo.

Suape port complex
v



ENVIRONMENT - WATER

Flood prevention is a major concern North of Teresina, the capital of the state of Piauí.

TPF was hired to prepare the detailed design for the adequacy of the Parnaíba and Poty dikes in Teresina, capital of the State of Piauí, which comprises an extension of 5,560 m. The infrastructures, financed by the World Bank, aim to protect 13 neighborhoods in the northern part of the city from floods, protecting the lives of around 100,000 people.

The project will include a study of alternatives for setting the heights for the dikes, taking into account technical, social, environmental and financial aspects. With the heights defined, the detailed design will then be developed.



^
Poty



TPF has played a major role in updating the 2010 Atlas of Urban Water Supply in Brazil (ANA, Atlas Brasil do Abastecimento Urbano de Água).

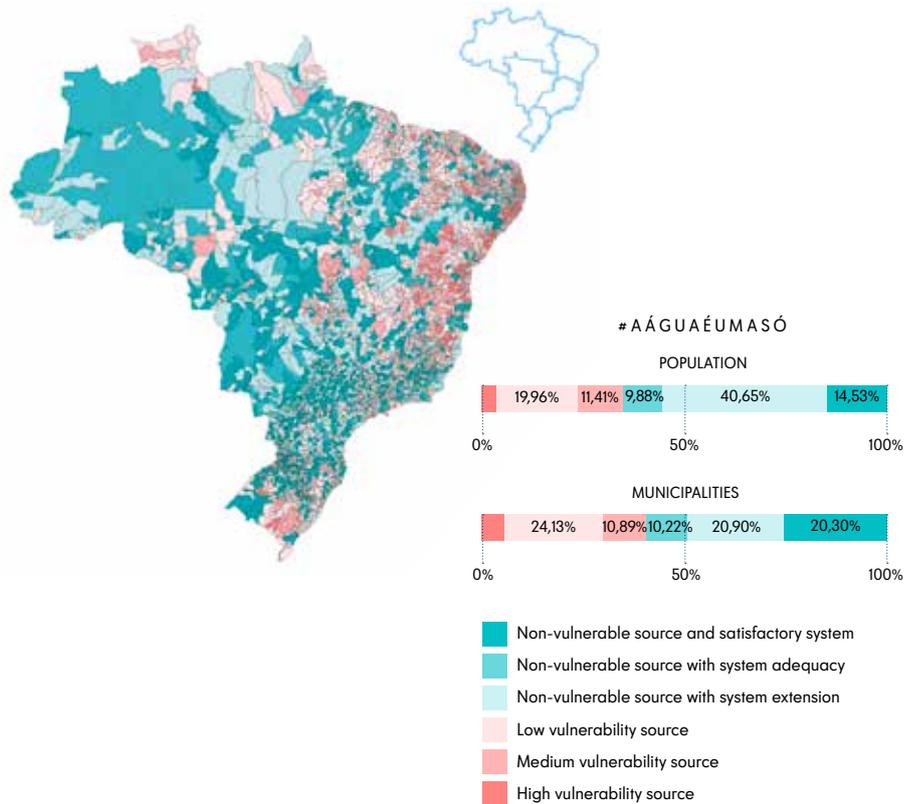
This new version presents the diagnosis of the current water resources situation in Brazil, and a series of actions aimed at ensuring water supply in urban areas. This document incorporates data from studies we have carried out for two years in 5,570 cities spread into 27 Brazilian states.

From the results obtained with the studies, it was possible to produce a portfolio of projects and works that includes solutions, costs, and actions to enable them. TPF has also developed an interactive dashboard to facilitate access to ATLAS data.

Dams are an important issue in terms of safety of people and goods. In this context, Vale, one of the largest mining companies in the world, has appointed us to carry out the safety assessment study for several dams.

Among the activities of the contract, there are the design review studies, allowing the exchange of data from the projects between the stakeholders of the operation; operation manuals for the dams, describing procedures and its maintenance; specialized services in Engineering of Records, regular safety inspection reports; and the dam stability declaration. These actions are important to ensure the security of multiple dams.

Our Portuguese and Brazilian teams have a great outlook as they have won two new contracts this year



ENVIRONMENT - ENERGY

The energy company Shell called on our services for their project to build several solar photovoltaic plants in the state of Minas Gerais.

In this context, TPF is currently providing consultancy on environmental licensing and the acquisition of water use licenses for the construction of the plants.

The services also include carrying out preliminary studies, preparing pumping tests and analyzing water quality. These items are necessary for the process of obtaining grants for 3 photovoltaic plants with a total capacity of more than 1200 MW of installed power.



Raison d'être:
improving the quality
of life of residents,
and including
vulnerable people
in society

SOCIO-ENVIRONMENTAL ENGINEERING

Among other things, our experts in socio-economic impact assessment worked on the rehabilitation project for 3,314 kilometers of rural roads with treatment of 2,654 critical points.

The project aims to improve traffic and safety conditions on secondary roads in the State of Bahia, resulting in a better quality of life for the rural population. No less than 64 municipalities are impacted by this work.

The Government of Bahia, through the Infrastructure Secretariat (SEINFRA) asked us to measure the impacts of the public policy on road infrastructure on local development and the living conditions of families through two household sample surveys before and after the works.

We conducted the environmental noise assessment in the area of the LD Celulose undertaking, a factory for the production of soluble cellulose.

Noise propagation studies were carried out, based on a methodology defined in the Environmental, Health and Safety Guidelines, established by the International Finance Corporation (IFC). The procedures of the Brazilian Association of Technical Standards (ABNT) were also considered for the identification of possible impacts and proposition of noise mitigation measures in the area of the undertaking.

In São Paulo, TPF is working alongside Mcrit and Eurecat for a more inclusive mobility for people in precarious situations, who usually do not have access to mobility.

The project aims to identify the main barriers that restrict access to public transportation use, indicate good national and international practices used in inclusive transportation systems, and offer recommendations to the World Bank in defining the investments needed in infrastructure to ensure poverty reduction.

The results are expected to improve mobility and job accessibility for socially vulnerable public transportation users in the area of influence of the Aricanduva Corridor, and "Rapid Bus Transportation", and to increase the operational efficiency of the São Paulo City bus system.



We will finish with the income generation and training program "Travessia Barcarena". Thanks to this great initiative, some 120 people from the different communities of Barcarena have already benefited from technical training allowing them to manufacture protective masks against Covid-19.

The initiative aims to create new income generation opportunities for seamstresses whose business has been affected by the pandemic. We are responsible for implementing the project, carried out by Todos pelo Trabalho Program, Alunorte and Albras, with support from the Sustainable Barcarena Initiative (IBS), Hydro Sustainability Fund (FSH) and PPA Solidariedade. The Action Plan elaborated aims at increasing access to work, promoting professional qualification and generating work and income alternatives in the municipality of Barcarena (PA).

LD Celulose SA -
New production unit

>
São Paulo BRT system

>
©Hydro - Mask
manufacturing -
Travessia Barcarena
Program



Chile



Upgrading
of La Serena
Hospital:
first contract
with the Ministry
of Health

BUILDING - URBAN PLANNING

In 2020, TPF entered into a contract with the Ministry of Health for the first time, through the Health Department of Coquimbo. With this new success, TPF is strengthening its Chilean presence in the hospital sector.

The aim of this contract is to carry out the preliminary design of the architecture and technical systems for the upgrading of La Serena Hospital, including the structural calculations, and the plumbing, power supply, HVAC and medical gas supply systems. This design will allow for the tendering of the detailed design and construction works under a Public-Private Partnership Agreement with the Ministry of Public Works.





RAIL INFRASTRUCTURE

In Chile, as everywhere in the world, detailed inspection of structures is essential to ensure their operational safety.

Our extensive experience in this field has enabled us to secure new orders.

For the time being, our technical inspectors are delivering technical inspection services during the rehabilitation and reinforcement of the structure of 20 railway bridges located in the central-southern area of the country.

The aim of the contract is to modernize the railway infrastructure, with a view to optimizing the operating conditions of the network and increasing the efficiency of this transport mode.

Ensuring the efficiency and safety of railways also requires an efficient radiocommunication system capable of meeting the needs of the future rail system.

The remarkable award signed during 2020 was the contract to conduct on-site technical inspections of the railway radio communication system all over the country to upgrade the system that is currently in operation, including dispatch consoles, traffic recorders and the location and number of repeater stations, in order to optimize the radio coverage and adapt the system to the administrative and operational divisions for a remote supervision of the operation.

This field work has been entrusted to us by the state-owned railway company EFE (Empresa de los Ferrocarriles del Estado).

Colombia



BUILDING - URBAN PLANNING

The implementation of phase II of the free housing program is underway. TPF is in charge of follow-up.

This ambitious program, launched by the Colombian Government in favor of disadvantaged and vulnerable groups, plans to develop 30 real estate projects across the country, or approximately 3,500 housing units (single-family, two-family and multi-family dwellings).



TransMilenio BRT system /
Bogota



URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID
TRANSIT (BRT)

In Bogota, a major step was taken this year for the implementation of the TransMilenio BRT System on Avenida Villavicencia.

The feasibility study and the detailed design essential to its successful completion have been completed.

However, our work is not complete in the capital yet, since the supervision contract has just started for the design and construction of section 4 of the said system on Avenida 68, as well as for the extension of the NQS line to Soacha.

Our participation in this major project is a recognition of our know-how in the public transport sector. It must be said that the TransMilenio is one of the busiest and most famous BRT networks in the world, with 2.2 million daily passengers and one hundred kilometers of dedicated track.



ROAD INFRASTRUCTURE

TPF was able to take this opportunity to share its experience and to make its expertise prevail in ongoing projects.

A few examples: this year we carried out the detailed design of the Ánimas - Nuquí road (155 km) in the department of Chocó and at the same time, continued to supervise the construction of four road corridors (Honda - Manizales to Caldas, Chía - La Mesa - Girardot in Cundinamarca, Puerto Carreño - Juripe in Meta and the Transversal Central del Pacífico in Chocó).

In addition, we have been awarded four new construction supervision contracts for the rehabilitation of roads in the departments of Risaralda, Caldas, Valle del Cauca, Putumayo, Cauca, Huila and Quindío as well as a new contract for the preparation of the studies and detailed design of the Chiquinquirá - Bucaramanga road corridor in the departments of Boyacá and Santander.

Numerous concession projects are also planned to link the main ports to major cities such as the Corridors of Prosperity.

In recent months, TPF has carried out the detailed design of the Río Magdalena motorway (functional units 1 and 2). The infrastructure is 70 km long and comprises 27 viaducts (including viaducts over 250 m long) and more than 280 cross drainage structures.

Colombia intends to catch up by improving and developing new road corridors



RAIL INFRASTRUCTURE

The rail sector is experiencing renewed momentum. Many projects are underway, including the regeneration of the Antioquia railway network.

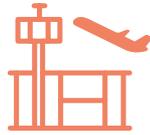
Our team focused on the 128 km section to be rehabilitated and modernized between Santo Domingo and Puerto Berrio. The last few months we have been working on the technical, legal and financial studies and designs of project.

AIRPORT INFRASTRUCTURE

The main Colombian airports are operated under concession agreements.

We continue to provide supervision services within the framework of the Centre - North concession. It comprises 6 airports: José María Córdova International Airport (Rionegro), Olaya Herrera Airport (Medellín), El Caraño Airport (Quibdó), Los Garzones Airport (Montería), Antonio Roldán Airport (Carepa) and Las Brujas Airport (Corozal).

Our mission covers more particularly the financial, administrative, technical, legal, operational, environmental and security aspects.



Supervision of the concession of six airports in the Centre-North region



ENVIRONMENT - WATER

Projects in the field of environment and water, which have been assigned to us in the regions of Bogotá and Quibdó, are progressing positively.

We are currently supervising the construction of the functional link between towns of Engativá and Suba, on the Juan Amarillo wetland, and the water supply and sewage systems in Quibdó.

Regarding the extension of the Salitre wastewater treatment plant in Bogotá, TPF is continuing its activity there as the Project Manager.

<
Functional link between Engativá and Suba -Salitre wastewater treatment plant / Bogotá

Costa Rica

ROAD INFRASTRUCTURE

In 2020, TPF continued to perform the technical supervision of the construction of the Northern Ring Road around San José in Costa Rica and the supervision of the operation of the concession of National Road 27.

For the Estrella-Solís consortium, TPF is currently supervising the construction works of the 5.4 km long North Perimeter Road of San José.

The route will be marked out by 15 structures and 4 junctions, of which two are 3-level interchanges.

This project is particularly complex because it involves the complete closure of the only ring road in the capital.

Other highlights this year include the long-awaited approval of the National Concessions Council, for the initiative allowing the rehabilitation of Route No. 32 San José - Limón, and the new contract won within the framework of the OBIS 2 project.

The private initiative was launched in 2018 and concerns the rehabilitation of the section of Route 32 located between the bridge over Virilla River and the crossing over the Frío River.

As for the OBIS 2 project, the Hermanos Solís - TPF consortium has been selected to carry out the design and construction of the OBIS 2 project for the Route 1. It concerns the urgent works to be carried out on the section between San José and San Ramón. Our teams will be working on it from 2021.

<
North perimeter
road of San José





Ecuador

URBAN TRANSPORT
METRO, LIGHT RAIL, TRAM, BUS RAPID
TRANSIT (BRT)

+
mobility planning

-
energy
consumption

-
GHG emissions

In December 2020, TPF signed a new contract to prepare Ecuador’s National Policy for Sustainable Urban Mobility.

The activities to be developed are aimed at setting up strategies and actions that will be implemented in the different urban areas to ensure sustainable urban mobility.

On the basis of an analysis of initiatives regarding public policy, governance, regulations, capacity building, funding arrangements, and technology, key measures to put in place include improving technologies for passenger and urban freight transport and private vehicles; optimizing public transport operations; encouraging the use of non-motorized transport modes; urban land-use and urban mobility planning; parking policies; mechanisms and economic incentives to reduce GHG emissions; and developing public policies in order to implement these measures.



Honduras

Development corridors in Latin America: acting as a way to opening up territories, and a tool for economic growth



ROAD INFRASTRUCTURE

With the support of the Central American Bank for Economic Integration (CABEI) and the European Investment Bank (EIB), Honduras has launched a vast program aimed at accelerating its economic and social development.

The Government has set itself the objectives of improving road infrastructure in the western regions and improving the western corridor (Corredor de Occidente).

TPF is pleased to participate in this scheme, in particular by providing construction supervision services for the rehabilitation of the section of the West Honduras Road between Los Ranchos and El Florido (Lot No. 3), in the department of Copán. The reconstruction of the West Road will boost trade between Honduras and Guatemala and help promote tourism and investment opportunities in the western region of the country.

A second major project is undoubtedly the development of the Villa de San Antonio - Goascorán logistics corridor and more precisely of sections II (El Quebrachal - San Juan II Bridge) and III (San Juan II Bridge - Goascotán).

This new 113 km road is part of the Honduras Interoceanic Logistics Corridor and connects to the south with the road that heads to El Amatillo, on the border with El Salvador. This year, our services involved assisting and advising the Client on various legal issues pending with the Contractor, which were concluded during October to December with the supervision of the defect rectification carried out by the Contractor. At present, we are working on the final consultancy report.

^
Villa de
San Antonio -
Goascorán
logistics
corridor

Mexico

RAIL INFRASTRUCTURE

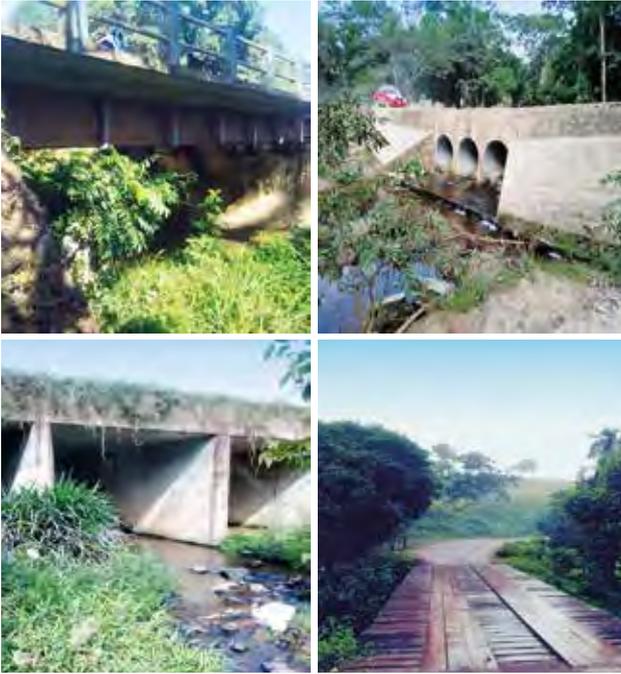
The Tren Maya project is a vast project launched by the Mexican government as part of the National Development Plan 2019-2024. It aims to link the five Mexican states (Yucatan, Quintana Roo, Campeche, Tabasco and Chiapas).

This new mixed rail line (passenger-freight) with a range of 1,452 km will undoubtedly contribute to the economic and social development of the region.

TPF is very honored to have been selected to participate in this major project, and more precisely to carry out the design of section 2, located in the state of Campeche, which covers a length of 222 km. It includes two stations and four viaducts, as well as a maintenance workshop in the city of Campeche.



Nicaragua



ROAD INFRASTRUCTURE

The modernization and rehabilitation works started several months ago on the two-lane road between Siuna and Rosita are now progressing rapidly.

TPF continued with the supervision of the upgrades to three sections of the Siuna – Rosita road (from the bypass of Siuna to the village of Rosita) totalling 76.63 km, under the Loan Agreement No. 2211 - VII Program for the Improvement and Rehabilitation of Roads - which was signed by the Government of Nicaragua and the Central American Bank for Economic Integration (CABEI).

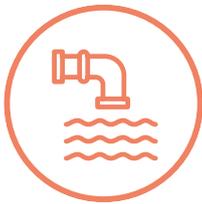
This road section is part of the northern corridor, a route of vital importance since it connects the Pacific and the North Caribbean regions. It features two lanes with concrete pavement and includes 8 new bridges and the reinforcement of 3 bridges.

It should be noted that 4.33 km of road will be delivered on a fast-track basis, with the Contractor assuming responsibility for both the design and construction work.

Panama

ENVIRONMENT - WATER

The project to extend the Federico Guardia Conte drinking water treatment plant in Chilibre is soon coming to an end. Commissioning should take place in 2021.



The plant's treatment capacity will be increased by 15 MGD (0.658 m³/s)

Throughout the year, TPF provided design services to the consortium formed by Acciona and BTD.

The initiative includes the use of new energy-efficient technology (DAF) for the removal of solids, which will lead to significant energy savings during the operation of the facility.



Paraguay

ROAD INFRASTRUCTURE

20
years of
collaboration

In the San Pedro and Canindeyú departments located East of the country, 68 kilometers of secondary roads will soon be rehabilitated to facilitate the movement of people and goods.

The contract concluded with the Ministry of Public Works and Communications (MOPC) specifically concerns four road sections. The work we are supervising in joint venture with TECMA should be completed in 2021.

Through this project, we hope to further contribute to the development and improvement of transport infrastructure in Paraguay, a country where we have already been present for 20 years.

Road rehabilitation
in the Department
of San Pedro



Peru

ROAD INFRASTRUCTURE

In 2020, we continued working on the supervision contract for the management, upgrading and performance-based maintenance of approximately 320 kilometers of roads.

Roads (Lot 4: PE-34U, PE-3ST, PE-3SU, PE-36E, PE-36F and PE-38B) covered by the contract are located in the Department of Puno and more specifically in the provinces of Sandia, Carabaya, Puno, Chucuito and El Collao, in the Department of Puno. They are part of the Pro Puno road corridor (Corredor vial Pro región Puno).

The contract covers the management, monitoring, upgrades, maintenance and emergency repair work, as well as vehicle overload control and information gathering.

Our task is to ensure that the Contractor carries out management, improvement and maintenance operations by adopting a preventive attitude, such that performance of the corridor remains within the parameters of the planned service levels at all times, thus avoiding early deterioration of the road.

Quiñota - Santo
Tomás road / Cusco
v



United States

RAIL INFRASTRUCTURE

The future high-speed rail line should initially connect San Francisco and Los Angeles, at a maximum speed of 350 km/h. It should then join Sacramento and San Diego and would then extend over 1,288 km.

TPF is the lead designer under the design-and-build contract for Construction Package 4 (an 8 km section). Works are progressing at a good pace.

1st high-speed rail project in the country



Afghanistan

1st
afghan
project

ROAD INFRASTRUCTURE

The rehabilitation of the Salang road tunnel is a very particular project for us.

This is the first project we are working on in Afghanistan. But above all, it is also the first service contract that we signed in 2020 with the Ministry of Public Works of the Islamic Republic of Afghanistan.

Mandatory passage of the Salang pass in the Hindu Kush, the 2.8 km long structure is of capital importance because it links Kabul to the north of the country.

TPF partnered with the company Khatib & Alami to carry out technical inspection of the tunnel and galleries, to carry out construction design and draft tender documents.

This year, we focused on finalizing construction design.



Azerbaijan

RAIL INFRASTRUCTURE

A thirty-month contract is currently in progress: this is the agreement awarded at the end of 2019 by the Azerbaijan Railways for the Kars-Baku international corridor connecting Asia and Europe, and more precisely for the Baku - Boyuk-Kesik railway line.

The project consists in the 25 KV 50 HZ electrification of 502 km of lines initially supplied with direct current (3.3 kV) between Baku, on the Caspian Sea and Boyuk-Kesik, on the Georgian border.

In addition to the installation of a new electrification system (conversion of direct current into alternating current), the project also consists in replacing and upgrading the signaling systems (with modern Electronic Interlocking systems, ATP system, new Centralized Traffic Control in a 2nd phase) and to supply 40 AC Freight Electric Locomotives and 10 AC/DC Passenger Electric Locomotives.

Let us also mention that TPF was responsible for technical inspection activities and project management.



East Timor



BUILDING - URBAN PLANNING

TPF has recently signed up for a new challenge, which consists in revitalizing the community of Aitarak Laran.

This involves restructuring an urban area of 29 hectares, improving its environmental quality and socio-economic life.

The Government of East Timor (Ministry of Public Works and the National Directorate of Buildings) selected our team of Portuguese and Timorese experts specializing in architecture, urban planning, socio-economic development, environment and law to develop this project. We were given the task of carrying out feasibility studies, construction design and the Resettlement Action Plan for the population impacted by the project.

ROAD INFRASTRUCTURE

In the northern coastal region, on the Dili-Liquiça road, we are progressing with studies relating to the creation of access intersections to the port of Tibar Bay, about ten kilometers from the capital.

The 0.6 km development involves the creation of two roundabouts and widening of the existing track.

On top of the environmental impact study, preliminary design and construction design, TPF has also been entrusted with Project Owner Support (AMO) for awarding the work contracts. We are carrying out this exciting work on behalf of the Government of East Timor (Ministry of Public Works, Transport and Communications) in the framework of the port concession agreement.



India



ROAD INFRASTRUCTURE

India continues to rehabilitate and expand its main national roads, particularly in the states of Nagaland, Manipur and Madhya Pradesh.

Through its Department of Public Works, the Government of Nagaland has appointed TPF as a consultant for preparation of Detailed Project Report (DPR) for Widening of existing intermediate / single lane to 2 lanes of NH-61 which is about 59 km.

In the State of Manipur, through the Department of Public Works, the Government has entrusted us with the feasibility study and the Detailed Project Report (DPR) for Shangshak – Tengnoupal on NH-39 (NH-102A – Extn) section which is about 202 km.

Adani Road & Transport Limited has appointed our company as consultant for Geotechnical Investigation work, laboratory testing of collected samples & submission of Geotechnical reports for 4-Laning of Nanasa to Pitgaon section of NH-47 under Bharatmala

Pariyojana (Economic Corridor). This program launched by the Indian government aims to build more than 66,000 kilometers of economic corridors, border and coastal roads, and highways to revitalize the road network.

In the state of Maharashtra, the new Hindu Hruday Samrat Balasaheb Thackeray Maharashtra Samruddhi Mahamarg expressway, currently under construction, will connect no less than ten districts, twenty-six tehsils (talukas) and 392 villages.

Once completed, this new eight-lane 701 km road is expected to shorten the average travel time between Nagpur and Mumbai by ten hours, at a speed of 150 km/h.

At the request of the Maharashtra State Road Development Corporation (MSRDC) and as Authority's Engineer, our Indian and Spanish subsidiaries are jointly participating in the realization of two lots, of approximately 54 km and 43 km.



> Bhopal bridge

The country's development goes hand in hand with the development of its transport infrastructure



^
Mumbai-Nagpur
expressway

Improving existing infrastructure is also essential to meet the demand for mobility and to address the growing traffic congestion problems in the state of Maharashtra.

In spite of the restrictions of COVID-19, nine Authority's Engineer packages that are on-going in the state of Maharashtra continued to make progress on site. These packages connect tier-2 and tier-3 cities to each other and are conversion of existing 2 lane roads to 4 lanes. Our Indian team continues to fully assume its role as Authority's Engineer for the Ministry of Road Transport and Highways.

In the state of Madhya Pradesh, the year ended on a positive note as well. Evidence of this is that after several years of work, the new Bhopal Steel Arch Bridge was inaugurated on December 29, 2020.

The arch shaped bridge, first in its district connects Kilol Park area's BRTS corridor to Ginnori. With its construction, the journey between the old city and New Bhopal has been reduced by 2.5 km. The total length of the bridge is 200m and it spreads over Bhopal's Lower Lake.

Our engineers and specialists worked for many months on this project to produce the Detailed Project Report (DPR), supervise the work and ensure quality control and adequate execution.

RAIL INFRASTRUCTURE

In the rail sector, the project to double the 381 km wide gauge line between Lumding and Dibrugarh is progressing.

The national company Northeast Frontier Railway appointed our company as Consultant for Final location/ pre-construction survey including stacking of alignment on ground, Geological & Geotechnical investigation, Preparation of detailed estimate, drawing and ancillary works in connection with construction of BG double line.

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

In India, several cities are looking to acquire new metro lines.

Our attention is now turning to the future Bhopal and Indore metro rail project for which we have concluded a service contract with Madhya Pradesh Metro Rail Co Ltd. (MPMRCL).

Our Indian Company has been appointed as a consultant for detailed Geotechnical Investigation Study and preparing of soil test report for Underground Stations and Tunnels including Depot for Bhopal and Indore Metro Rail Project.

Laos

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

In a context of climate change, projects and debates related to sustainable mobility have undoubtedly never been so numerous in the capital.

For example, TPF contributes to the design of a sustainable urban mobility system tailored to the needs of the city of Vientiane.

The primary objective is to develop a high-quality Bus Rapid Transit (BRT) network with a view to reducing journey times while improving service reliability.

The proposed project involves a 20 km BRT line that will pass through the center of Vientiane, connecting Wattay International Airport to the National University of Laos.



Philippines

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

TPF brings its expertise to the Manila light rail, also known as LRT (Manila Light Rail Transit System).

In terms of capacity, this extension of nearly 12 km will transport 800,000 passengers per day instead of the 500,000 currently transiting. This demonstrates the effectiveness of this project.

Our project review team is responsible for evaluating the conformity of the works and ensuring the proper management of the operation and maintenance of the line for the duration of the concession, set to 32 years.



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Manila Ninoy Aquino International Airport (NAIA) expansion

ROAD INFRASTRUCTURE

This year has once again allowed us to demonstrate our expertise in road operation and maintenance.

As a Facility Operator, TPF continues to operate the Muntinlupa Cavite Expressway (MCX) toll motorway, with the help of the holding company Ayala Corporation.

TPF continues with its role as Facility Operator for the Muntinlupa Cavite Expressway (MCX) in partnership with Ayala Corporation. This 4 km infrastructure, inaugurated in July 2015, connects South Luzon Expressway (SLEX) to Daang Hari Road, south of Metro Manila.

AIRPORT INFRASTRUCTURE

Manila Ninoy Aquino International Airport (NAIA) is largely saturated and plans to expand.

The objective is twofold: increasing its capacity to 65 million passengers per year and 52 air traffic movements per hour.

The Php 102 billion proposal was submitted by a consortium of seven of the country's largest companies and the operator of Singapore's multi-award winning airport (Changi).

It involves upgrading, expanding and interconnecting the existing terminals of Ninoy Aquino Airport (NAIA), upgrading airside facilities for efficient airline

operations, developing commercial facilities to enhance the passenger experience, and elevating the status of NAIA as the country's premier international gateway.

The construction works for the new annex buildings to the terminals and the expansion of the airfield infrastructure and systems will be done in parallel.

For this project, TPF had won a consulting contract as Project Owner Representative. Following the covid-19 pandemic, things have changed as we were writing this report. Until further notice, the Government has suspended all negotiations to renovate the airport.

Saudi Arabia



URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

TPF is associated with this project and has just completed design review for lines 1 and 2 (Lot 1).

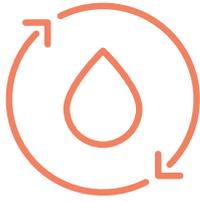
This massive project, currently in its final phase, comprises 6 automated lines, 176 km of track and no less than 85 stations.

TPF was approached as an Independent Checking Engineer to review the design of the first two lines, including the underground, elevated and at-grade stations, the viaducts, and the track.

In total, there are 6.5 km of tracks, 3 depots, 20.2 km of tunnel built using the New Austrian Tunnelling Method and shotcrete, 21.3 km of viaducts, 11 elevated stations, 26 underground stations and 15 egress shafts ... Figures speak for themselves and are indicative of the scale of the project.

In Riyadh, Saudi Arabia is currently building the **largest metro** in the world.





ENVIRONMENT - WATER

By 2030, the National Water Company (NWC) plans to double the wastewater treatment capacity, which is currently below the needs of the population. In order to achieve this objective, several plants are currently under construction or under tender.

In 2020, the consortium responsible for the construction of the wastewater treatment plant of the city of Taif under a 25-year BOOT contract commissioned TPF with the preparation of the detailed design.

The plant will be designed for a population equivalent of 367,000, an average daily flow rate of 100,000 m³/day, and a maximum flow rate of 160,000 m³/day. The most advanced SBR technology will be used, resulting in significant space savings, improved operational efficiency and reduced energy consumption.

In addition, the design will be carried out using BIM, which will help the Client during the construction, operation and maintenance of the plant.

Several IWP (Independent Water Project) desalination plants are scheduled for 2025, including those of Jubai 3A and Jubai 3B.

After being involved in the design of the Jubai 3A desalination plant, FCC has awarded us a new contract for the provision of design services in the framework of the tender for the construction of the Jubai 3B desalination plant. This plant will be located near the city of Al Jubail, on the Persian Gulf coast of Saudi Arabia. Desalinated water production will be 570,000 m³ per day. Our scope of work comprised marine climate and brine dispersion studies, as well as the design of the seawater intake and outfall. The design was successfully completed in 2020.

TPF is well positioned on the seawater desalination market in Saudi Arabia

Turkey

RAIL INFRASTRUCTURE

€
530
 million project

Çerkezköy-
 Kapıkule line
 v

The activity on the Çerkezköy-Kapıkule line construction site has gained solid momentum this year. Work has exceeded the 30% progress rate.

This rail project includes the construction of a double track railway line with a design speed of 200 km/h. It has a value of 530 M€ and will operate both passenger and freight trains. The 152 km ETCS Level 1 fast train track will start at Çerkezköy and end at the Bulgarian Border. The project is co-funded by the European Commission and the Republic of Turkey with a giant 270 M€ grant from the EU under the Instrument for Pre-Accession Assistance.

As the FIDIC Engineer, TPF performs supervision services along with the design

of three stations and the track between Kapıkule and the Bulgarian Border, including signalling and electrification works.

This important project is the final stage for the connection of Turkey to the Trans-European Transport Network and will be part of the One Belt One Road Initiative that would stretch from Asia to Europe.

Construction work on the Ankara-Istanbul high-speed line is almost complete.

With a progress rate of 97%, the work is expected to be finished in 2021. Our team of consultants will assist the Project Implementation Unit (PIU) until the line is commissioned.

They will also assist in the design of the new light rail line between Yıldırım Beyazıt University and Çubuk, in the Çubuk district, one of the main districts of the Ankara agglomeration. The project underwent some changes at the request of the Client (the original idea was to build a metro line) and a time extension was granted.

In recent months, two other projects have been implemented: the modernization of the Boğazköprü-Yenice and Mersin-Toprakkale railway lines, as well as the 54 km rail link between Adapazari and the Port of Karasu. It is now time for the final acceptance phase of the work.

As the Consultant in one of the core railway infrastructure projects in Turkey funded by the World Bank, TPF came to an end in its successful journey in the supply and installation of a traffic management system and station loop extensions for the line sections of Boğazköprü-Yenice and Mersin-Toprakkale. After the completion of loop extensions, the modernization of the existing conventional railway line and the commissioning of telecom and signalling systems, the works have been accomplished. Our mission: quality control and contract management on behalf of the client.



Vietnam



URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

Hanoi Metro Line 3 will be 12.5 km long and will have a maintenance depot and twelve stations in total.

The total investment amounts to 1,127 MEUR and has been financed with multilateral funds. TPF is responsible for advising the Client on all aspects related to the construction of a metro line, including overall project management, financial management, tunnel construction, railway systems, environmental protection, occupational safety, resettlement, gender and communications.

Belgium

BUILDING - URBAN PLANNING

As part of the redeployment of the Centre de Communication Nord (CNN) in Brussels, the multidisciplinary consortium bringing together TPF Engineering and Arcadis will provide consulting engineering missions in technical building services, EPB and BREEAM/WELL/WIRESCORE support.

These tasks were entrusted to us by the CNN Development consortium (AG Real Estate, ATENOR and AXA IM - Real Assets).

The aim is to develop a mixed project combining housing, shops, administrative services and equipment of collective interest on the site currently known as CCN and adjacent to the North station in Brussels.

The year 2020 was used to prepare the preliminary draft. Permit applications will be submitted during the year 2021 and the first works could start in 2021.

Also in Brussels, a new future is gradually emerging for the former Cité Administrative with the RAC4 project currently underway.

This large-scale plan concerns the renovation and construction of a real estate complex respecting the 2016 passive EPB requirements: 39,000 m² of housing (455 apartments), 7,318 m² of stores, shell completed, and 32,725 m² of parking.

Studies relating to the construction of the Oratoire Nord and Oratoire Sud buildings (in total, 150 apartments and 6 shopping areas) have been completed, as have those relating to the car park. Work on the car park can begin in 2021. Other studies will have to be carried out to complete the project.

The consulting engineer mission entrusted to us by association RAC4 Développement (Immobel, Skyline and Triple Living) concerns technical building services and EPB.



RAC4 project
© Jaspers-Eyers
Architects





In Anderlecht, nearby the Erasme hospital, the “Erasmus Garden” project is progressing well. This new district is built with sustainability in mind and should eventually accommodate around 3,000 people.

This project is implemented by the real estate company Erasmus Garden. TPF was entrusted with a mission to act as consulting engineer in structural engineering and technical building services, as well as the EPB mission for two lots: Lot B2 of 60 apartments (gross above-ground area of 5,998 m² and gross basement area of 2,000 m²) and Lot I of 90 apartments (gross above-ground area of 8,993 m² and gross basement area of 2,800 m²).

Construction of building B2 was completed in 2020 and studies relating to Lot I are currently underway.





In Seneffe, along the old canal

There are plans to create a new district combining shops and housing on a plot of 29,200 m².

Promoter Equilis sa entrusted TPF with the mission to act as a consulting structural engineer.

This ambitious project will be carried out in three phases and will offer 21,092 m² of housing, 2,095 m² of shops and 6,280 m² of parking spaces. The first phase is currently in progress and includes the construction of a basement level mainly allocated to car parks, the entire commercial area and 4 housing lots. Stability studies for phases 2 and 3 are in progress.

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New district
"Les deux Ecluses" /
Seneffe
© Guillissen et
Roba Architectes



In the heart of the Saint-Gilles municipality, the renovation and extension project of the “Les Tilleuls” care home, which began in 2019, is continuing.

The work we are supervising takes place in several phases in order not to displace residents, and to limit disturbance to residents as much as possible.

The 5,468 m² extension has two wings. The left wing is expected to be completed in March 2021 and the right wing a little later. The low-energy renovation of the existing building, with an area of 6,229 m², will take place after that.

Let's take a moment to look at this new financial education center unique in Europe, the Wikifin Lab, located 8 rue du Congrès in Brussels. It is located next to the mansion used by the FSMA (Financial Services and Markets Authority). The complex was inaugurated on September 8, 2020.

The FSMA had entrusted us with a mission to act as consulting engineer in structural engineering and technical building services. This interactive and digital financial education center is intended for secondary school students. They will be presented with entertaining training opportunities while experimenting with various financial issues.

This project involved the renovation of an existing building, and behind it, the construction a multipurpose space housing an auditorium, changing rooms, sanitary facilities and a cafeteria with 40 seats.

Inauguration of the Wikifin Lab on September 8, 2020



In the Tournai area, more specifically in Saint-Maur, the industrial site of the former Delwart cement factory will be rehabilitated to create housing, shops and a reception center for disabled people.

An old concrete building will be demolished to build this new center, which will be home to 48 people with disabilities. This center has a gross area of 11,577 m² and will offer four living units with bedrooms and individual bathrooms. The old furnace building will also be demolished to construct a building of 39 apartments (6 levels). Finally, the street-front building will be rehabilitated to fit out three triplex lofts.

DUKA-IMMO sa has appointed TPF to work on this project as an EPB advisor as well as a consulting engineer in technical building services.

The studies were carried out in 2020 and work will begin in the first quarter of 2021.



This year, our teams in structural engineering and technical building services have completed the study for restructuring the Tournai Expo infrastructure, and will control work execution starting in the first quarter of 2021.

The framework and the pyramid of the building will be preserved, while the main entrance will be moved. The interior of the building will be completely revamped and composed of a modular exhibition space (exhibition areas of 3,500 m² and 5,000 m²), a meeting center (three meeting rooms, the largest of which is 40 seats, multimedia area, etc.), a shared kitchen, a fully reconfigured restaurant and an administrative area.

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Rehabilitation of the
former Delwart cement
factory / Tournai
© Atelier d'architecture
Meunier-Westrade scprl

Tournai Expo
© H&V Architecture

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"Les Tilleuls" care
home / Saint-Gilles
© Altiplan Architects

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Wikifin Lab /
Brussels © Arter -
Thomas Preuvot





In Ramegnies-Chin, the Antour farm is being transformed to set up a center for adults with disabilities.

Within the framework of this ambitious project, the company S&V INVEST SA entrusted us with a mission of consulting engineer in technical building services. The project is broken down into two phases. The first concerns the development of existing buildings A, B, C and D: 4 living units each accommodating 10 people, 3 enclosed gardens, 1 professional kitchen with restaurant and parking. The second concerns the construction of a new building (building E): reception, multipurpose sports area, multisensory “Snoezelen” area, covered hall and swimming pool.

The studies have been completed and the work began at the end of 2020.



In the food industry, the specialist in potato peeling and chip making VAN COLEN, currently located in Rosoux Crenwick, wishes to open a new factory in Geer in the province of Liège.

The objective is to build a new 6,500 m² factory transforming potatoes into fresh French fries intended for chip shops and community restaurants.

Regarding the treatment of wastewater, the plan is to install a purification station

(15,000 PE) on the production site with a sludge and starch recovery process.

TPF and the Arcoteam architectural office were initially tasked with carrying out the study, establishing the planning permission request, and designing the buildings.

We were also asked to put together the application file for the environment permit and EPB.

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Antour farm
© Atelier
d'architecture Meunier-
Westrade scprl

>
Van Colen factory /
Geer

MAINTENANCE AND OPERATION OF TECHNICAL INSTALLATIONS

Over the next ten years, TPF will be called upon to execute the various contracts binding us to the Belgian Armed Forces (Defense).

Maintenance and operation of technical installations linked to the Defense infrastructure over the next ten years

The contracts we have signed relate in particular to the technical installations of the military district in Melsbroek, where the Airbus A400M Atlas transport planes will now be stored, from the Florennes air base which should accommodate the first F-35 fighter planes in 2025 as well as the Defense helicopter base located in Beauvechain. Finally, TPF was able to win the contract for the technical management of the Defense headquarters in Evere.

Improving energy efficiency to reduce energy consumption is an important part of our mission. TPF has therefore developed energy monitoring software which has been put on the Belgian and French market.



The switch to LED lighting is progressing on all Walloon roads and highways.

We are very pleased with the progress of this vast project which is going faster than expected.

Modernizing public lighting in SOFICO's structuring network is not limited to replacing sodium bulbs with energy-saving LED lighting; the project also includes the installation of adaptive lighting (called "dimming") allowing the gradation of light intensity according to the density of traffic.

As part of this work, we were asked to carry out a lighting study and carry out measurements in the field (poles, lights, cables).

France



BUILDING - URBAN PLANNING

TPF has once again confirmed its expertise in the field of Health by winning a project management mission alongside AIA Life Designers, aiming to reconfigure and modernize the Meaux Saint-Faron hospital site.

This new structure is aiming for environmental excellence thanks to a low carbon design (use of bio-based materials) and renewable energies (geothermal energy, solar panels). With a surface area of approximately 45,000 m² (including 12,782 m² of restructuring), it also incorporates issues related to health crises.

The project provides in particular:

- the construction of a new main building of 31,052 m² spread over 4 levels (medico-technical services, medicine, surgery and adult psychiatry);
- the construction of an "Energy" building of 1,929 m² which will meet the needs of the new building and of the existing buildings kept on the site;
- the complete restructuring of building B (current medicine building with an area of approximately 12,782 m²) with the aim to accommodate a day hospital, diagnostic and assessment activities, and medical offices.

This large-scale operation will increase the hospitalization capacity to 461 beds.

Energy renovation of buildings is a priority

Meaux Saint-Faron
hospital site
© AIA Life Designers /
C. Wallon



One of the highlights of the year was without context the delivery of the MORAX building as part of the construction of the new Lariboisière Hospital.

Construction for which we provide structural engineering, roads and networks, acoustics, demolition / asbestos removal within the project management group led by Brunet Saunier Architecture.

This first new building of approximately 3,600 m², called "Nouveau Morax", brings together all the players in technical, IT and biomedical management. Construction to the south-east of the plot is an essential prerequisite for the construction of the new Lariboisière building, which will develop nearly 39,000 m² by 2025.



In Marseille, TPF is supporting the Assistance Publique-Hôpitaux de Marseille (APHM) in managing the construction project of the Women-Children Pole on the site of the Timone hospital, through a project owner technical support mission.

This new complex of more than 30,000 m² will bring together a maternity unit, a pediatric hospital, a hyperbaric service and the associated logistics. It is part of a global sectoral market including design, construction, fitting out, servicing and maintenance.

On the Purpan hospital site, the Toulouse Hospitals entrusted us with a complete project management mission for the major restructuring of the 10,000 m² of the U2000 building.

The objectives of the project are multiple: to modernize and bring together the units of Physical Rehabilitation Medicine and Rehabilitation Care of the neurosciences department, to relocate palliative care and their mobile team, to modernize the Medico-Legal Institute, to relocate the Medico-Judicial Unit in the city center, to

strengthen the Institut Toulousain de Simulation en Santé and improve the visibility and accessibility of the building.

The work will be carried out on an occupied site in order to maintain operations of the Institut Toulousain de Simulation en Santé on the patio floor of the building.

In Lille, the Regional University Hospital Center (CHRU) intends to expand the central pharmacy for indoor use in order to accommodate the RIVA robot.

In 2020, TPF won the project management contract for the extension of the pharmacy.

Our mission is to ensure the design of the premises and installations necessary for the operation of the robot in compliance with the specific conditions to produce cytotoxics.

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Hydropolis
© REC Architecture

In Montpellier, TPF is participating in the ambitious Hydropolis project. This brings together all research capacities focusing on water.

The objective is to promote cooperation between manufacturers and research teams in order to facilitate technology transfers.

For the Montpellier Pharmacy Campus, the Hydropolis-Research project results in the redevelopment of the southern part of the site:

- Restructuring the 1,250 m² building (US) in order to transform the current laboratories into tertiary spaces;
- Construction of a new 2 storey building to accommodate the hall, reception, laboratories and collaborative spaces over 1,909 m² of useful space;
- Selective deconstruction of the L Building

The University of Montpellier has entrusted us with a complete project management mission to design and monitor the work.



In the process, alongside the Lyon agency Rue Royale Architects, we won the project management mission for the construction of the mixed real estate complex Ilot Suchet in Lyon Confluence.

This new block aims to convert the abandoned railway right-of-ways in the Confluence district.

The program provides for 73 housing units, offices, shops, a nursery (48 spaces) as well as an underground car park for a total surface area of 9,300 m².

The project is also the subject of an ambitious environmental approach: BEE certification grade Habitat Qualité, low carbon E3C1 label, energy performance level of RT2012 -20%, compliance with the Sustainable Habitat and New Sustainable Offices standards of the Lyon Metropolis.

In the tourism sector, we support the prestigious Château de Pomard estate in its development project through a project management assistance and execution management mission.

This year 2020 marks the start of work which will allow the complete renovation of buildings, some dating from the 18th century. The site's castles will host a luxury hotel and a restaurant as well as the entire wine-making operations.

The project also provides for the development of offices, tasting and reception areas, as well as a wine education center.

^
Ilot Suchet /
Lyon Confluence
© Rue Royale
architectes

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Château
de Pomard
© Château
de Pomard

In Reims, promoter NACARAT entrusted us with the all-trade engineering mission for the construction project of a Hotel-Office complex on the mixed development zone ZAC Sernam lot A3 site.

The 4* hotel under the RED RADISSON brand will host 100 rooms, a restaurant, a kitchen, an office, coworking rooms, an office space, a rooftop, and co-living rooms.

The tertiary part will consist of 7 floors, 4 office areas and an open space type ground floor.

This project is part of the creation of the new mixed development zone ZAC Sernam developed by the city of Reims and built near the future ARENA and the future swimming pool / ice rink complex.

In the field of sport, we can mention our participation in the restructuring project of the Gabriel Thibault stadium in Villejuif.

The project management group A5A Architects / TPF was awarded the complete restructuring of the stadium. This project aims to optimize conditions for students, and to support the development of sports and social initiatives in the region.

In the field of retail, the restructuring of the “Centre Sud” shopping center in Le Mans and the transformation of 101 ALDI stores made the news in 2020.

In Le Mans, the restructuring of the shopping center was completed this year to the great satisfaction of Constructa Asset Management. The complex now has more than 17,000 m² of surface area and offers a catering center opening on the

exterior terraces of the gallery, combined with a space dedicated to sports & leisure activities.

As part of the transformation of the Leader Price park by ALDI, TPF continues to carry out audits, studies, and work execution in 101 stores.

On behalf of the Ministère de l’Intérieur / SGAMI Nord, TPF is carrying out all technical studies within the consortium led by SCAU for the construction of the new Amiens Police Station, a building with over 8,000 m² of floor area.

The new 2 storey building will host the activities of the Departmental Directorate of Public Security of the Somme (DDSP 80), the Amiens branch of the Judicial Police (PJ), a State Service and the Departmental Service of Territorial Intelligence (SDRT). The project also includes an ammunition depot and a 6-point shooting range.

The operation is part of a desire for HQE Sustainable Building certification associated with an E+C- approach (targeted level E3C1), which implies technical performance above the minimum requirements, environmental monitoring as well as a specific operational procedure.

Police station /
Amiens © SCAU
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In Arromanches-les-Bains, reconstruction work on the Landing Museum can be started. The studies are now complete.

The project is designed by PROJECTILES, lead architect, and will allow the development of a new scenography while guaranteeing a better reception of the public, as well as optimal conditions for the conservation of collections.

The museum and its surroundings will also be redesigned aiming for better urban integration. Delivery is scheduled for 2023.

Let us wrap up with the July inauguration of the new headquarters of Schindler France in Vélizy-Villacoublay.

The Le Quartz building now accommodates 200 employees of their head office. TPF was responsible for the all trade design of this 4,600 m² building. It should be noted that this project is exemplary from an environmental point of view since it has obtained the BREEAM Excellent label.

MAINTENANCE AND OPERATION OF TECHNICAL INSTALLATIONS

The establishment of an operating contract is essential to ensure the sustainability of technical and heating installations, whatever the type of building.

And as such, TPF won project owner support and operation monitoring for the heating installations that supply 3,300 housing units in La Seyne-sur-mer.

The mission entrusted to us by the Public Housing Office "Terre du Sud Habitat" consists of the technical and administrative monitoring of operating contracts, the definition of an "emergency" work program, and the definition of a multi-year investment plan over 10 years.

In Saint Saulve, Ascoval is one of the most modern steelwork factories in Europe and has entrusted us with the management and monitoring of its thermal installations for a period of 4 years.

The company produces continuous casting rings of various diameters, billets and blooms in carbon and alloy steel (up to 13% Cr).

In order to generate vacuum in its tanks for the manufacture of special steels, 2 steam generators of 6.5 MW each produce steam up to 22 bars.

At the heart of the European metropolis of Lille, TPF has signed a multi-technical contract with Fives ECL, a subsidiary of the Fives industrial engineering group, for the management of its building installations.

The Lille equipment manufacturer develops machines intended for aluminum producers and is located in Ronchin on a 36,000 m² site.

TPF won the Facilities Management building management contract bringing together technical services and services such as heat production, aeraulic networks, cold production, CTM, safety, electricity, fire, intrusion, and environment.

Environmental preservation and enhancement of natural spaces



ROAD INFRASTRUCTURE

The inauguration of the cycle lane-greenway of the Haute-Seine canal in July is a great achievement for TPF, which had been entrusted with project management, but also great for cyclists who will take this route.

The development of this 21 km cycle route is part of the departmental plan for cycle routes and greenways of the Marne which provides for the construction of 820 km of cycle routes.

The operation was carried out with a view to preserving the environment and enhancing natural spaces.

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Ascoval /
Saint-Saulve





AIRPORT INFRASTRUCTURE

The work site set up at Nice airport was initiated in November. The pavement of almost all the North runway and Echo-Golf taxiway of the Airport will be rehabilitated.

In 2020, TPF carried out the studies necessary for carrying out the works within the framework of a design-construction contract alongside COLAS (authorized agent).

The works on the North runway include the repair of the roadway and any work involved regarding lighting and marking on the ground. The works concern a 2,420 m section of runway.

Concerning the Echo-Golf taxiway, this involves the revamping of the runway structure, the lighting as well as associated networks. All the surfaces of the Echo-golf taxiway and part of the shoulders will be taken over.

The work is carried out in accordance with EASA constraints (European Union Aviation Safety Agency).

ENVIRONMENT - LAND USE PLANNING

The TPF - Urbanica - TransMobilités consortium has been entrusted with the drafting of the new master plan for the Sophia Antipolis technology park.

The technology park was created in 1969 and covers five municipalities. Since last year, it has been labelled "Interdisciplinary Institute of Artificial Intelligence" (3IA), it is home to nearly 40,000 employees.

The work is carried out for the Sophia Antipolis Agglomeration Community, in consultation with the State services, the Sud-Provence-Alpes-Côte d'Azur region and the Center for Studies and Expertise on risks, environment, mobility and development (Cerema) based on a call for expressions of interest on "sustainable neighborhoods", for which the Casa was a winner.

This involves highlighting the challenges considering the latest regulatory developments in environmental matters, flood and fire risk management, and developing a master plan based on previous studies and in particular the Sophia 2030 approach.

ENVIRONMENT - WATER

In Cannes, the program for the embellishment and redevelopment of the prestigious Boulevard de la Croisette initiated since 2017 by the City of Cannes and the Communauté d'agglomération Cannes Pays de Lérins (CAPL) is taking shape.

The TPF / Safege / GNI consortium won the project management mission for the restructuring of the networks on Boulevard de la Croisette in Cannes.

The operation covers a length of approximately 1.5 km and includes the restructuring of approximately 11 km of wet networks (wastewater, rainwater, drinking water), the creation of 5.8 km of heating networks using thalassotherapy, the creation of a multitubular unit for network operators and the diversion of associated licensed networks.

Grand Duchy of Luxembourg

BUILDING - URBAN PLANNING

TPF was entrusted with a mission by SA IRET PROMOTION Luxembourg to support it in the realization of the real estate project "Les Terres Rouges" in Belval.

Our Luxembourg team will assume the role of consulting engineer in technical building services, CPE (energy passport) and BREEAM assistance for building F, a building (7 storey) housing offices over a total of 10,850 m² and four parking levels in the basement.

Detail design started this year and will continue in 2021.

In Dommeldange, on the banks of the Alzette, IMMOBEL Luxembourg is developing a brand new district.

The project is located rue Nennig and provides for the construction of a mixed housing complex combining housing (in home ownership and co-living), offices and shops. The operation also includes hanging gardens, a car park and common premises in the basement, the development of outskirts for private use and retention basins. In total: 8,000 m² above ground and 3,400 m² of basement.

TPF was entrusted with detail design for technical building services, CPE (energy passport) and structural engineering. These started in 2020 and will continue next year.

In the new business district in Hamm, near Luxembourg City, the Connection building site is in full swing.

This building (4 storey) has a surface of approximately 71,991 m² and is made up of shops, lecture halls and a restaurant on the ground floor and on level -1, offices on the upper floors, a car park on levels -2 and -3 as well as storage spaces on levels -4 and -5.

TPF is acting as a consulting engineer in technical building services and structural engineering on behalf of the client Silverfinch SA.

Work began in 2019 and will be completed in 2022.

Connection / Hamm
Greenfinch Global
Investment Fund ©



ArcelorMittal's new headquarters made of steel and glass



800
employees
55 000
m²

TPF is also participating in the construction project of ArcelorMittal's new headquarters on the new Kirchberg in Luxembourg.

The technical engineering mission entrusted to us relates to heating, air conditioning, ventilation, plumbing, sprinkling, high current / low current electricity, safety and smart building installations.

The building, designed mainly in steel and glass, will house around 800 employees and will develop 55,000 m².

The project exploits the full potential of steel and includes many technical innovations (office floors and ground floor space with no posts, by using a suspended steel exoskeleton, curtain wall entirely made of steel, new profile sections adapted from products designed for the automotive sector, etc.).

This is an ambitious and daring sustainable development program ("cradle to cradle" concept, BREEAM Excellent certifications, DGNB Silver, BBKA's approach, WELL Gold v1).

TPF has remained very active in other segments of the real estate market such as schools.

The construction project for the new Interact school center in Dahl (municipality of Goesdorf) on which we are working with Scaht Architecture is progressing well. Its opening is scheduled for the second half of 2021.

This large-scale project includes a school center (primary school + nursery for 3 x 30 children), an integrative structure for 200 children (relay house) as well as a sports center.

A dedicated team has been set up for the mission of consulting engineer in technical building services and EPC.

Greece

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

The city of Thessaloniki will soon acquire an automatic driverless metro network. The work progressed at a good pace this year.

This project falls under the priority guidelines for "Sustainable development and quality of life in Central Macedonia". It is expected to significantly reduce pollution levels and improve road safety.

TPF, together with an international consortium, is responsible for the supervision of the civil works, railway systems, stations and rolling stock.

The contract comprises the Line 1 or "Base Line", which totals 9.6 km and includes 13 stations, and the Line 2

or "Extension Line to Kalamaria", with a length of 4.8 km long and 5 stations.

The system consists of two parallel single-track twin tunnels with island platform stations, all fitted with platform screen doors and driverless trains.

The state-of-the-art Operation Control Center will be located at the Pilea depot.

An automatic
driverless metro
network



Poland



This project was awarded the BREEAM “Very Good” certification

BUILDING - URBAN PLANNING

The work started in autumn 2019 on the campus of the Warsaw University of Medicine (Warszawski Uniwersytet Medyczny - WUM) resulted in the creation of a state-of-the-art medical simulation center.

Developed in collaboration with McGill University in Montreal, this new 21,400 m² center (five floors above ground, two underground parking levels) is intended for research and training of doctors, nurses, and paramedics. It contributes to improving the quality of medical education in its practical aspects, by promoting the professional immersion of students in hospital life.

This new infrastructure has several simulation rooms featuring high-tech equipment (patient simulators, surgical techniques, ultrasound, etc.) for operating theaters, delivery rooms, emergencies, virtual reality laboratory and Objective Structured Clinical Examinations (OSCE) rooms. The works were carried out under the supervision of TPF.

National bank of Poland / Warsaw
 v



In Warsaw, the National Bank of Poland will soon be undergoing renovations.

More precisely, the historic pavilion of Block A (in total, 21,500 m²) will be renovated and partially rebuilt.

The facade will be renovated, and several adaptations will be made to the interior of the building in order to meet the contemporary needs: bank area, commercial space, services and office area.

We are currently in the permit phase. Our team was entrusted with the detailed design, the coordination of all trade operations and work monitoring.



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Medical simulation
center / Warsaw

Railway station renovation projects are on the rise

Many projects are already under development or under consideration.

And in this regard, TPF has won several design contracts with the Polish railway company, Polskie Koleje Państwowe (PKP).

This essentially involves renovating the facades of buildings and interior spaces to adapt the stations to traffic and safety standards in force in the country, and to offer greater comfort to travelers.

Several stations need to be redesigned and rebuilt such as Among Włocławek, Olsztynek and Gdańsk Wrzeszcz, and their surroundings redeveloped (parking lots, green spaces, roads). Other historic buildings need to be renovated such as the stations in Węglińiec, Łuków, Gdańsk - Oliwa, Władysławowo, Reda and Puck.

Work could start this year in Węglińiec, Włocławek and Olsztynek.

Włocławek
railway station
v





ROAD INFRASTRUCTURE

If we had to point out just one major road infrastructure project that we have been working on this year, we would immediately cite the construction of the road section of the S6 expressway between the towns of Goleniów and Kiełpino, in West Pomerania, in the northwest of the country.

The S6 construction project is funded by the European Commission as part of the cohesion policy. This motorway should make it possible to connect Szczecin to Gdańsk, in the north-west of Poland, as well as the country's main ports. It is part of the road transport corridor from Western Europe to the Kaliningrad region (Russia) and the cities of Kaunas and Vilnius (Lithuania).

TPF supervised the construction of the 55 km 2x2 lane section between Goleniów and Kiełpino.





RAIL INFRASTRUCTURE

Warsaw Agglomeration Railway Junction is a key point of rail transport in Poland, providing connections with different passenger transport options, being of paramount importance for the entire country's public transport system.

TPF was awarded the contract for supervision of relocation and discharge of Warsaw's rail traffic volume during the planned modernization of city's central railway line between East and West Warsaw stations. The goal is to take over the whole long-distance train traffic in the city.

The refurbishment would allow "Warszawa Gdańska" to adapt the passenger's infrastructure to increased traffic of CPK and travellers routed from all other major stations during their modernisation.

Warszawa Gdańska Railway Station is also a part of implementation process of CPK: construction of communication routes network for the "Solidarity Air Transport Hub" – new development meaning large increase of rail transport and passenger traffic in Central Poland.

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Warszawa Gdańska
railway station /
Warsaw

Portugal

BUILDING - URBAN PLANNING

In terms of housing, in Cascais, the OneLiving building site that we supervise for real estate developer Teixeira Duarte Real Estate is making good progress.

Ultimately, this very ambitious project will include 20,000 m² of residential housing divided into two lots (13,000 m² and 7,000 m² of floor space) and 10,000 m² of outdoor spaces dedicated to leisure.

In addition to work supervision, TPF was also entrusted with the review of construction design. Our mission should be completed during the year 2021.



Projeto imobiliário
OneLiving / Cascais

In Lisbon, we are particularly passionate about an ongoing mixed-use real estate project: the Parque Oriente.

It covers an area of 43,578 m² of shops, offices and housing divided into 13 lots, to which 28,502 m² of underground parking will be added.

TPF is involved in this project as a technical design office specializing in BIM.

Tourism real estate is also very active and TPF is playing its part. In addition to the Fornos Meco tourist complex in Semimba, our company is also participating in the development of the two largest tourism projects currently underway in Portugal, namely Comporta Links and Comporta Dunes.

The Comporta Links tourist complex in Grândola will develop over 365 hectares and the Comporta Dune tourist complex in Alcácer over 551 hectares.

TPF has sent its best specialists to review construction design and the urbanization permit file including all infrastructure works (roads, water and sanitation distribution networks, electricity and gas, wastewater treatment plants, outdoor facilities).

>
Fornos Meco tourist
complex in Semimba





Participation in the development of the two largest tourism projects, Comporta Links and Comporta Dunes

Regarding office property, TPF is participating in the creation of an International Center of Excellence on Water management which will be located in Lisbon: LIS-Water (Lisbon International Center on Water).

LIS-Water will be located on the campus of the Portuguese Civil Engineering Laboratory (LNEC) in a 2,600 m² building completely renovated and adapted to its needs, comprising 2 floors and a basement level.

LNEC Laboratory has entrusted TPF with the design study of this new center, which will be carried out in BIM.

As for the new head office of SGS (Sociedade Geral de Superintendência) which is currently under construction on lot 11 of the Technopôle in Lisbon, things are progressing well.

This new building is totaling 7,704 m² (three floors above ground, 2 underground parking levels) and will be located on a plot of 1,779 m². It will house the inspection center on level 0, the SGS offices on the 1st floor and the laboratories on the 2nd floor.

Our team of engineering specialists provide technical support for the duration of the work currently in progress.



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[LIS-Water / Lisbon](#)

<
[New head office of SGS / Lisbon](#)



The municipal aerodrome of Cascais, also called Tires Airport, wishes to expand.

TPF was asked to carry out the design studies for the new two-storey building intended to house the airport services, the customs control area as well as the

area used to manage the access control of passengers on national and international flights.

This 1,500 m² extension will increase the airfield's capacity and allow the opening of new air routes.

Our team of experts will use BIM, a tool that is now essential in the construction sector.



ROAD INFRASTRUCTURE

In Madeira, work on the second phase of the Fajã da Ovelha - Ponta do Pargo expressway should be completed by autumn 2021.

This phase of the work covers:

- the construction of a 5.7 km section,
- the construction of several structures (6 bridges and viaducts, 4 overpasses, 6 reservoirs for irrigation and fires);
- landscaping;
- essential connections with the existing network (4 roundabouts and 11 branches);
- the construction of 6 rehabilitation structures.

It should be noted that the technical support mission carried out for the Regional Government of Madeira (Regional Equipment Secretariat) concerns work supervision and safety coordination on the work site.

The public company IP-Infraestruturas de Portugal called on our services as part of the inspection campaign for structures in the northern zone of Portugal (2020 - 2021).

These structures deserve special attention both for their conservation and for the safety of users.

Inspections must be carried out within nine months according to the SGOA management method (Sistema de Gestão de Obras de Arte - civil engineering structure management system) set up by IP-Infraestruturas. These inspections will make it possible to determine the state of health of structures and to take the necessary measures if deterioration is observed.

RAIL INFRASTRUCTURE

The vast construction site of the new railway line Évora-Elvas, started in 2019, is progressing well.

This connection of approximately 88 km will be an essential part of the International-South corridor, part of the TEN-T network, connecting Lisbon to the Spanish border near Badajoz, the European rail network and the main ports of Portugal.

No less than 200 technicians are currently working on this project, as health and safety coordinators on the site or as civil engineering works supervisors.

The construction site was divided into four sections: 9 km between Évora (station) and Évora Norte, 20.5 km between Évora Norte and Freixo, 20.5 km between Freixo and Alandroal and 38.5 km between Alandroal and Elvas (connection with the Eastern line).

The construction of this new single-track electrified line also involves the development of three technical buildings, 55 current and 29 non-current engineering structures, as well as the completion of the necessary improvements for a future doubling of the tracks.

Évora-Elvas
line
v



4
railway
sections
-
88.5 KM



Lisbon
Porto

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

Many changes are taking shape in Portugal, and the extension projects of the Lisbon and Porto metros will greatly contribute to these changes.

In Lisbon, the Metropolitano de Lisboa, EPE entrusted us with the review of the design study for the extension of the metro in the capital.

This involves constructing a new 1,984 m long double-track tunnel between Rato and Cais do Sodré comprising two new stations (Estrela and Santos) and building two new viaducts at Campo Grande. These works will enable a circular line integrating the green line and the yellow line, which were previously independent.

A multidisciplinary team will tackle this task for 46 months.

In Porto, TPF was chosen by the Metro do Porto to monitor and control the execution works of the Rose line between Praça da Liberdade and Casa da Música.

This new extension involves the construction of a 3 km double-track tunnel comprising four stations. It will serve the central areas of Porto and undoubtedly generate social and environmental benefits.

The TPF teams mobilized on this work site during the construction phase will also be present to ensure the commissioning of the new section.

Hydraulic, solar
and wind
energy: TPF has
become a key
player in the
ecological
transition



ENVIRONMENT - WATER

Studies relating to the issue of wastewater discharge into the Atlantic Ocean, near the Tagus estuary (Tejo Atlântico), are making good progress.

The project concerns the discharge of both industrial and domestic wastewater. The objective is twofold: the ecological rehabilitation of the river and the improvement of the quality of bathing water.

The studies we are carrying out for Águas do Tejo Atlântico, the company in charge of the management and operation of inter-municipal wastewater treatment plants in Greater Lisbon and the West, concern the river towns of Cascais, Sintra, Oerias, Amadora, Mafra, Lisbon, Loures, Odivelas, Vila Franca de Xira, Arruda DOS Vinhos and Sobral de Monte Agraço.

The circular economy is becoming more and more important. As Águas do Tejo Atlântico has understood, the reuse of treated wastewater has become an essential issue for sustainable development.

In this context, TPF was awarded a new study contract on the valuation of resources from wastewater treatment in the

intervention area of Águas do Tejo Atlântico: energy recovery from treated effluents, reuse of treated wastewater for crop irrigation, for example, transformation of sludge into biogas (green energy source).

Our team of technical experts is particularly glad to be associated with this brand-new adventure which should last a total of three years.

Within the framework of the ambitious multi-purpose project of Alqueva (EFMA), we have continued this year the management and the supervision of connection works for the water supply system of Morgável and the improvement works for the irrigation infrastructure of the Cuban-Odivelas Block.

Essentially, the Morgável project includes the installation of the connecting pipe between the Roxo-Sado adduction system and the Morgável surge chamber, as well as the installation of the connecting pipe between the Morgável canal and the Fonte Serne reservoir.

As for the Cuba-Odivelas project, it aims to improve the infrastructure of a perimeter of 2,790 ha, located on the right bank of the Alvíto-Pisão canal.

TPF must also ensure health and safety coordination on site, topographical assistance, environmental monitoring, and revision of the as-built plans of the structures concerned.

Our mission should be completed by summer 2021.

In terms of flood control, TPF brings extensive experience to the project in Madeira. Back in 2010, our Portuguese subsidiary had worked to rehabilitate areas affected by the devastating floods that had hit the island.

This year, the Regional Secretariat for Equipment and Infrastructures of Madeira hired us to carry out the construction design necessary for the development of the river beds of Rocha and Ameixieria, in Serra d'Água.

This mainly involves installing slit dams in order to limit the transport of solid matter which can obstruct the normal flow of water.

This work is in line with the Government's ambition to fight against climate change and flooding, aiming to implement priority actions including the development of hydraulic structures.



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Water supply system
of Morgável

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Serra d'Água /
Madeira

ENVIRONMENT / WATER - ENERGY

For several years, TPF has been part of the development of the major hydroelectric project of Alto Tâmega composed of three dams (Alto Tâmega, Daivões and Gouvães). 2020 was no exception.

Our mission: construction design for accesses and roads, preparation of permit files, preparation of the tender documents and contract award documents, as well as construction work support.

At the same time, we were asked to revise the internal emergency plan for the Daivões and Alto Tâmega dams, to revise the simplified Gouvães emergency plan and to carry out the construction design for the control building of the Tâmega energy production system located in the Gouvães power station.

This year, we finalized the design studies for the Gouvães dam, including the ones for the access roads. In addition, we have also started developing the infill plan and the operating standards for the dam, work which will continue in 2021.

In addition, our hydroelectricians are involved in the Calheta hydroelectric development project, which has the particularity of being reversible.

The construction design we are carrying out concern the hydroelectric equipment for the connection of the compensation basin to the Coruchéu regulation reservoir and to the Calheta restitution reservoir.

TPF is also responsible for work monitoring and technical support.

The project provides for the construction of several structures, including: the dam at Pico da Uze, the Calheta III hydroelectric power station, the reservoir and the pumping station of Calheta

This investment will help achieve the objectives that Portugal wants to reach in terms of energy sustainability, mitigation of negative impacts of fossil fuels and energy dependence.



> Calheta hydroelectric project



In the field of photovoltaic energy, TPF is currently carrying out the environmental impact study for the Carregado project.

The plant is located in the municipality of Alenquer and is expected to reach a total power of 500 MW. The idea is to offer measures to eliminate, reduce or compensate the negative effects of the project on the environment and support the upstream and downstream decision-making process.

In the case of wind power, the development of projects is not without consequences on biodiversity, in particular for flora, avifauna and bats. It is therefore essential to take their preservation into account.

Within the framework of this problem, TPF is developing an environmental monitoring program (avifauna, flora and bats) in the area of the project to upgrade the Alto Minhor wind farm (2nd phase) in the district of Viana do Castelo, in the north of Portugal.

Drawn up ahead of the project, this reference document will make it possible to assess the impact of wind turbines on ecological systems, to control plant disturbances on natural habitats and to propose mitigation measures following impact assessment.

Romania

Sibiu-Pitesti
motorway,
the first
motorway to
cross the
Carpathian
mountains

ROAD INFRASTRUCTURE

The development of the Romanian transport infrastructure network is progressing step by step. Several projects are currently in the works to make up for the lack of highways in the country. And as such, we have signed several contracts with the Romanian national company for the administration of road infrastructure.

In Sibiu and Olt County, TPF is participating in the construction of two new motorway sections.

These are respectively the development of the Sibiu - Boita section of 13.17 km (km 0+000 - 13+170), the motorway linking the towns of Sibiu and Pitesti (lot 1) and the 21.3 km section (km 36+200 - 57+550) of the motorway linking the towns of Craiova and Pitesti (lot 2).

In both cases, TPF was entrusted with project management and supervision (during the design phase) as well as work supervision (throughout the duration of the work and the period of notification of defects).

These works are currently in progress.

In Arges County, the bypass on the west side of Pitesti City will provide a connection between the Craiova - Pitesti Expressway and the Sibiu - Pitesti Highway.

Our mission: the realization of pre-feasibility and feasibility studies, the preparation and approval of the funding application, the preparation of the tender documentation as well as assistance during the tendering period.

Near the town of Cormanic, in Brasov county, the studies we are carrying out for the construction of a road interchange on the Bucharest - Brasov Highway at km 115+800 are progressing.

This new development will create a connection between the highway and national road DN1.

The Romanian national road infrastructure administration company called on our services to study the feasibility of the project and to carry out the detailed design.



RAIL INFRASTRUCTURE

The group is continuing its development in Romania with its participation in major rail projects. Several lines are being modernized.

TPF, in association with ISPCF SA (Institute of Railways Projects Studies), has won a new contract for the rehabilitation of the railway section between the town of Roman and the border with Moldova.

This section is 140 km long and it will be improved for a 120 km/h speed for freight trains and 170 km/h for passenger trains, with double electrified line. The contract we signed with the Romanian National Railway Company (CFR) concerns the feasibility study.

Also, with its partner ISPCF SA, our Romanian subsidiary is studying the feasibility of the rehabilitation project for the railway section between the city of Pascani and the city of Darmanesti, in the county of Suceava.

This section is 71 km long and it will be improved for a 120 km/h speed for freight trains and 170 km/h for passenger trains, with double electrified line.

We know that TPF also excels in supervisory functions and it proves it again with the contract won for the rehabilitation of the railway section between the city of Brasov and the city of Sighisoara.

The works on this 880 km section will allow trains to circulate on an electrified double track line at a speed of 120 km/h for freight trains and 170 km/h for passenger trains.

Spain

BUILDING - URBAN PLANNING

The recent success of TPF in the logistics zone of the Port of Barcelona El-Prat (ZAL Port) confirms our know-how in the logistics field.

In 2020, TPF completed the design of a warehouse for the storage and distribution of cold and frozen food products for e-commerce and reverse logistics, including the central offices of Caprabo in Barcelona.

The building has a surface area of approximately 24,500 m² and it is located in the intermodal logistics platform of the Port of Barcelona.

Note that the warehouse has been granted LEED Gold certification by the US Green Building Council (USGBC). TPF is proud to have carried out the detailed design of the building, as well as construction management.

Caprabo warehouse
(ZAL Port)



In Madrid, TPF completed the detailed design for the interior renovation of the Biomedical Research Institute of La Paz University Hospital (IdiPAZ).

With a floor area of 1,500 m², the IdiPAZ aims to become a national and international reference in translational biomedical research, promoting high quality research at fundamental, clinical, epidemiological, and healthcare levels. In addition to the encouragement and development of research programs and projects, the Institute will be devoted to the scientific training of professionals in research methodology, with special attention to the needs of primary health care.

The building will house training and simulation rooms for doctors and researchers, including an operating theatre, an intensive care unit, a hospitalization room, and a multipurpose room for practicing with laparoscopy or similar devices.

In Tarragona, the construction of the new prison is currently underway. It will replace the old prison which is still in operation.

TPF role in the project includes quality control of materials as well as control of the MEP systems during both project phases. The scope of Phase 1 encompasses earthworks and structures, whereas Phase 2 will be accomplished upon completion of building construction works, interior finishing work and installation of MEP systems.

Finally, it should be noted that our department specializing in infrastructure and urban planning has won two new contracts in the Barcelona metropolitan area.

The first project is supported by the Regional Government, the Metropolitan Area of Barcelona and the City Councils of Cornellá, Sant Boi, Viladecans, Gavá and Castelldefels. It concerns the integration of the C-245 road within the urban and metropolitan environment and the construction of bus and cycle lanes. TPF has been appointed by the Government of Catalonia, via the Department of Spatial Planning and Sustainability, to ensure the quality control of the works.

The same mission was entrusted to us by the Municipal Company of Viladecans as part of the urban development project of the Llevant Sector.

Demand for rail and public transport continues to increase

URBAN TRANSPORT

METRO, LIGHT RAIL, TRAM, BUS RAPID TRANSIT (BRT)

The modernization of line 1 of the Barcelona metro, more particularly the section between Clot station and Fondo station, is already well underway.

TPF continues with the supervision of the works undertaken in the Barcelona Metro. The scheme involves upgrading a stretch of the Line 1 of Barcelona Metro, which has been operating for more than 50 years and comprises 9 stations. TPF supervises track renewals for a length of 9,150 metres, involving the transformation of ballasted track into a concrete slab track, and the installation of 6 turnouts (two scissors crossovers, one single crossover and three switches) that will allow trains to perform switching manoeuvres and to reverse direction.

The works also include renovation of the whole tunnel signalling system, measures to reduce train-induced vibrations, installation of new ticket machines at stations, and monitoring of doors providing access to the stations



>
Ageate - Aldea
motorway project

ROAD INFRASTRUCTURE

TPF is continuing development on the island of Gran Canaria by participating in the Ageate - Aldea motorway project. Phase II was launched this year.

In particular, TPF is in charge of the supervision of the works on the section that links El Risco to Agaete, in the northwest of Gran Canaria. The project entails construction of 7.75 km of single-carriageway interurban road running through very rugged terrain, as evidenced by the tunnels, viaducts and embankments encountered along its route.

Two engineering structures deserve special attention: the Faneque tunnel made up of two tubes of 2,077 m and 2,180 m long which ends at the ravine of La Hoya de Segura, and the six-span viaduct of 522 m which crosses the ravine of El Risco.



RAIL INFRASTRUCTURE

TPF is taking part in the modernization project of the Xàtiva-Icoi railway line. The section affected by a new contract connects Ontinyent to Alcoi over a distance of 25.5 km.

The project is one of the activities implemented by ADIF to enhance the suburban railway network of the Valencian Community.

The Ontinyent - Alcoi section runs through mountain ranges and alongside rivers. It includes 2 stations, 2 halts, 10 tunnels, 10 steel viaducts, 14 overpasses, 9 underpasses and 4 level crossings. The upgrade works comprise the complete renovation of the track structure, realignments to increase the line speed, soil treatment and slope protection works, improvement of the track formation and drainage system, adjustment of the vertical clearance of structures and tunnels to comply with current regulations, and renovation of stations. ADIF awarded TPF a contract for the detailed design of the works for the upgrade of the track.

At the Spanish-Portuguese border, TPF will support the Tui station, built in 1884, to equip itself with a new system offering more safety on the rail.

In November 2020, we won a contract for the preliminary design of the works for the upgrading of the safety systems at Tui Station in order to meet the needs of the new track plan (Line 814: Guillarei - Valença do Minho).

The safety and communication systems that will be designed by TPF will ensure that the highest safety standards are complied with. Technological innovations will also play an important role in the project, including the installation of an ATP system known as "ASFA Digital", which allows for an increase in the information that can be transmitted, thus reducing the risk of accidents due to human failure.

In the sector of rail freight, it is imperative to adapt the infrastructure to future needs. In this framework, TPF signed a contract with ADIF in February to analyze the Mediterranean, Atlantic and Cantabria-Mediterranean rail freight corridors.

Our mission is to perform an analysis of some rail freight corridors on the national rail network, with a view to identifying preferred origin/destination relations as well as the most suitable routes for rail freight transport and, consequently, determining the works to be carried out in order to develop and optimize these routes.

The study will identify potential rail freight transport demand and, taking into account forecasts of future demand for rail passenger transport on the corridors, we will assess the rail network's performance and capacity to accommodate this traffic, defining the most favourable routes for freight trains and planning all the works required.

The railway company Ferrocarrils de la Generalitat de Catalunya (FGC) plans to develop a new rail service between Barcelona and El Prat airport.

Before embarking on this new project, the company asked us to draw up a Business Plan.

Upon completion of the works for the construction of an underground railway

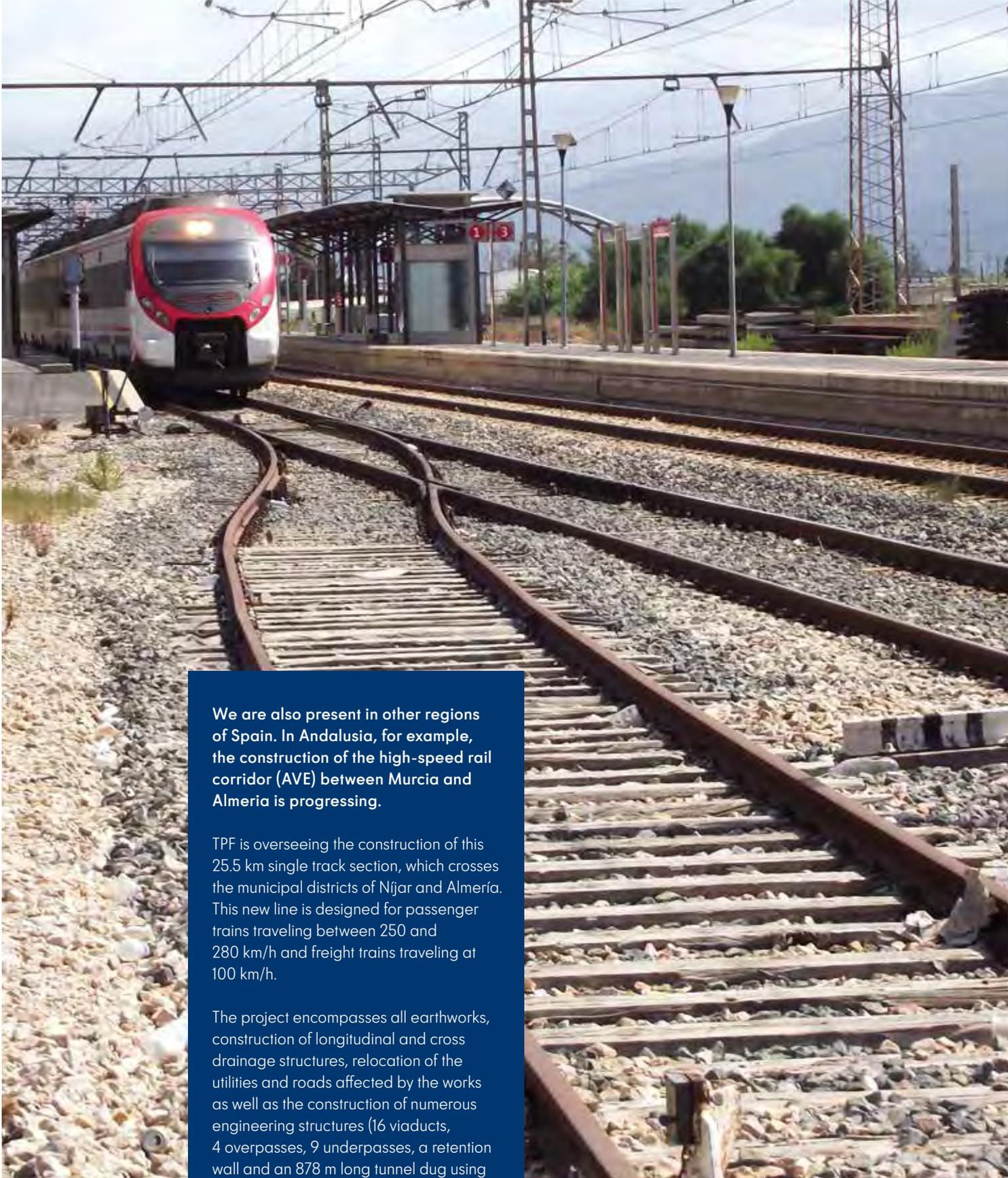
line providing access to Terminals T1 and T2 of the Barcelona Airport, TPF analysed the capacity of the railway infrastructure managed by the public company ADIF for the implementation of a suburban service to be provided by the operator FGC. In addition, train schedules were proposed, and an estimate was made of the required train fleet and the operating costs of the new service.

For almost two years, our teams have been working on the Vitoria-Gasteiz Júndiz multimodal logistics platform project led by ADIF.

The Spanish operator appointed TPF to carry out the detailed design of the Júndiz multimodal logistics centre in Vitoria-Gasteiz (Phase 1) including a standard-gauge rail link to the Atlantic Corridor, and the functional design for the implementation of a new rolling highway terminal.

Since its commissioning in 1994, the Júndiz Logistics Centre has been used for managing rail-freight traffic operations linked to the business activity of the area, covering mainly the transportation of intermodal and conventional freight related to the automotive sector.

The purpose of the assignment is to connect the Júndiz rail freight hub in Vitoria-Gasteiz with the Atlantic Corridor on the Trans-European Transport Network (TEN-T) via the new Basque Y HSR Line, improving interoperability along the corridor itself and contributing to solving bottleneck and insufficient-capacity problems in the Irún Terminal.



We are also present in other regions of Spain. In Andalusia, for example, the construction of the high-speed rail corridor (AVE) between Murcia and Almeria is progressing.

TPF is overseeing the construction of this 25.5 km single track section, which crosses the municipal districts of Níjar and Almería. This new line is designed for passenger trains traveling between 250 and 280 km/h and freight trains traveling at 100 km/h.

The project encompasses all earthworks, construction of longitudinal and cross drainage structures, relocation of the utilities and roads affected by the works as well as the construction of numerous engineering structures (16 viaducts, 4 overpasses, 9 underpasses, a retention wall and an 878 m long tunnel dug using the Belgian method).

MARITIME AND PORT INFRASTRUCTURES

The port of Vigo plans to expand the “Muelle de Comercio” quay by establishing a new port area west of the “Muelle Transversal” quay.

Our detailed design team has been working on this project for over a year.

And there is a good reason: the designed solution must be compatible with the port’s future developments, take into account the potential environmental impacts and meet energy challenges and reduction of CO₂ emissions.

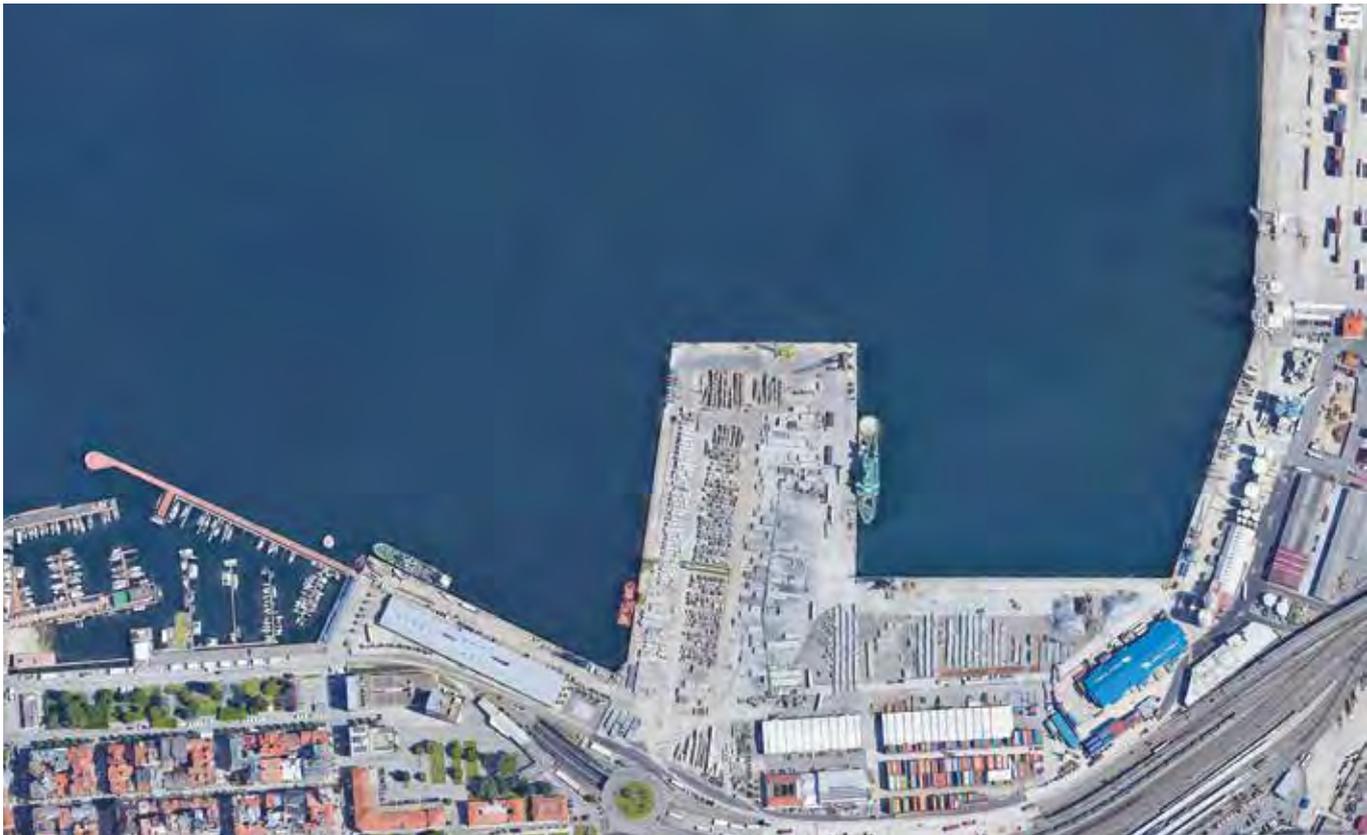
The Environmental Impact Assessment will address all the aspects required to accomplish the environmental permitting process, including the filing of permit applications with the Environmental Agency concerned

In the port of Valencia, the South Quay of the Turia dock dating from the 1970s must also be renovated and extended. To our greatest satisfaction, we have finalized the detailed design.

The structure is 549 m long and 24 m wide and has a draft of 14 m. It was built on piling foundations.

Given its obsolescence, it is necessary to build a new quay structure that will offer adequate levels of service and safety in the coming decades.

Port of Vigo



ENVIRONMENT - WATER



Flood Risk
Management



Maintenance
of dams

The Group has strengthened its presence in the Ebro and Tagus basins by signing two new contracts in the field of flood risk management.

In order to comply with the provisions of the European Flood Directive, TPF was tasked with drawing up the Flood Risk Management Plans (FRMP) for the Ebro River Basin Authority and for the Tagus River Basin Authority.

The FRMPs will detail a series of measures aimed at strengthening knowledge about flood management and risk perception and communication, and thus improving the capacities of the society to cope with this natural risk, with the ultimate objective of reducing the damage caused by floods and the recovery time. In addition, flood risk maps were produced covering 750 km of rivers, and public information activities were carried out.

The priority of dam operators is to guarantee the safety of all installations and to ensure their proper functioning. And as such, technical support for maintenance and operation of dams is a subject in which we have extended expertise.

Proof is that the Directorate General of Hydraulic Infrastructure of Extremadura has requested our assistance for the maintenance of 41 dams it currently operates.

These structures have a storage capacity of 70 hm³ and supply water to the population of 133 municipal districts, which is a total of 175,000 inhabitants. Most of these were built in the 80s and 90s.

Our scope of action for this mission covers: maintenance and supervision; assistance to the operation; collection, processing and analysis of monitoring data; monitoring the state and behavior of the dams; planning and management of maintenance works; assistance to the

Contract Manager in the dam operation under ordinary and flood conditions, including the verification of the quality of the water stored; and support in the design of an integrated computer system for the management of the operation of the 41 dams.

For the Guadalquivir River Basin Authority, we are currently processing the draft technical reports on the authorizations relating to the use of the Public Hydraulic Domain.

The authorizations are required in the “hydraulic public domain”, on sectoral impacts related to environmental and town-planning issues and those arising from amendments to the Mortgages Law in the Guadalquivir River Basin, Ceuta and Melilla.

The project is particularly important as it will allow us to expand our footprint in Andalusia, with new branch openings in Seville, Córdoba, Granada and Jaén.

4

new
branch
offices

Seville
Granada
Jaén
Córdoba

Australia



ROAD INFRASTRUCTURE

WestConnex is a large-scale project we are actively working on, the largest road infrastructure project currently underway in Australia.

When completed, this 33 km-long, mostly underground motorway will significantly reduce travel times for residents of the Sydney metropolitan area and provide 10 hectares of new public space.

This year, TPF continued the important mission it was entrusted by the John Holland - CPB consortium, namely the design review of all electromechanical systems for the Rozelle interchange (WestConnex 3B). This will connect the two 7.5 km motorway tunnels between the M4 motorway and the new M5 motorway (WestConnex M4-M5 Link) with the City West Link Road, the Anzac Bridge and the Victoria Road (East of Iron Cove Bridge). The project also provides for a connection with the upcoming Western Harbor Tunnel.

Situation and Perspectives for each competence center

Building 108

Transport infrastructure 112

Environment 115



Building

In 2020, our engineering operations in the building sector suffered a sharp decline due to the health crisis, which led to the suspension of many projects, and sometimes complete shutdown in certain areas such as aeronautics and airports.

Unsurprisingly, the healthcare sector came first in 2020, followed closely by the field of education. Housing is falling sharply, which is a direct consequence of the drop in private investment. The field of logistics continues to grow, which is a sign of evolution in consumption patterns.

Thanks to various public aids and a strict use of teleworking, we are ready to resume operations everywhere with the help of government stimulus plans. And in each country, each of our subsidiaries has selected a target: in Portugal, Morocco, Poland and Romania, we will focus on the health sector and the pharmaceutical industry, but also on education. In France, we are targeting the field of energy renovation for buildings. In Belgium, the focus will be on construction, and above all, on the renovation of military infrastructure. While in Spain, we want to support the development of logistics and rapidly expanding data centers.

EVOLUTION OF THE BUILDING SECTOR

One thing is clear: this crisis has also accelerated awareness of the challenges presented by human activity on our environment, and has profoundly changed the approach to engineering in building design.

Two major trends, while contradictory in appearance, have actually managed to coexist: digitalization and low-tech.

Digitalization

Digitalization in the building sector applies first and foremost to our working methods.

The first major change lies in the widespread use of the BIM process for the design and monitoring of building work. In recent years, TPF has invested heavily in training to enable its staff to adapt to this new tool, which involves collaboration with other designers and proved to be very effective when the pandemic imposed the use of teleworking.

But digitalization also means using new tools such as drones to carry out diagnostics or surveys, 3D scanning to model an existing structure from a cloud of points and augmented reality for rendering to customers or controlling the work. In Brazil, we have taken this direction in order to set ourselves apart from the competition. In France, TPF has even set up a subsidiary named “ImPact” specializing in these fields, which is working actively with standardization bodies for these new technologies.

In buildings we deliver, digitalization is present through the expansion of the Smart Building, which aims to be energy efficient through the implementation of multiple sensors or connected objects that communicate via IoT to control technical equipment in order to avoid any waste.



Low-tech and decarbonation

Contrary to appearances, low-tech is the other trend that is emerging, and it does not require any less work from our engineers.

Low-tech is first and foremost the use of bio-sourced materials contributing to the achievement of decarbonation targets set at the global level. Timber frames, plant-based insulation, mud walls, all these techniques, both old and new, require in-depth studies. In France, we had to carry out laboratory tests to validate the seismic capacity of a compressed raw earth construction for the IUT of Tarbes.

But that's not all. Low-tech also involves the development of bioclimatic design limiting the use of fossil fuels, aiming for zero consumption, and promoting reuse of water and materials.

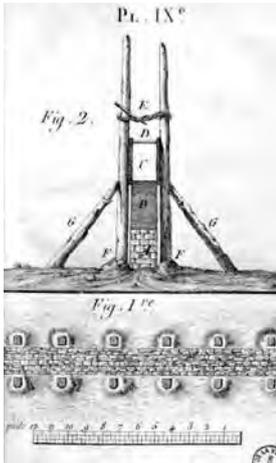
Such development in the building sector is an opportunity for the TPF group to strengthen its position in all emerging countries where we are established.

Life cycle

From now on, studies carried out during building design are no longer limited to construction, they must also take into account the entire life cycle of the building including operation, maintenance, deconstruction, dismantling and recycling of materials.

With this in mind, our building divisions are developing new internal synergies with operational divisions such as TPF Utilities in Belgium or TPF Maintenance in France.





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IUT OF TARBES: AN EXPERIMENTAL PROCESS FOR DEVELOPING A PARASISMIC RAW-EARTH FRAME

In France, the Occitanie Region has ordered the construction of a building dedicated to the training of students, as well as to research in the field of Civil Engineering and Sustainable Construction for the IUT of Tarbes.

When the architectural competition was launched, the project's funders wanted this building dedicated to sustainable construction to be a state of the art landmark in this area. The operation will become emblematic on the Tarbes campus.

The building has strong eco-responsible features: BEPOS2 building, advanced passive design, bio-based materials. It will act both as a "container" and "support" for teaching civil engineering and sustainable construction.

In addition to the fact that this project is designed primarily using a wood frame, the use of rammed earth walls both for the outside and inside gives a special meaning to the new building. This technique has been around for centuries but is rarely used in construction today, especially for buildings of this size.

Métisse insulation panels were chosen consisting of recycled cotton fibers.

Rammed earth and its advantages

Rammed earth is a method of construction using raw earth, which is manually packed between formwork, using successive layers of 20 to 30 cm, so as to form a base or a wall. This technique has been used regularly on rural buildings in France from the 18th century, and for much longer in other geographical areas (Forteresse de Bam, 2,500 years ago).

It has many advantages:

- it is a local, bio-sourced and recyclable material: the soil is used without any additives; it is taken on site and can be reused on site.
- thermal qualities: high inertia, able to store solar energy during the day and restore it at night.
- perspiration: naturally regulates indoor humidity

In-depth studies on rammed earth's resistance to seismic vibrations

As the future building is located in a seismic zone, the use of rammed earth required checking its resistance to vibrations beforehand. However, there is no reference / standards for this material. As the technical design office, our added value was to work on the structural part and the reinforcement of rammed earth to seismic vibration.

TPFI therefore had to implement specific studies to meet the demands of the control office. The case was quite unusual and was even sent to the national headquarters of Véritas. These approaches led to the design of a module based on the wood / rammed earth pairing, with the wood providing load-bearing capacities greater than those of rammed earth.

After a first stage of bibliographic studies, tests were carried out at the technological institute FCBA, Bordeaux. It is one of the 5 French laboratories which has 6 x 6 m vibrating plates, making it possible to reproduce earthquakes. The test protocol was carried out on 3 x 1.5 m rammed earth modules, scaling up to 250% of the reference earthquake magnitude in the sector. These unprecedented tests have shown that earth coupled with wood dampens the earthquake and strengthens the resistance of wooden structures.

The works were therefore initiated and are already well advanced. The covered enclosure was finished, and the rammed wood modules were installed at the end of 2020. The building will welcome its first students at the start of the 2021 school year.

The team is made up of: Project management: Mil Lieux agency, TPFi, GP Architectes Tarbes / AMO Environnement : Addenda / Construction material laboratories & rammed earth specialists: Craterre



Transport infrastructure



The Covid-19 pandemic has severely affected the transport sector and its effects will be long lasting, even once measures related to the state of health emergency have ended.

Some segments such as air transport have been more deeply affected by movement restrictions and containment requirements. Air traffic has indeed experienced an unprecedented decline in 2020. In Europe, for example, the Covid-19 epidemic grounded 90% of air traffic due to multiple flight cancellations.

As a result of the epidemic, passenger car traffic has also fallen by 60 to 90%. But that's not all, since rail transport and urban public transport have also suffered.

Freight transport, on the other hand, proved to be more resilient as supply chains continued to function.

TRENDS

Even though transport demand appears to be growing in 2021, the effects of the health crisis on the mobility and transport sector are likely to be felt over the next three years.

Before the Covid-19 crisis, the urban transport networks of mega-cities were close to the breaking point. The trend was to find cleaner, safer and more equitable transport modes than the car. To achieve these objectives, particular attention has been paid to improving transport governance and developing innovative mobility solutions.

Changes in citizens' mobility patterns are likely to occur in the future as large urban agglomerations continue to grow. According to the latest United Nations projections, the population of mega-cities will increase by 35% by 2030. And by 2050, 70% of the world's population will live in cities, and 90% of the 3 billion people who will join the population will be in developing countries. It goes without saying that in the coming decades, demographic growth in cities is a challenge we need to prepare for in the fields of transport infrastructure planning and design.

INNOVATION

Digitalization in logistics and distribution systems will increase in the future and will continue reshaping urban and long-distance freight transport.

The trend to automate transport operations and use automated vehicles will continue to gain ground in order to reduce workers' exposure to the risks associated with these activities.

In urban transport, integrated mobility management systems that consolidate all public and private travel modes and the city's transport infrastructure, as well as mobility platforms, will become key elements of urban transport systems.

CHALLENGES

The future of transport involves major challenges, where sustainability, resilience of transport systems and users' preferences and expectations must be placed at the heart of the transportation plans.

To shape the mobility of tomorrow, TPF will continue to support its customers in implementing projects, and to play a leading role in the improvement and development of transport infrastructure.

Ecuador's national sustainable urban mobility plan

As part of the Euroclima+ program funded by the European Union, and the cooperation and support agreement concluded between the French Development Agency (AFD) and the Ecuadorian Ministry of Transport and Public Works (MTPW), TPF was appointed for developing a National Sustainable Urban Mobility Plan (SUMP) for Ecuador.

The objective of this plan is to promote environmental sustainability and support climate resilient development in Latin America by reducing greenhouse gas emissions from the country's urban transport sector in order to meet the commitments made under the Paris Agreement and Nationally Determined Contributions (NDCs) established on a voluntary basis according to the constraints of each country.

Currently, the transport sector uses 42% of the energy produced and imported from the country and emits 39% of greenhouse gases. Land transport represents 86% of these emissions.

Our mission is to develop a national policy which can be applied to all Decentralized Autonomous Governments of the country, which will make it possible to implement strategies and actions for sustainable mobility in urban centers, while taking into account initiatives in terms of public policy, governance, regulation, capacity building as well as financing mechanisms and technologies, while adopting a transversal approach in terms of sustainability, equity, accessibility and equality.

In this regard, the National Sustainable Urban Mobility Plan (SUMP) proposes a set of measures for the improvement of technologies related to passenger and freight transport and to private vehicles; optimizing the use of public transport; the promotion of soft mobility; economic incentives aimed at reducing GHG emissions; land use planning and urban mobility planning; parking policies; prioritization of non-motorized modes of travel and public transport over the existing infrastructure and the development of public policies allowing the implementation of these measures.

The objectives are ambitious:

- 1** reducing greenhouse gas emissions;
- 2** reducing the impact of transport on climate change;
- 3** improving urban mobility systems, integrating new technologies and offering citizens better alternatives for getting around town;
- 4** increasing and integrating different sustainable modes of transport, both for people and goods;
- 5** increasing the number of people using public transport, cycling and other modes of transport compatible with sustainable mobility challenges.

TPF is particularly happy to be able to contribute to the realization of these objectives.

Environment



Water · Energy Socio-environmental sectors

Off to a flying start, the environment, water and energy sector has later gone into virtual stagnation, a consequence of the health crisis and the fall in global economic activity. Many projects were in fact suspended due to the Covid-19 epidemic.

As of this writing, we should be witnessing a strong comeback in markets and try to make up for lost time

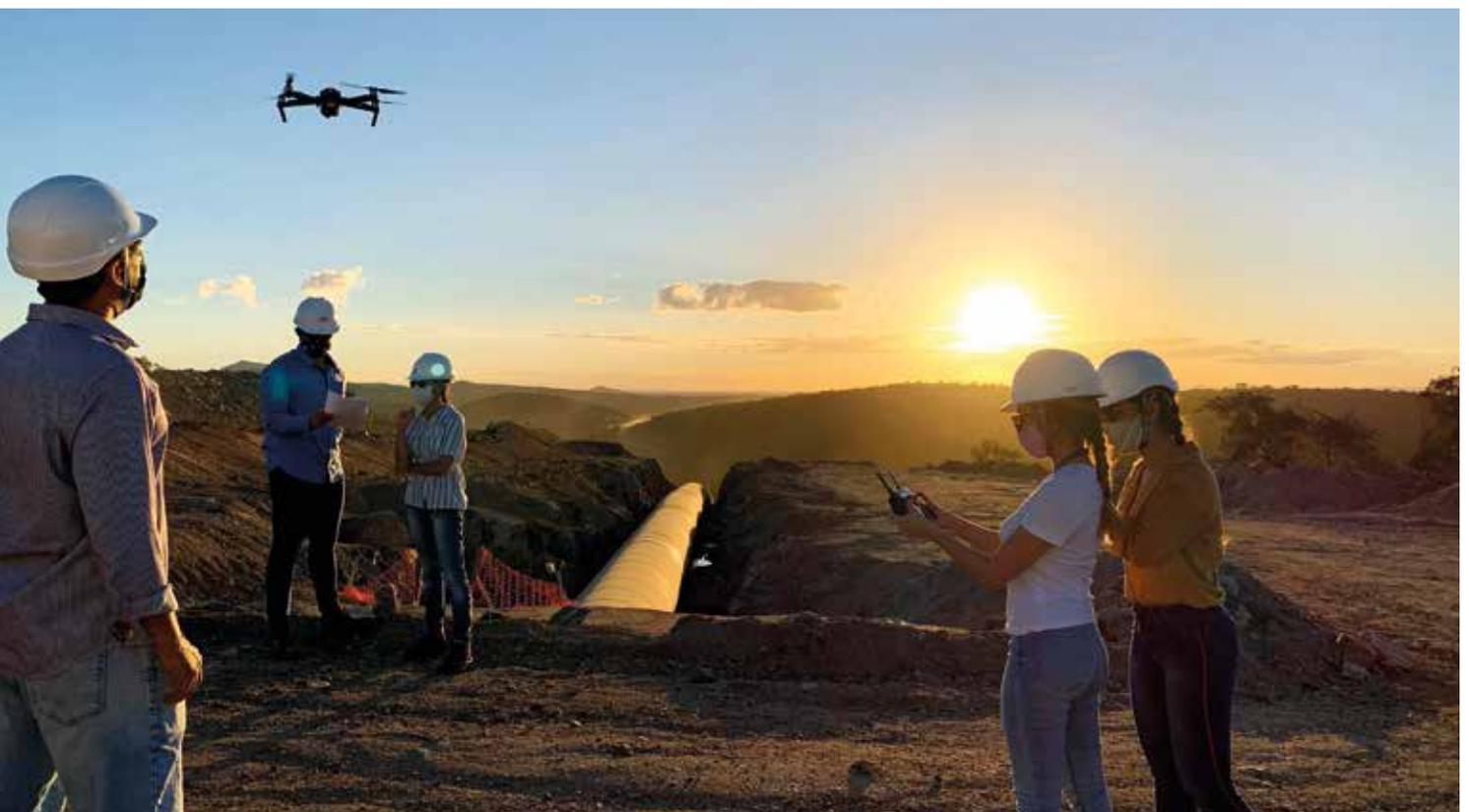
EVOLUTION AND CHALLENGES

Assuming that pre-crisis trends will continue, they should keep developing over the next few months and emerge as follows.

In **AFRICA**, trends in multilateral financing are expected to increase in the **water sector**.

Multilateral development institutions (with the World Bank in the lead) will continue to play a major role in the financing and implementation of projects in the water sector: water supply and sanitation systems, medium and large-scale irrigation systems (with centralized management), flood control and water storage (reservoirs and dams).

Until a few years ago, the same World Bank was reluctant to allocate funds for the construction of dams, given environmental concerns. Today, it recognizes that there is a pressing need to invest in large-scale water storage for water supply and irrigation.



In the hydropower sector, governments are increasingly turning to private investors or public-private partnerships (PPP) to develop projects. The Sagana hydropower plant project in Kenya is a good example.

The development of small **hydropower plants** is still too low compared to the high potential of the African continent. This is the reason why UNIDO, the United Nations Industrial Development Organization, has set up a program to finance feasibility studies for small hydropower projects. Its objective is quite simple: raise awareness of projects and attract potential private investors. TPF has already been awarded two studies, one in Cameroon and the other in Guinea Conakry.

In **EUROPE**, the risks of **water shortage** and **flood** related to **climatic changes** will also increase.

It is therefore essential to find solutions for:

- fighting against floods;
- reducing water losses and therefore saving water resources;
- reusing treated water;
- using drinking water networks to produce energy by recovering water pressure using turbines.

Moreover, **energetic transition** will not happen without adequate energy **storage**.

Operating pumped-storage schemes to store electrical energy in the form of potential energy could greatly contribute to integrating renewable energy sources (wind, solar) into the energy system. This explains the growing interest in this storage technique.

At this time, TPF has all the technical skills required to play a leading role in achieving these objectives.

In **BRAZIL**, mining operators have been led to question the safety of dams, following the tragic accidents which have plagued the country in recent years. Fortunately, our Portuguese and Brazilian subsidiaries have been successful in winning several studies relating to the stability and safety of dams.

TPF is also present in other emerging countries such as **INDIA**.

While it is true that the economy there is more focused on the domestic market, our Portuguese subsidiary has nevertheless won, together with our Indian subsidiary, a major study contract in Mumbai relating to flood control, which is a field that our Group masters perfectly.

INNOVATION

TPF is particularly attentive to the evolution of technologies in the world. And as such, drones are valuable allies for our engineers and technicians, who no longer hesitate to use it to detect faults in infrastructure in particular.

In Brazil, for example, drones are used to inspect and control the quality of the works and to supervise the progress of the construction site of the "Ramal do Agreste" water supply system, the largest hydraulic structure being constructed in this country.

Update of the Zambezi Basin Hydrological Modeling in Mozambique



The study we carried out consisted in providing tools for flood management in the Zambezi basin.

We have therefore updated the hydrological and hydraulic models used to define the mitigation measures and establish the mapping of flood-prone areas according to several flood period scenarios (25, 50 and 100 years).

The existing information relating to the hydrology and morphology of the watershed was used for the calibration of the hydrological and hydraulic models.

The section of the river under study extends from the Cahora Bassa dam to the Indian Ocean over a distance of 460 km and is gathering water from the Luia, Luenha, Revuboe and Chire rivers, its main affluents.

LIDAR (Light Detection And Ranging) data allowing an understanding of terrain topography was used for the creation of a digital terrain model (DTM) and a digital surface model (DSM) and to extract curves from cartographic level and aerial photographs. A series of 22 topobathymetric surveys were carried out along the river, between the Cahora-Bassa dam and the Zambezi delta.

In order to obtain reliable meteorological data, our experts also analyzed precipitation, flows and daily levels.

The hydrological model HEC-HMS (Hydrologic Modeling System) was chosen and calibrated to simulate the process of rainwater turning into surface flow in watersheds, while the hydraulic model HEC-RAS (River Analysis System) was selected to develop the hydrodynamic model of Zambezi. Both were developed by the Hydrologic Engineering Center (HEC) of the US Army Corps of Engineers.

Once the hydraulic model of the Zambezi River was calibrated, daily flows generated by the hydrological model as well as flows from the Cahora-Bassa dam and hydrometric stations were injected into the hydraulic model. Water levels of the river generated by the hydraulic model were subject to a statistical analysis in order to determine flood levels for each return period (25, 50 and 100 years) and to delimit zones liable to flooding under the same scenarios.

Client: Republic
of Mozambique -
National Directorate
of Water Resources
Management
Date of completion :
2020
Funding: World Bank



Environmental education and social mobilization project to create an environment favourable to the empowerment of women

This ambitious project is part of the pilot project carried out on the Mangaraí river, in the municipalities of Santa Leopoldina and Cariacica, in the state of Espírito Santo.

Our Brazilian subsidiaries have been appointed by the Espírito Santo State Government to provide technical advisory services in matters of social mobilization and environmental education. The project is part of the Integrated Water and Landscape Management Program (PGIAP) of the Espírito Santo State Government, which is financed by a loan agreement between the State Government and the International Bank for Reconstruction and Development (IBRD) and developed by the Capixaba Institute for Research, Technical Assistance and Rural Extension (Incaper).

This project aims to encourage a change in the behavior of rural populations with regard to environment (improvement, conservation) through a series of concerted actions with the 19 communities in question. The objective is to make the entire population aware of land management and use, the recovery of degraded areas and give access to knowledge of innovative practices. The long-term objective is to improve the living conditions of the population and protect the environment by improving the waters of the Mangaraí basin.

On one hand, there is a need to support community initiatives to improve and adapt planting and land use systems (soil management, recovery of degraded areas), to preserve the environment, to increase sustainable agricultural production and livestock (training on good practices) and on the other hand, a need to encourage income-generating activities.

The focus will also be placed on the promotion and implementation of actions in favor of the empowerment of women and Quilombola communities.

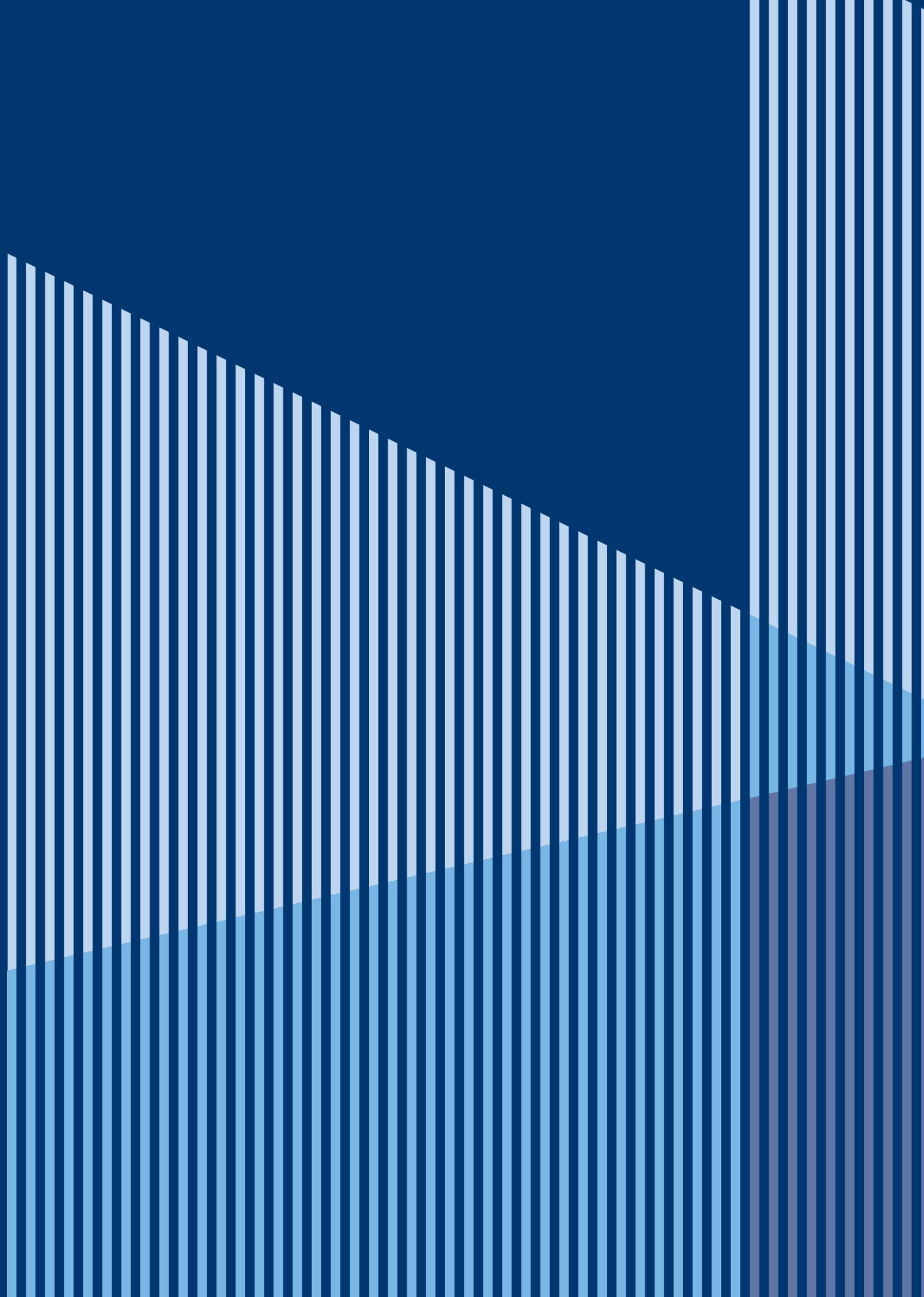
Client: Espírito Santo
State Government -
Capixaba Institute
for Research, Technical
Assistance and Rural
Extension (Incaper)
Date of completion:
December 2020
to March 2022
Funding: public

Consolidated accounts 2020

CONSOLIDATED BALANCE SHEET	2019	2020
	(000 euros)	(000 euros)
Goodwill, tangible and intangible assets	62.135	64.386
Rights of use assets	27.088	26.738
Other non-current assets	21.604	20.287
Non-current assets	110.827	111.411
Inventories and contract assets	36.579	29.619
Trade receivables	89.873	83.770
Other current assets	24.247	24.234
Cash	14.129	21.422
Current assets	164.829	159.045
Total assets	275.656	270.455
Capital	18.327	18.327
Translation adjustments	-8.144	-16.383
Retained earnings	28.997	31.995
Group share in the equity	39.181	33.939
Non-controlling interests	4.610	8.642
Equity	43.791	42.581
Provisions	7.125	7.680
Borrowings	23.664	84.736
Lease obligations	19.435	19.156
Other non-current liabilities	8.570	7.487
Non-current liabilities	58.794	119.059
Borrowings	80.822	20.424
Suppliers	36.692	33.399
Contracts liabilities	6.622	6.451
Lease obligations	8.241	8.836
Other current liabilities	40.693	39.705
Current liabilities	173.072	108.815
Total liabilities	275.656	270.455

CONSOLIDATED PROFIT & LOSS ACCOUNT	2019	2020
	(000euros)	(000 euros)
Revenues (*)	241.148	226.077
Cost of sales	-63.003	-62.516
Cost of goods and services	-32.203	-25.346
Employee benefits	-103.251	-100.633
Other operating charges	-6.385	-4.275
EBITDA	36.305	33.307
Depreciations and amortizations, write-offs and provisions	-15.765	-15.605
Share in the result of associates and joint-ventures	694	-162
Operating result	21.234	17.540
Net financial result	-12.170	-8.136
Result before taxes	9.063	9.404
Income taxes	-5.693	-5.244
Net consolidated result	3.370	4.159
Share of the non-controlling interests in the net result	655	712
Result of the Group	2.715	3.447

(*) : 253 million euros revenues in BE GAAP in 2019, taking the full integration of India into account



TPF sa
Av. de Haveskercke 46
1190 Brussels - Belgium
T. +32.2.370 19 70
info@tpf.eu - www.tpf.eu

This activity report is
also available in French.

Printed in June 2021
CHIEF PUBLISHER
Bernadette Petit.
DESIGN designbysign.com

