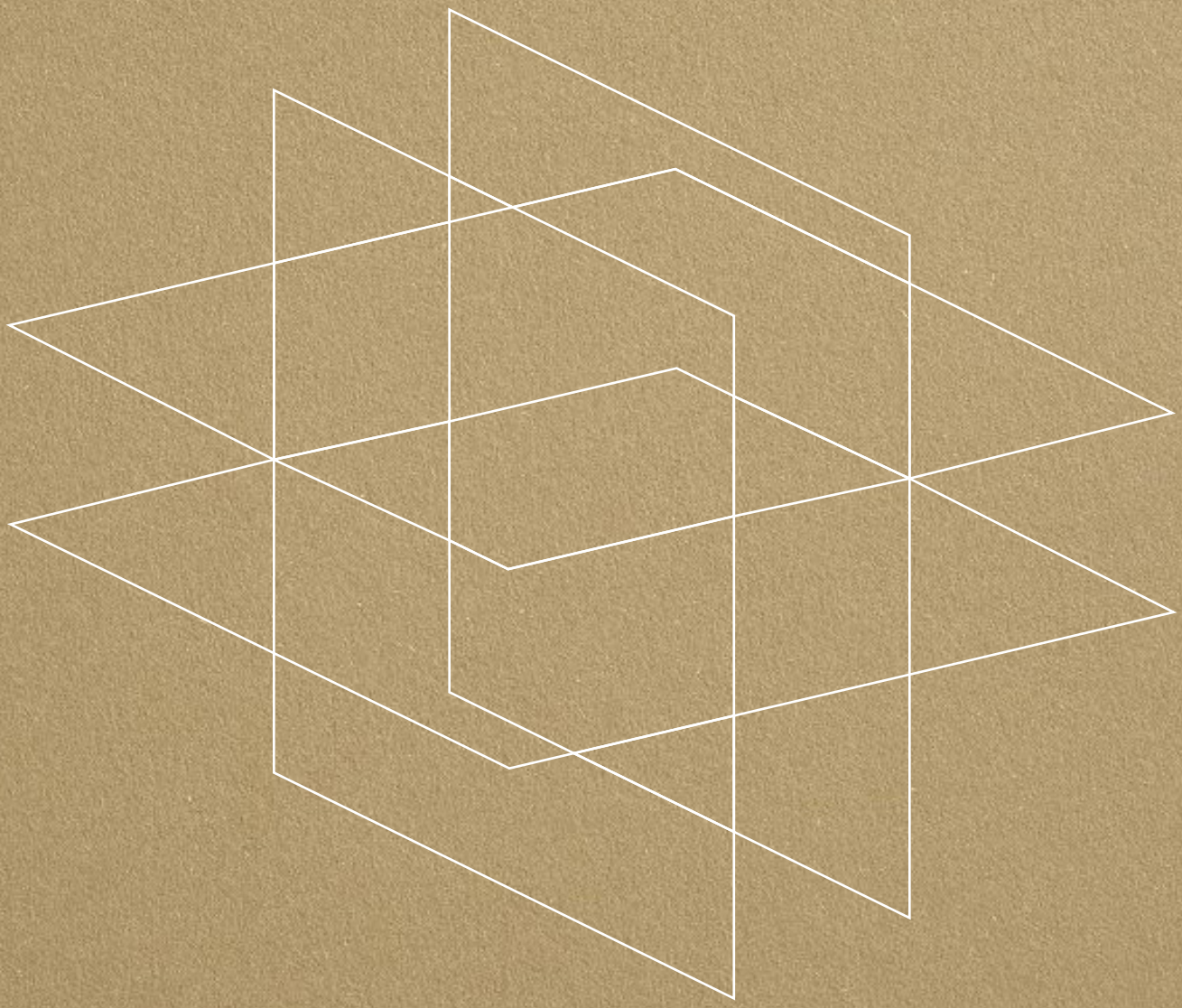
Activity report

2019



FOREWORD

Before talking about the situation we are currently going through, it will be useful to reflect on 2019.

2019 was an exceptional year for TPF in several respects:

- sales and services of € 253 million, up 4.5% despite the stoppage or disposal of certain activities,
- an operating margin (EBITDA) maintained at 10.8%,
- free cash flow of € 12 million,
- an order intake of € 271 million, or 13 months of activity, bringing our order book to 23 months of activity.

These indicators confirm that the actions we initiated in early 2018 relating to our business model, our business portfolio and our geographic location have proven to be relevant, and generate healthy and sustained growth.

We can be delighted that it has been sustained and confirmed by the excellent results observed in the first quarter of 2020. This trend was indeed confirmed despite the fact that some of our locations were located in countries already hit by Covid-19 and that containment measures were slowing down activity there.

We were therefore able to record an increase in our sales of 9% compared to the first quarter of 2019, an improvement in EBITDA of 4% and a decrease of 15 days relating to the term of payment of our accounts receivables compared to the same time of the previous year.

The health crisis that hit us will undoubtedly erode our performance in 2020. As of today, we expect our revenue to drop 12% compared to 2019, and an operating margin of 8%.

Two factors should enable us to get through this crisis without facing any major problem: the size of both our order book and our accounts receivables which are monetized.

In 2020, TPF has entered its thirtieth year of existence, and we were therefore able to react quickly and efficiently, thanks to the expertise of teams who have known each other for a long time and who share the same corporate culture and the same values.

This was evidenced during the period of confinement, which coincided with Ramadan and the French elections, usually characterized by weak commercial results. Many remarkable successes awaited us: we can mention for example the studies for the Meaux hospital in France, the studies for a 220 km railway line in Mexico and the monitoring of the Porto metro construction site.

We were also able to realize that, in a number of countries where we are active, we were considered by the State and / or the banks to be a quality company with a structuring effect on the economy.

For the coming years, we will continue to apply our strategy focused on services that support the ecological and digital transition.

These two transitions are complementary and imperatively necessary when we know that this major confinement will only reduce global CO2 emissions by 7% in 2020, while to reach the objectives set by the Paris conference by 2050, the reduction must reach 8% per year.

We should therefore be delighted that, in its recovery plan, the European Commission has focused on accelerating the ecological transition.

Our strategy to orient and develop our skills in transport infrastructure, in the water sector and in building towards ecological transition is therefore fully justified.

We should not end this prologue without mentioning four awards that were allocated to us in 2019:

- Best Road Engineering Works Award, in Argentina
  The Argentine Road Association awarded this prize to the mega-project "Paseo del Bajo" in Buenos Aires.
  This new 7.1 km road axis makes traffic more fluid and reduces the travel times of 134,000 daily commuters in the capital.

- 2019 Architecture and Design Award (Prix Versailles) in the "Passenger Stations" category, in Morocco
  The new Kenitra train station won the "Spezial prize Exterior 2019".
  Dedicated to the Al-Boracq high-speed train, this new station has a 13,000 m² passenger building and underground parking with a capacity of 200 spaces.

- Prize for the project "Mozambique Marine Spatial Plan (POEM - Plano de Ordenamento do Espaço Marítimo)", Category Services, awarded during the PT Global Water Awards 2019.
  These aim to recognize and reward the internationalization of the Portuguese water sector.
  The Mozambique Marine Spatial Plan is an essential tool for the development of the country and its maritime space. It will allow all activities to coexist without conflict, to guarantee a harmonious and sustainable use of the sea and coastal areas including fishery resources.

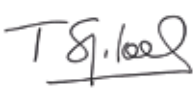
- Departmental Grand Prize for Construction and Sustainable Development 2019, in France
  The Hautes Alpes Departmental Council and the Architecture, Town Planning and Environment Council 05 awarded this prize for the project to rehabilitate and extend the La Grave school group designed by TPF and MAS Architecte.

Following this very brief overview of the events that marked the year 2019 and the beginning of the year 2020, we would like to address all of our employees to express our sincere gratitude. Thanks to their daily commitment, they help us to promote the company and defend values which are more than ever necessary today to support the digital and ecological transition. We offer our warmest thanks to each and every member of our staff.

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. Atul Bhobe
   Member of the Executive Committee
6. William Meynard
   Member of the Executive Committee
7. Amadou De
   Member of the Executive Committee
8. Tom Van Looy
   Member of the Executive Committee
9. João Recena
   Member of the Executive Committee

1.

2.

3.

4. 

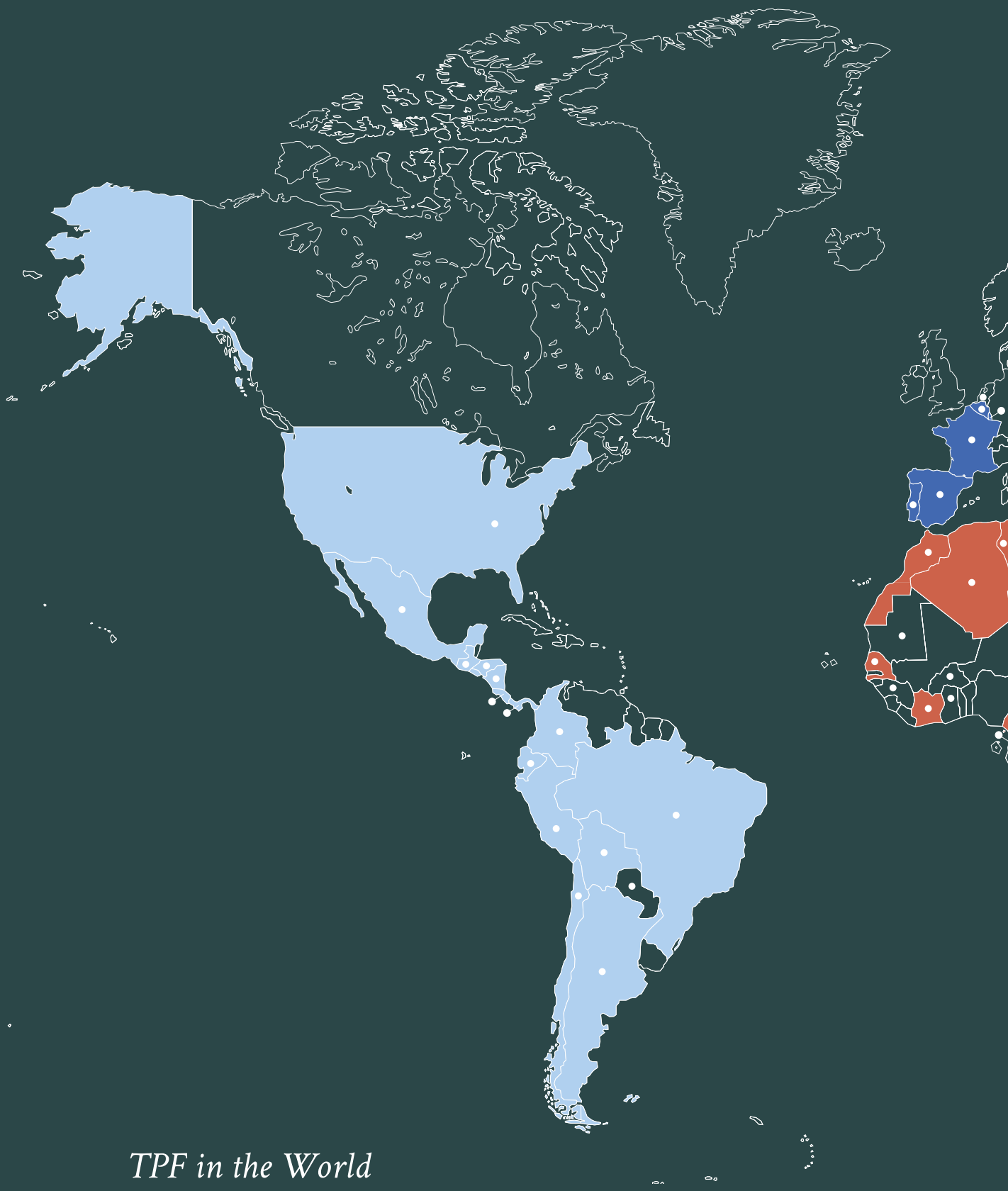
5. 

6. 

7. 

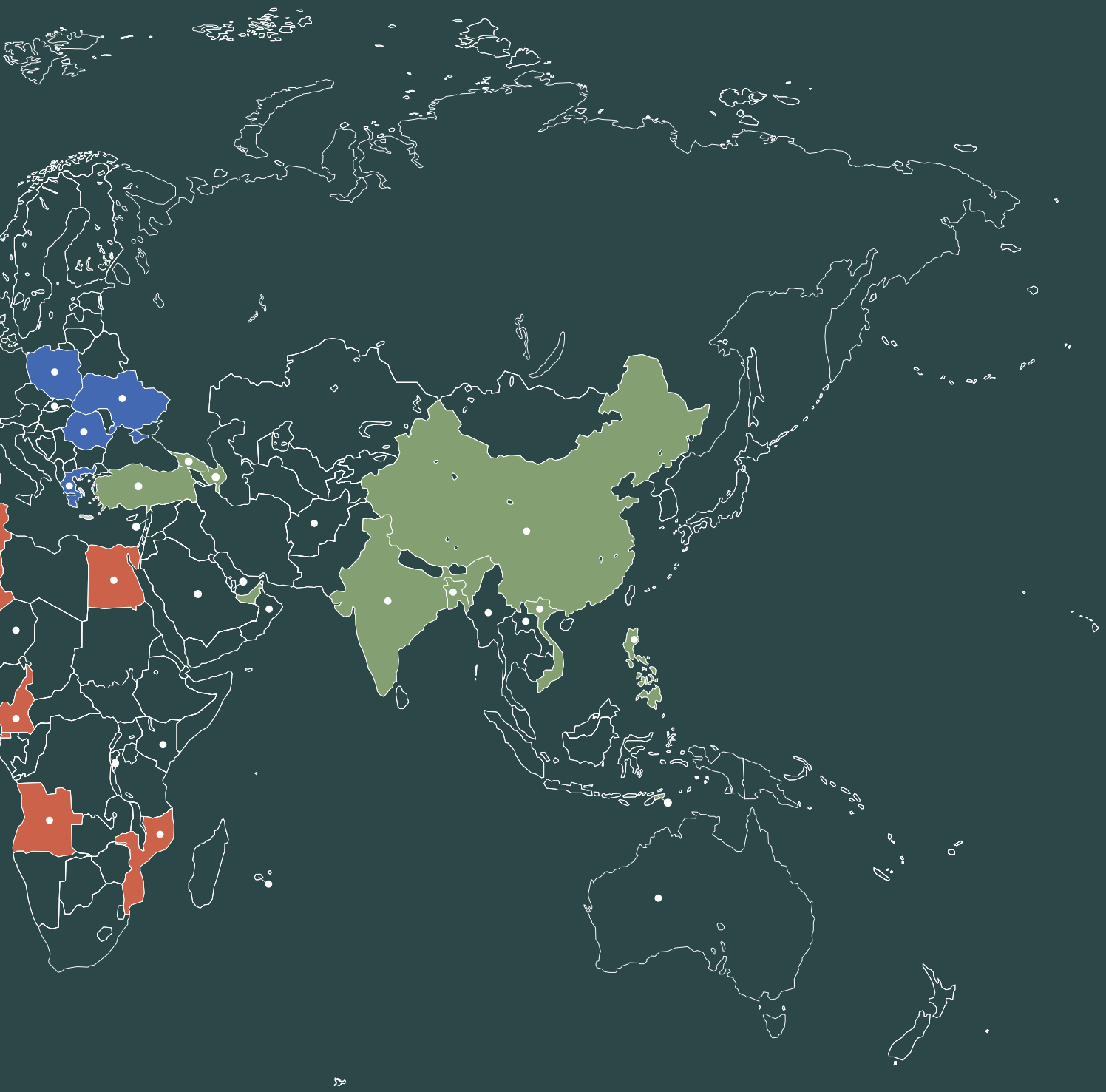
8. 

9. 



TPF in the World

- Our Subsidiaries and Branch Offices
- Our countries of operation in 2019



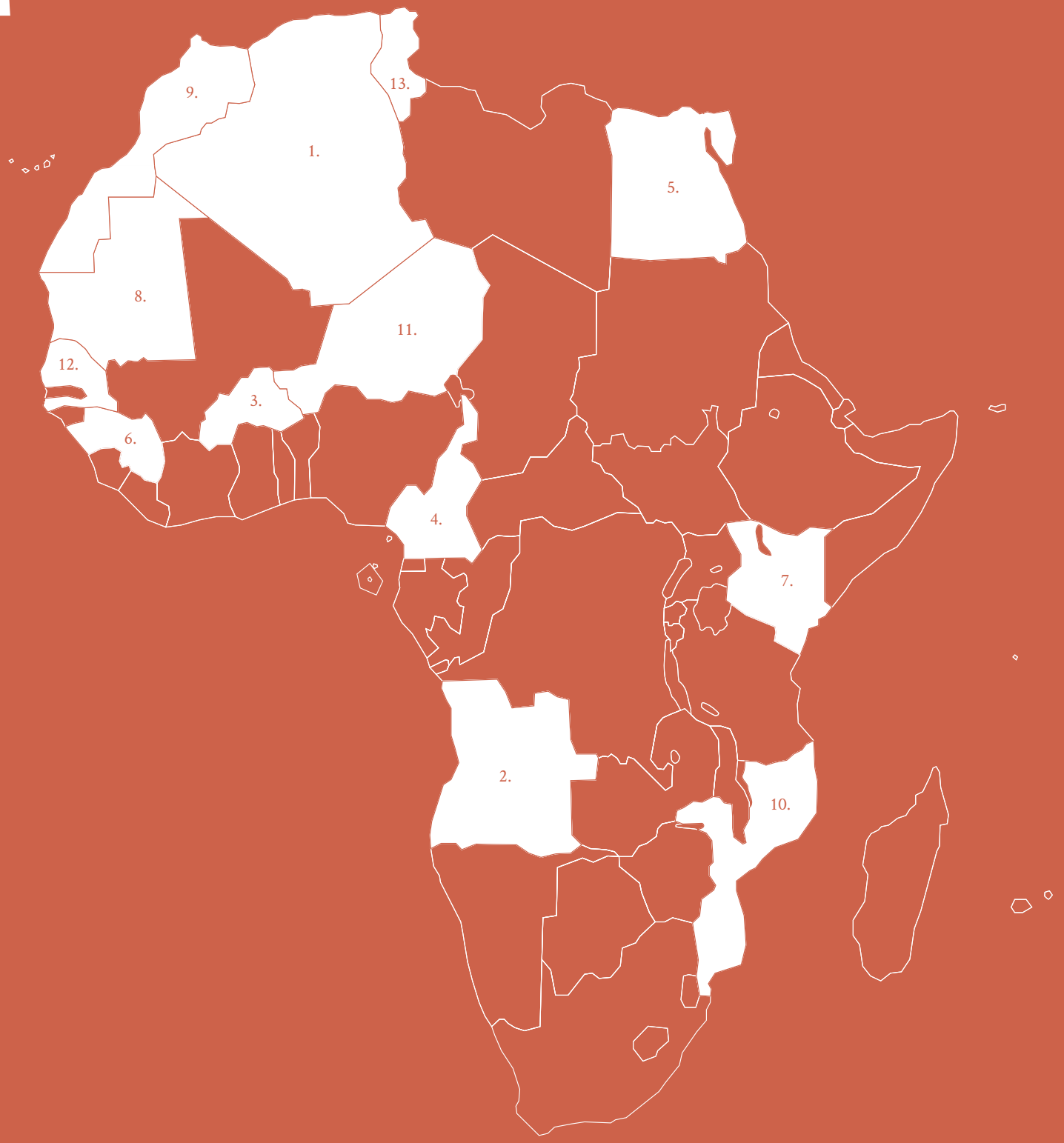
HIGHLIGHTS 2019

By geographical area and by sector

Africa

1. Algeria
2. Angola
3. Burkina Faso
4. Cameroon
5. Egypt
6. Guinea Conakry
7. Kenya
8. Mauritania
9. Morocco
10. Mozambique
11. Niger
12. Senegal
13. Tunisia

a



Algeria

Public transport infrastructure: Metro, tram, bus rapid transit system

The dynamic in favour of public transport, particularly in the metro and tramway sector, is not showing any signs of slowdown in Algeria.

In the field of urban transport, TPF continues to supervise the extension of the Line 1 of the Algiers Metro to the airport.

This year, the works have made great progress thanks to the use of a tunnel boring machine, being the first tunnel built in Algeria using this method.

Extension of line 1 of the Algiers metro

This project aims to link the city centre with the airport and the business district of Bab Ezzouar with the construction of a 9.5 km line section and 9 stations.

For this reason, TPF will use its experience to assist the Algiers Metro Company in the process.

Still in the rail sector, TPF was awarded the resumption of studies for the execution of civil engineering works on the first tram line of Mostaganem, a 14 km long line with 24 stopping points.

This mission was entrusted to us by ALSTOM Transport and relates to three lots:

1. Structures and retaining walls;
2. Buildings for the Centre and maintenance depot (CMD) for operating works, high voltage substation (HVSS) and secondary storage (SECS), buildings along the route, passenger stations, interchange hubs and relay parks;
3. Layout of the tram line and roads, drainage of the tram platform and the roadway, multi-tubular, urban development, urban integration, urban furniture, green spaces, road signs and public lighting, exterior development of the different areas (CMD, HVSS, SECS).

The project also takes into account interfaces with the various functional groups of the tramway system during the execution study phase, until final validation by the project manager / delegated project owner.

In addition to the creation of 6 bus-tram interchange poles, 10 parking lots and the development of various areas, the project also provides for the construction of a maintenance centre, covering an area of 12 hectares for operating works, intended to accommodate the storage building, the workshops and an administrative building.

Mostaganem tram

Structures and road infrastructures

In the road sector, the construction of the East-West motorway is undoubtedly one of the most important infrastructure projects launched by the Algerian Ministry of Public Works as part of the support for economic growth. It is also our most ambitious road project for the moment in Algeria.

Execution studies are continuing for the facilities and operating equipment for the Centre and West lots with a total length of 700 km.

With a length of 367 km, the Centre section of the highway crosses seven wilayas and extends from Chlef to Bordj Bou-Arréridj. The study contract that we concluded with the company COSIDER Travaux Publics relates to the construction of 18 access stations (toll), 7 maintenance centres, 20 rest areas and 10 service areas.

As for the western section, with a length of more than 330 km, it crosses four wilayas and extends from Relizane to Tlemcen. Concluded this time with the renowned Portuguese company TEIXEIRA DUARTE - Engenharia Construções, SA, the study contract concerns the construction of 15 access stations (toll), 9 maintenance and operating centres, 2 of which are on open track and 22 rest areas.

It should be noted that for these two lots, our engineers were also responsible for carrying out the technical studies relating to the infrastructure works (earthworks, layout and pavement of the roadway, dry and wet network infrastructures, signalling and public lighting) as well as the studies of architecture and engineering for the buildings part.

The rehabilitation of road tunnels is today a major challenge in order to ensure the safety of those who use it at all times. It is in this context that TPF is currently working on two projects involving upgrading of the safety systems and rehabilitation of a number of tunnels.

One of the projects, in the province of Bejaia, has reached a major milestone in 2019. Following delivery of the detailed design for the rehabilitation of some tunnels exceeding 4 km in length, the tender stage for the selection of the contractor started at the end of the year. The measures proposed include civil works, as well as drainage, lighting, ventilation, fire protection and video-surveillance systems. During this process, TPF will assist the client in evaluating tender submissions from bidding contractors.

Lot Centre of the East -West highway

Algeria

Structures and railway infrastructures

The railway sector in Algeria is particularly dynamic, and within the framework of the development program of its railway infrastructures, TPF currently controls and supervises the construction of more than 700 km of railway lines.

As such, TPF actively participates in the construction of the Annaba-Ramdane Djamel, Relizane-Tiaret-Tissemsilt, Oued Tletat-Tlemcen lines and the eastern mining line - Lot 3.

In doing so, the Group is strengthening the reputation it has built in the region over the years both with its peers and with public establishments such as the National Agency for Studies and Monitoring of the Implementation of railway investments (ANESRIF).

Oued Tletat-Tlemcen Viaduct

Building sector - Urban planning

TPF's Building activity has especially increased in the tourism sector this year, particularly in the hotel sector.

In Boumerdès, we focused on the 18,000 m² hotel project which was entrusted to us last year by Algerian real estate developer SARL ENADRA ESSAHIHA LIL AKKAR EURL KHALIDJ EL MOURDJANE.

The 4 * hotel will have a capacity of 240 rooms. Among the activities and tasks that have been assigned to us, we will note the preparation of all the technical documentation, including the architectural file, the company tender documents and the related technical follow-up.

At the same time, in Tizi-Ouzou, we focused on the renovation and construction of the Amraoua hotel.

Five years ago already, we were in charge of carrying out the studies (all trades) in collaboration with the architecture team of Promontório. Today, we are busy supervising the work. •

*4 * hotel in Boumerdès*

Amraoua hotel, Tizi-Ouzou

Africa

Angola

Building sector - Urban planning

During the year, the group continued its activities in the office sector and strengthened its presence in the healthcare real estate sector.

For TPF, the most significant event was undoubtedly the signing of the new contract to supervise construction work on the Pedro Maria Tonha "Pedalé" hospital in the Morro Bento district of Luanda.

Pedro Maria Tonha "Pedalé" Hospital in Luanda

United Nations Information Centre in Luanda

Composed of a set of four elements, the Pedro Maria Tonha "Pedalé" hospital (formerly known as the Hospital of the President Security House) is located on a plot of approximately 32,000 m².

The main building rises over 3 floors and will notably house the rooms, the outpatient and examination rooms or the operating theatres. It represents a construction area of 29,062 m², including outdoor technical areas.

The other buildings will house administrative services, a training centre in robotic surgery and a histocompatibility laboratory. Finally, the infrastructure also provides a roof helipad, parking lots and a residential complex.

In the office segment, the construction of the United Nations information centre in Luanda, which will serve Portuguese-speaking African countries (PALOP), is nearing completion.

It is a building with more than 10,000 m² of floor space spread over six floors above ground and one level below ground.

The whole construction is made up of three buildings with different heights. It will house a museum and areas divided into rooms suitable for all types of events such as meetings and conferences, as well as technical premises.

Our teams are present in the field in order to control and supervise the works as stipulated in the contract concluded with the Ministry of Social Communication of the Republic of Angola.

Luena city drinking water distribution network

Environment - Water

In the province of Moxico, this year we carried out analysis and verification of the project to extend the drinking water distribution network of the city of Luena.

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

The extension of the drinking water distribution network covers 150 km of pipes and 15,000 residential connections.

It was by combining the skills of our Portuguese and Angolan teams that we were able to win from the Ministry of Energy and Water this contract spanning a period of 30 months, also including the supervision of works.

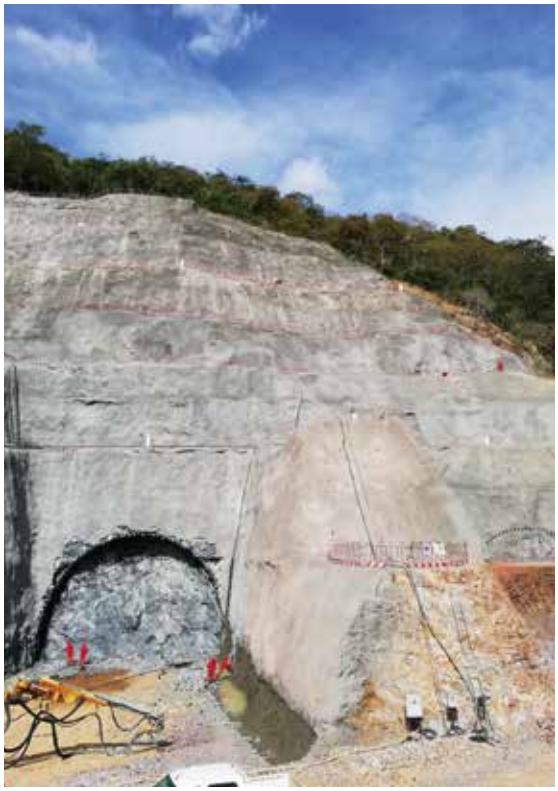
Samba Cajú irrigation project

In the province of Kwanza-Norte, in the north of the country, TPF was selected to participate in the Samba Cajú irrigation project and, more specifically, to supervise the construction of an earth dam and its irrigation system.

The structure is 17 m high and 450 m long and is intended to irrigate 1,300 hectares of land.

The company Owini chose us in particular to verify the construction process, to ensure the quality of the materials used (with particular attention paid to geotechnical properties) and to control the execution times of the works and costs of the project.

Environment - Energy



Caculo Cabaça hydroelectric project

Also in the province of Kwanza-Norte, the Caculo Cabaça hydroelectric project along the Kwanza river is on track: the country's largest dam will be capable of producing 2,200 MW within four years. Built by China Gezhouba Group.co, Ltd (CGCC), this structuring project is part of the National Energy Security Plan 2025 whose objective is to reach 9,000 megawatts.

The hydroelectric development takes advantage of the 215 m head between the reservoir and the outlet works, downstream from the natural waterfalls of Caculo Cabaça. The project essentially consists of a roller-compacted concrete dam (RCC) with maximum height of 103 m and 553 m crest length, with storage capacity of about 440 million m³. The powerplant is equipped with four turbines, with a nominal unit power of 530 MW. The water circuit flowing into pumps consists of a reservoir intake, four lined headrace tunnels with 9 m inner diameter, a cavern powerplant and two concrete lined tailrace tunnels with 16 m diameter.

The undertaking includes a second powerplant, adjacent to the dam, designed to pump a 60 m3/s environmental flow. Two substations are envisaged: a 400 kV main substation and a 200 kV ancillary substation.

Our team is in charge of the complete review of civil engineering components and will continue works in the field. •

Africa

Burkina Faso

Environment - Water

The city of Ouagadougou, capital of Burkina Faso, records a strong growth of its population, and a sustained but poorly controlled urban development. The population of Ouagadougou is estimated at 3 million inhabitants in 2019 and 10 million in 2050. This creates constant needs for improvement and extension of its infrastructure and services, in particular in the water sector.

The Ziga II Project aims to meet the population's demand for drinking water and to expand access to drinking water in the outlying districts of the city.

In this context and as part of a group, TPF was awarded work supervision and control for the third tranche of the drinking water supply project for the city of Ouagadougou starting from the Ziga dam (Ziga II).

The 2007 Ziga Master Plan has been updated in order to cover the capital's water needs by 2030. It plans to increase production capacity by around 150,000 m³ per day (7,500 m³/h).

The project includes: the realization of a new water supply system between Ziga and Ouagadougou, the creation of new reservoirs (+ 61,500 m³), the strengthening and extension of the distribution networks, a gravity pipe in cast iron DN1600 mm of 23 km between the Boudtenga reservoir and the SP3 site in Ouagadougou as well as the creation of private connections and standpipes. The work should be completed before summer 2020. •

Africa

Cameroon

Environment - Energy

Cameroon intends to respond to the growing demand for electrical energy from its population as well as from the industrial sector. To meet this challenge, the government has launched a multitude of projects in recent years.

After six months of work, we have successfully completed studies relating to the development of a small hydroelectric power station in the coastal region of Manjo in Nkongsamba, to the great satisfaction of the United Nations Industrial Development Organization (UNIDO).

This project benefits from multilateral funding from the Cameroonian Government and the Global Environment Facility (GEF).

In addition to the technical, environmental and economic feasibility study, our Cameroonian and Portuguese teams assessed the socio-environmental impact of the project, carried out the detailed preliminary project and implemented the tender procedure with a view to award a concession to a private investor.

In the Adamawa region, we are carrying on with the execution of the contract for Assistance to Project Owner (APO) and supervision of construction works for the Bini hydroelectric development in Warak.

It is one of the flagship projects of the Ministry of Water, Energy and Mines in which we have the honour to participate in a consortium with the company INTERCHNE.

The project itself concerns a dam with a capacity of 603 hm^3, a hydroelectric plant of 75 MW and a 225 kV power line of around 70 km to the Mounguel substation. The installation of power lines in rural areas and the development of access roads are also part of the program.

The implementation of this project requires the displacement of 300 people for whom a Displacement and Relocation Plan has been implemented, in accordance with the requirements of the World Bank.

The contract that we signed extends over a period of 22 months. •

← Construction of the Bini hydroelectric development at Warak

→ Coastal region of Manjo

Egypt

Structures and railway infrastructures

One year after the opening of its Egypt branch, TPF can boast of having had a great 2019.

In the rail sector, we have worked on four projects. One of the flagship railway projects in the country involves the construction of two monorail lines in the metropolitan region of Cairo: 6th October City (42 km) and New Capital (52 km).

TPF conducted preliminary studies, prepared the documents for putting the project out to tender under an EPCF (Engineering, Procurement, Construction and Financing) contract scheme, and provided assistance during the whole procurement and contract award process. Our consulting services ended in August 2019.

Environment - Water

Improving the water and sanitation service in the Nile Delta is another major challenge and TPF is particularly honoured to have been able to win its first contract in the water sector in Egypt this year.

TPF has expanded its reach into this new engineering segment with a contract related to a sewerage project for Fakos -El Sawaleh Cluster - Group 3 (El Hagageia El Mostgada, SoWwada and El Rawda). The project, which is financed by the Agence Française de Développement (AFD), the European Investment Bank (EIB) and the KfW Group, covers the construction of 3 sewage networks in the Sharkia Province, specifically in the small towns of Sowwada, El Rawwada and El-Hegagia El-Mostagada. It is envisaged to build 5 new pumping stations and about 64 km of sewage pipes. •

Africa

Guinea Conakry

Environment - Energy

Guinea has considerable hydroelectric potential which it wishes to develop further with a view to strengthening its energy autonomy.

The feasibility studies and detailed design that we must carry out within seven months for the United Nations Industrial Development Organization (UNIDO) concern the construction of the micro-hydroelectric power station of Gbotodou on the Milo river, with a power between 4 and 5 MW.

Our mission consists in carrying out geological, hydrological and hydraulic studies, structural dimensioning as well as economic and financial analysis. •

Africa

Kenya

Environment - Energy

There is no shortage of hydropower projects that are gradually being installed on African rivers, and Kenya is no exception.

This year, TPF continued to work on the Sagana river hydroelectric development project, with an estimated power of 45 MW.

Our design office had been appointed by La REIKE Ltd to study the feasibility of the project from both a technical and economic point of view. The detailed preliminary design phase was recently added to this contract. The studies to be carried out cover a wide range of services: geological, hydrological and hydraulic studies, dimensioning of the structure, and economic and financial analysis. This new challenge will have to be met in 16 months.

At the same time, other hydroelectric projects are emerging not far from Kisumu on the Yala river such as the development of the Ndanu falls.

The hydroelectric development offers an electric power estimated at 10 MW and consists of a mini hydroelectric plant, a mobile dam, a water intake and a supply channel, a loading chamber and a penstock, a hydraulic unit and a tailrace. TPF carried out all the studies up to the detailed preliminary design phase. The call for tenders for construction is currently in progress.

In recent months, we have also participated in the technical and economic feasibility study of a second mini-hydroelectric power station on the Yala river, with an electrical capacity estimated at 8 MW. This mission includes hydrological and hydraulic studies as well as the sizing of structures. •

Ndanu Falls

Sagana river

Mauritanie

Environment - Water

2019 was an important year for our hydraulic engineers since the efforts made in recent months have led to the inauguration of the Seguelil dam in the wilaya of Adrar and the identification of potential sites where the development of runoff water retention basins could prove to be very useful.

TPF won the supervision contract for the construction of the Seguelil dam from the Ministry of Agriculture and the Ministry of Water and Sanitation. This concrete gravity dam with a length of 420 m and a height of 19 m has a capacity of 19 million cubic meters of water. Nevertheless, our work is not finished yet as we are currently providing technical assistance during the reservoir impoundment phase.

In the two Hodhs, as well as in Assaba, Guidimagha, Gorgol, Brakna, Tagant, Inchiri, Adrar and Tiris Zemmour, we completed several studies in August for the identification of 100 runoff water retention basins. In Mauritania, water resources are particularly important for agriculture and livestock farming because a majority of the population depends on them for a livelihood. However, millions of cubic meters of water are wasted every year during the rainy season due to the lack of runoff harvesting systems. This is why this project will largely benefit Mauritanian willayas with sites potentially suitable for development and for agroforestry (agro-silvo-pastoral) activities.

In the first place, TPF conducted a study with a view to identifying natural water flow pathways (talwegs) and low points over the whole project area, and then established the 100 most suitable sites for the construction of retention basins. Finally, our team performed all the detailed design studies required for each basin. •

Seguelil dam

Morocco

Building sector - Urban planning

Real estate projects related to education and training, housing, the hotel industry and tourist and sports activities constitute one of our main activities in Morocco, to which are also added some mixed real estate projects and the railway project of Kénitra.

Among the highlights of this year, we can mention the great success of the new Kénitra train station.

It won the prize for best exterior at the 2019 Prix Versailles international architecture competition, in the category "Passenger stations".

As a reminder, the new Kénitra station, dedicated to the Al-Boraq high-speed train, has a 13,000 m² passenger building and underground parking with a capacity of 200 spaces. It includes on the ground floor shops, restaurants, entertainment areas and a reception area for travelers.

TPF can congratulate itself for having contributed to the success of this prestigious project as an all-trade design office and for having integrated the latest technologies in energy and environment.

In a completely different field, the field of sport, the year was punctuated by the inauguration of the National Football Centre (CNF) in Salé. This new complex is equipped with state-of-the-art infrastructure and equipment and is compliant with FIFA standards, which has drawn a lot of attention.

TPF carried out the studies and the follow-up of the all trade construction works as well as the mission of Scheduling Piloting Coordination of the site. The site features an area of 29 hectares including:

- the construction of a 5-star hotel with 70 rooms,
- the construction of a congress centre with three modern congress and training rooms,
- the construction of a sports centre and a technical area (laundry room, vehicle shed, sports equipment store),
- the redevelopment of the 95-bed accommodation centre and the administrative buildings.

In Rabat, the world-renowned real estate developer Imkan, whose headquarters are located in Abu Dhabi, chose our Moroccan subsidiary as part of the construction of the new luxury complex on the cornice called "Carrousel".

An integral part of the integrated cornice development project, this new mixed-use project intends to play a major role in the urban development of the capital.

New Kénitra train station

Covering more than 10 hectares, the Carrousel revolves around four main components: residences with ocean views, leisure and walking areas, a shopping centre, a 5-star hotel and a business district.

Our team will be mainly interested in the residential component since it has been entrusted with the complete mission of study and monitoring of all trade building works for the construction of 230 dwellings. Thirty-two months will be required to meet this new challenge.

Finally, in the field of education, TPF embarked on a new adventure this year by winning the study and monitoring of the construction works for six vocational training centres.

These are part of the 15 projects of vocational training establishments financed by the American foreign aid agency "Millennium Challenge Corporation" (MCC) through the "Charaka" Fund and managed within the framework of public-private partnerships. They will be dedicated to a whole series of trades (agriculture, tourism, logistics, construction, crafts, aeronautics, health).

The training centres covered by the contract are:
- the Craft Development Institute in Fez (CFP02),
- the Institute of Traditional Arts of Meknes - IAT (CFP03),
- the Institute of Port Trades, Logistics and Industry in Tangier (CFP04),
- The Institute for Training in Health Professions and Social Action - IFMSAS in Meknes (CFP36),
- Institute of Hotel and Tourist Technology of Tangier - ITHT (CFP71),
- the regional training centre in small ruminant farming in Ouezzane (CFP79). •

← Carrousel project on the cornice, Rabat

→ CFP02 vocational training centre in Fez

← CFP79 vocational training centre in Ouezzane

→ National Football Centre (CNF) in Salé

Africa

Mozambique

This year, a large number of projects were tackled in Mozambique. We will particularly remember: integrated water resource management, flood risk and rainwater risk management as well as solid waste management, the fight against global warming, the protection of eco-systems, the preservation of the ecological integrity of rivers, the development of urban sanitation and drainage, the improvement of public spaces, land use planning as well as the planning of maritime space.

Strategic plan for the integrated development of water resources in the province of Zambezia

Environment - Water

The past year has made it possible to complete the execution of the contract concluded in 2017 with the Ministry of Land, Environment and Rural Development (MITADER) for the preparation of strategic plans for integrated development water resources in the provinces of Nampula and Zambezia.

In more detail, this World Bank-funded project focuses on water resources in the basins of the Meluli, Monapo, Mecuburi, Ligonha and Motomonho rivers crossing the province of Nampula and on water resources in the river basins of Molocue, Nipiode, Raraga and Moniga crossing Zambezia, representing respective areas of 44,700 km² and 25,600 km².

The work that we carried out in this partnership took place in several stages: production of monographs, definition of development scenarios, preparation of strategic investment plans and integrated development of water resources. It also required to hold workshops at the local level with the various parties concerned.

The Government now has the tools to manage, conserve and enhance water resources necessary for the sustainable and integrated socio-economic development of these regions.

Mission accomplished for our team in charge of updating the hydrological and hydraulic model of the Zambezi river.

The aim was to have a decision-making tool for managing flood risks (measures to be taken: protection, prevention and mitigation) and to define more precisely the impacts of floods in areas presenting a high risk.

On the other hand, in Beira, the works that we supervise within the framework of the urban requalification plan are still in progress.

This infrastructure project is aimed at creating a network of multifunctional green spaces and open spaces and was initiated by the Administration of Water Supply and Sanitation Infra-structures (AIAS).

The program has multiple objectives: improving the flow of water in the Chiveve river basin, reducing the risk of flooding and therefore better flood control, preserving the mangrove and revitalizing it, as well as developing recreational and environmental education activities.

TPF is responsible for supervising the work throughout the

Rehabilitation of priority drainage works in Maputo

Urban requalification of Beira - Chiveve river

duration of the project (24 months during construction to which are added 18 months covering the warranty period).

The project also provides for the urban requalification of the informal occupation area of Goto, in the Ponta-Gêa district, as well as the architectural design and landscaping of infrastructure such as kiosks or pedestrian walkways. This infrastructure, integrated into the Beira green urban infrastructure project, will be carried out under the supervision of our teams.

Note that the creation of these new public spaces with great qualities aims to improve the comfort and well-being of residents while preserving and perfecting ecosystems and safeguarding the ecological integrity of Chiveve .

Also in Beira, the time has come for our team in charge of supervising the rehabilitation works of the city's rainwater drainage system to support the municipality in the post-construction phase. The project is therefore coming to an end.

The technical assistance that we currently provide to our client relates to the management, operation and sustainable maintenance of the drainage system. Among the tasks incumbent on us, we will note the creation of the Beira Drainage System Department as well as the development of commissioning, operation and maintenance plans.

At the same time, in Maputo, the capital of Mozambique, TPF continues to supervise the rehabilitation of priority drainage works.

The fixed schedule foresees a duration of 18 months for the works and 12 months for the follow-up.

Finally, we are very happy to be able to make our contribution to the improvement of sanitation, drainage and solid waste management services in Chimoio and Inhambane. In fact, the 445,000 inhabitants of these two municipalities are facing serious flooding and sanitation problems.

The Administration of Water Supply and Sanitation Infrastructures (AIAS) has entrusted the consortium led by TPF, in collaboration with the Mozambican company Salomon Lda Consultants, with the preparation of a development plan for sanitation, drainage and solid waste management as well as feasibility studies for priority solutions.

The development plan will cover the next 25 years. It will pave the way for major investments, thereby reducing the risk of flooding and improving the health of populations.

The consortium will draw on its multidisciplinary expertise (urban hydraulics, waste management, law and institutional diagnosis, environment and socio-environmental management, Geographic Information System (GIS), urban planning) to carry out technical studies within 14 months.

Mozambique

Environment - Land use and maritime spatial planning

This year, we continued our collaboration with the company Biodesign with a view to developing the National Land Use Plan, representing an area of 801,590 km².

This strategic planning document will help identify favourable prospects, define general guidelines for setting land use objectives and target sectoral priorities for intervention on a global scale.

National Land Use Plan

Maritime spatial planning

In addition to the development of decision support tools, Geographic Information System (GIS), information exchange platform, strategic environmental assessment) and the implementation of an action plan for strengthening institutional capacities, we were also responsible for setting up training courses.

We should underline the key role played by local actors in carrying out this project (in the mining, agricultural, forestry, industrial, energy, environmental sectors as well as those of water, education, tourism, transport or roads). Their involvement is essential for the success of this project.

We should also underline that this 18-month contract is part of a program launched by the Mozambican government, through the National Fund for Sustainable Development and financed by the International Development Association of the World Bank.

Besides land use planning, the planning of the maritime space is another topical subject which is particularly dear to us as this instrument is essential in the fight against climate change.

TPF can congratulate itself on having been appointed by the Mozambican government, through the Fisheries Development Fund, to participate actively in the maritime spatial planning process. The project is funded by the World Bank and covers an exclusive economic zone (EEZ) of 562,000 km².

TPF and its partners must establish a roadmap and guidelines for the efficient management of maritime activities and the sustainable use of maritime and coastal resources. The objective is to create a coherent, transparent and sustainable decision-making framework based on evidence leading to planning and taking charge of maritime activities in an integrated manner.

To carry out this large-scale mission lasting 24 months, it will obviously be important to have in-depth knowledge in many fields: ocean economics, oceanography, climate change, fishing and maritime transport, aquaculture and biodiversity, coastal erosion, marine pollution, environment, energy, tourism as well as maritime resources. •

Africa

Niger

Environment - Water

This year saw the completion of construction work on the Goudel IV drinking water treatment plant as part of the project to strengthen the drinking water supply system in the city of Niamey, the capital of Niger.

The 40,000 m² drinking water treatment plant includes a pre-settling basin, sludge drying beds, a stirring chamber, a decanter, a treated water tank and a chemical building.

Project owner Denys has required the stability expertise of TPF acting as a consulting engineer in order to support them in carrying out the project. •

← Pre-settling tank

→ Sand filter

Senegal

Environment - Water

In SENEGAL , the enhancement and development of the resources of the Senegal river basin and the improvement of Dakar's drinking water supply are at the heart of our concerns.

The development of the Senegal River Valley is largely dependent on the supply of fresh water. Water is an integral part of the ecosystem and constitutes a natural resource and a social and economic asset.

Within the framework of implementation of the project for integrated water resources management and development of multiple uses of the Senegal river basin (PGIRE), the Organization for the Development of the Senegal River (OMVS) has entrusted TPF with the studies, supervision and control of the **cleaning and maintenance work on hydraulic axes on the two banks of the Senegal River** (Mauritania and Senegal).

The work to be carried out on both banks (total of 30 km) will make it possible to increase the availability of water and meet the needs of different users (drinking water, agriculture, livestock, fishing, etc.).

The project includes:
- the cutting of typha (tall aquatic grass) and the cleaning required to improve hydraulicity and availability of water for different uses,
- containment works for flood protection and extension of typha areas,
- upkeep, maintenance work or construction of works along sections to be processed,
- mechanisms for sustainable maintenance after investments.

In Dakar, the seawater desalination plant project in Les Mamelles is progressing.

This work will strengthen the water supply of Dakar with 50,000 m³/day upgradable to 100,000. Work is scheduled to start in 2020 and be completed in 2022.

For the record, the project has two components: the construction of the plant itself (including the water intake, the marine outfall, the pumping station and the electricity supply) and the renewal of nearly 460 km of distribution network in the capital.

In addition to studying the master plan, our consulting engineering office was chosen for missions relating to design, assistance with tendering, construction control and supervision, facilitation of implementation of the Environmental and Social Management Plan (ESMP) and the Environmental Monitoring Plan, as well as the development of monitoring capacities for plant maintenance and operation during the warranty period. •

DR Wassoul channel after mowing, cleaning and backfilling

← Fishing on the Djebendou

→ Junction DR Wassoul Senegal River

Tunisia

Public transport infrastructure: Metro, tram, bus rapid transit system

Environment and mobility are at the heart of societal concerns today. Here are the proofs.

In the centre of the capital, the megaproject of the central loop and exchange hub of Place de Barcelone, whose completion is scheduled for 2024, will improve and develop public transport in Greater Tunis.

Under the scheme, it is envisaged to improve the central loop of the Tunis Light Rail System and build a new transport hub in Place Barcelone, close to the city's central railway station, to allow for intermodal connection between light rail and bus services.

In addition, traffic direction will be reversed on the entire central loop in order 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 also be paid to the architectural, commercial and urban revitalization of Place Barcelone and its surrounding areas, right in the heart of the city.

TPF has been awarded a contract to update the existing detailed design, prepare technical tender specifications, review and approve the contractor's design, supervise the works, and provide assistance during the line's commissioning and the defects liability period.

TPF reinforces its presence in Tunisia with the award of this contract that will have a significant influence on mobility and urban planning in the Tunisian capital.

Place Barcelone, Tunis

Menzel WWTP

Environment - Water

This year, again, we have strengthened our activity in the water and sewerage sector in Tunisia. We have secured a contract to conduct a study for a project involving expansion and rehabilitation of the wastewater treatment plants that serve the towns of Bizerte, Menzel Bourghiba and Mateur.

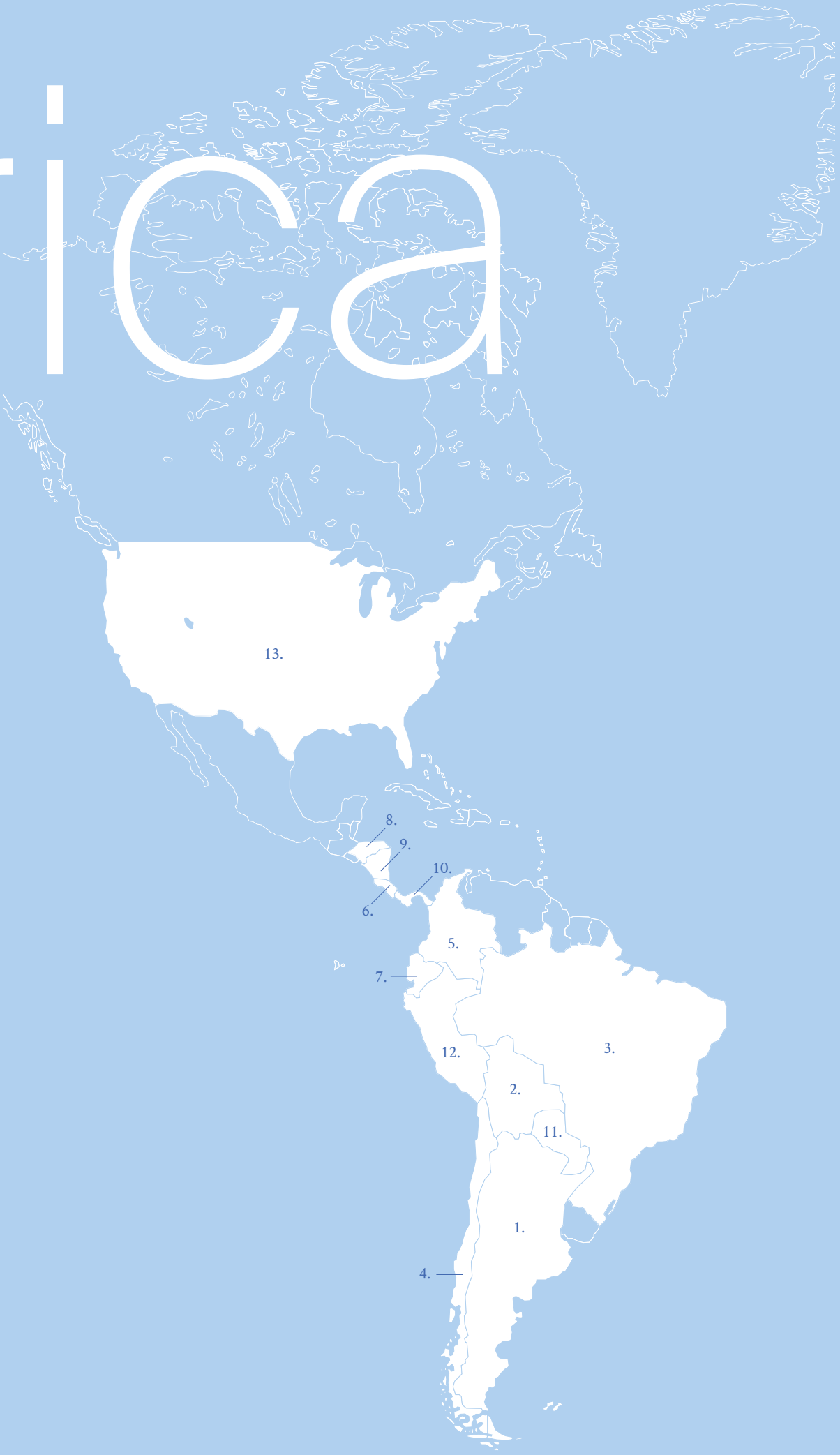
This project is part of an ecological restoration scheme for Lake Bizerte, which is located in the north of Tunisia and connected to the Mediterranean Sea via a 7-km long canal. The programme is aimed at reducing pollution in this lake through the implementation of a wide range of measures related to different sectors, such as wastewater, solid waste, industrial pollutants and diffuse pollution.

The contract awarded to TPF covers the wastewater component of the programme, the final beneficiary of which is the Office Nationale de l'Assainissement (ONAS). The main aim of the project is to enhance water quality and restore the ecosystems of Lake Bizerte in order to promote sustainable socio-economic development and improve the quality of life of citizens. •

Ame

1. Argentina
2. Bolivia
3. Brazil
4. Chile
5. Colombia
6. Costa Rica
7. Ecuador
8. Honduras
9. Nicaragua
10. Panama
11. Paraguay
12. Peru
13. United States

rica



Argentina

Structures and road infrastructures

In Buenos Aires, the inauguration of the mega project "Paseo del Bajo" undoubtedly marked the year, a project which was also awarded the "2019 Best Road Engineering Works Award" from the Argentine Road Association.

This new road axis makes traffic more fluid and reduces travel times for the 134,000 daily commuters in the capital.

After two years of work, it is now possible to connect the north and south of the capital via a 7.1 km road corridor separating the flows of heavy goods vehicles and long distance coaches (4 lanes for trucks and long-distance buses) of those of light vehicles (2 x 4 lanes).

This 12-lane stretch connects the Buenos Aires-La Plata Motorway and the Illia Motorway, as well as the port and the Retiro omnibus terminus, thereby significantly reducing travel times and the logistics costs associated with heavy vehicle operation.

The project includes 15 transverse crossings, i.e. 10 for vehicles and 5 for pedestrians, which connect the city centre to Puerto Madero.

Works proceeded simultaneously on three sections. Section A has a total length of 3 km and includes the south viaduct (from the junctions with the 25 de Mayo and the Buenos Aires La Plata motorways to the beginning of the underground section) and the north viaduct (between Los Inmigrantes Av. and the junction with the Illia motorway). Section B and Section C, the southern and northern segments that run partially underground, are 1.5 km and 2.5 km in length, respectively.

TPF provided construction supervision services for the Paseo del Bajo project, in particular on Section C.

Paseo del Bajo project

In the province of Entre Rios, a few hundred kilometres north of Buenos Aires, TPF realizes the detailed design of stabilization measures for ravines located in Hernandarias, as well as coastal defences and a link road to Piedras Blancas.

The aim of this assignment is threefold. In the first place, the ravines located in the town of Hernandarias will be analysed by addressing the constraints associated with completed and future works. Upon completion of the study, tender specifications will be prepared for the construction and maintenance of new ravine stabilization systems and for the upgrading of the existing structures. A descriptive analysis of the ravines and their geological and hydraulic features will also be provided in order to prevent instability phenomena and landslides.

Another objective of the study is to analyse protection works for coastal areas and adjacent infrastructure in Hernandarias and in Piedras Blancas, as they are subject to hydrogeological risks and erosion from the Paraná River. In addition, river access points for tourism use will be identified.

Finally, it is envisaged to improve road connection between Hernandarias and Piedras Blancas by constructing a bridge over the Hernandarias stream. As a result, tourism and other economic activities will be boosted in the region, thus avoiding migration to large urban centres.

Hernandarias – Paraná river

Southern coastal area – Province of Corrientes

Environment - Water

In the province of Corrientes, we were asked to conduct a study and a detailed design of flood-control systems for the town of Paso de los Libres, with a view to protecting it against the risk of flooding from the Uruguay River and its tributary the Yatay stream.

Besides estimating the return period for the standard project flood and the Probable Maximum Flood, our team will prepare the technical specifications and detailed drawings required for the tendering and construction stages.

The design is expected to improve and expand, where required, the existing storm-water drainage network. In addition, it contains provisions for installation of a gauging system, allowing direct readings to be taken of the water surface elevation of the Uruguay River.

Furthermore, architectural and urban development works will be undertaken to create promenades, rest areas and parks with their related facilities, while strengthening the link between the town and the river. •

Bolivia

Structures and road infrastructures

In Bolivia, the construction sites of the Guanay-Chimate and Muyupamba-Ipati roads have been completed and construction work on the Nazacara - Hito IV road, in the department of La Paz, is progressing well. The purpose of this new route is to stimulate economic growth in the region as well as commercial, social and cultural development.

TPF provides technical and environmental supervision services for the construction of the Nazacara – Hito IV section. In particular, the company is responsible for overseeing works on Subsection III, i.e. 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 following phases: review, improvement and approval of the detailed design, technical and environmental monitoring of the works, final acceptance, performance-based maintenance, and closeout of the project.

The Nazacara - Hito IV section is part of the Viacha – Hito IV road, which is located in La Paz Department and has a length of about 109.3 Km. It consists of several sections: Nazacara – San Andrés de Machaca, San Andrés de Machaca - Santiago de Machaca and Santiago de Machaca – Hito IV. The topography along its route is predominantly flat, but some stretches feature gentle gradients and large-radius curves. Moreover, the region is characterised by a cold and dry climate. This road runs across the provinces of Ingavi, Pacajes and José Manuel Pando, connects to TholaKollo, and ends at Hito IV, at the Peruvian border.

Section 3 starts at Santiago de Machaca (chainage 124+000) and ends at the so-called Hito IV (chainage 174+300). •

Brazil

Building sector - Urban planning

If there was only one project to retain in this area, it would be the major renovation of the Teatro do Parque in Recife.

In 2019, hired by the municipal government of Recife, TPF kicked-off management, supervision and inspection services regarding the restoration, renovation and expansion works of Teatro do Parque, located in Recife, capital of the State of Pernambuco. One of the challenges overcome by TPF was the need to find documents that indicated the characteristics of Theatre in its initial conception, so that the restoration works did not alter the building's identity. It was necessary to recover its original characteristics in terms of architecture, the construction materials used, the executive techniques used and to map the changes that occurred throughout its history.

Teatro do Parque in Recife

Environment - Water

The long-standing relationships of trust with Vale, one of the world leaders in the mining sector, allowed us to participate in their projects once again this year.

In September, our two Portuguese and Brazilian subsidiaries specializing in hydraulic and geotechnical fields were contracted by Vale to provide technical support services to the Company, including: simulations and studies on dams, technical support in field visits, support to the Client's technical team regarding supplier management and assistance to the Client in meetings with contractors and public authorities.

The prospects are rather good for our Portuguese-Brazilian team since two new contracts will be signed in 2020 with the mining giant.

In the State of Rio Grande do Sul, TPF is supervising the execution of dredging works to readjust the waterway access channel and berths of the Rio Grande's Port Complex.

This investment will reduce average waiting times for berthing of vessels and will allow larger vessels to access the Port – the operational draft of the berths will be 30% deeper than the current one. The work is financed by the Ministry of Infrastructure through the National Department of Transport Infrastructure (DNIT) and is part of PND II (National Dredging Program).

In the State of Ceará, the year 2019 was filled with exciting projects and challenges, among which we can mention the "Fortaleza Cidade com Futuro" Program (in English, Fortaleza - City of tomorrow).

The municipal government of Fortaleza, capital of the State of Ceará, hired TPF to provide technical support and supervise works under the Fortaleza Cidade com Futuro Program. The Program contemplates important interventions in the city's infrastructure and proves to be fundamental to boost the tourism industry, an important source of employment and income for the local population. Among the interventions included in the Program, two highlights are: "Engorda Beira-Mar", whose objective is to recuperate the shore's strip of sand and protect Avenida Beira Mar from marine erosion; and the "Beira-Mar Requalification", which will promote the rehabilitation of roads and improve the urban aspects of the coast of Fortaleza.

In the State of Piaui, TPF was appointed by BRK Ambiental (the largest private basic sanitation company in Brazil) to prepare design and technical modelling studies for the concession of sanitation services in Picos and its surroundings.

The project is an important step to strengthen the supply and sewage services in these municipalities. Among the activities developed by TPF, are the elaboration of the current diagnosis of the water supply system and the sanitary sewage system and the elaboration of design studies for their recovery. The system will consist of groundwater collection, lifting stations, 9.5 km of raw water pipelines (with diameters up to 250 mm) and treatment reservoirs with a total capacity of 10,160 m³. The expected flow rates are 340.0 l / s for the water supply system and 205.5 l / s for the sanitary sewage system.

← "Fortaleza Cidade com Futuro" program

→ Channel of the Rio Grande port complex

Socio-environmental

Four years after the Bento Rodrigues dam broke, the Brazilian state of Minas Gerais was once again marked by an ecological and human disaster, causing 270 deaths, more than 300 missing and thousands of homeless people. On January 25, 2019, the Brumadinho dam of the mining company Vale broke, causing a gigantic mudslide taking everything in its path.

Within the framework of the emergency action plan and the program to repair human and environmental damage, TPF mobilized a team of more than 200 people to help the victims and Vale.

This program also covers operations to dismantle Vale dams built on the same construction method as that of Brumadinho and presenting a high risk of collapse, currently estimated at ten.

Building on the experience acquired during the failure of the Bento Rodrigues dam in 2015, TPF is currently supporting Vale on several fronts:

- strategic support to Vale (back office) in the development of reparation policies – social and indemnification,
- information management and territorial studies to understand the affected territories and their impacts, proposals for comprehensive repair,
- property and economic assessment of the individual damage of each family,
- preparation and implementation of individual negotiating offices to meet and pay collective compensation – moral damage to more than 120,000 people,
- productive restructuring for the families of farmers who had their properties affected.

Also in the mining sector, TPF was awarded a consultancy contract this year as part of the construction project for the polymetallic zinc, lead, silver and gold mine at Aripuanã. This project is developed in the Mato Grosso region by the Brazilian NEXA Resources and will mobilize our teams for 24 months.

Nexa Resources has hired a specialized service for the management and execution of environmental programs related to "Economic Development and Social Participation" in compliance with the Environmental Control Plan (PCA) and socio-environmental conditions for lead, zinc and copper mining installation license of the Aripuanã Project.

Dam of the Vale mining company (simulation)

Brazil

The first results of this exciting work are already visible. Since June 2019, we have executed four Plans – PCAs in this territory, namely:

- a development program for entrepreneurs and rural producers (execution of diagnoses, construction of action plans, technical advice and training),
- a socioeconomic indicators monitoring program (monitoring the evolution of indicators, data collection and analysis related to socioeconomic dynamics, employment and income, social vulnerability, infrastructure, public services, property prices, basic food basket and crime rates),
- an environmental education program (conducting a rapid participatory diagnosis, workshops, meetings with public managers and community),
- a volunteer program focused on the construction of a social agenda, through the formation of a Community participation group (execution of courses and training aimed at the external school public (teachers, managers and students)).

In addition, this mission implies the necessity of carrying out an integrated management of the programs and order simultaneous actions in the same territory, often addressing the same audiences.

In the state of Bahia, the project named "Development of Methodology for Assessment of Socioeconomic Impact Caused by Interventions on Side Roads" aims to improve traffic conditions on the side roads as well as the quality of life of the rural population.

Through the Infrastructure Secretariat (SEINFRA) and with the support of the World Bank, the Government of Bahia will rehabilitate 3,314 km of rural roads and process 2,654 critical points in 64 of its municipalities.

Among operations to be carried out are drainage works, the construction of manholes, the replacement of wooden bridges with concrete bridges, the construction of cross-sectional passages (avoiding quagmires), earthworks and cladding (gravel) at critical points. The elimination of these critical points aims to make these roads trafficable throughout the year, ensuring greater mobility for rural population. TPF was appointed to measure the impacts of this public policy on road infrastructure on local development and the living conditions of families through two household sample surveys before and after the works. The question is whether there will be a cost reduction in transport of primary goods within the State; whether the condition of economic isolation of these regions will be alleviated; whether there will be gains for trade; local productivity increase; net prices decrease, inputs and products; facilitated access to health, education and other public services. •

NEXA Resources project

← Brumadinho dam failureo

→ Registration point – compensation for victims of Brumadinho

Chile

Structures and railway infrastructures

Our extensive experience in the inspection of engineering structures has enabled us to sign ten new contracts this year with the Chile's State-owned Railway Company (EFE) in order to deliver technical inspection services during rehabilitation and reinforcement of a number of railway bridges across several regions.

We are currently supervising the works that are being carried out on more than 30 bridges included in the contracts for Groups 2, 3, 4, 5, 7, 8 and 9.

In addition, our company has secured extension of the contracts for automation of 114 level crossings as well as the supervision contract for the surface course of said level crossings.

Furthermore, we have been selected to perform On-site Technical Inspections of the Railway Radio Communication System all over the country. •

← Rehabilitation and strengthening of a Group 2 bridge

→ Rehabilitation and strengthening of a Group 4 bridge

Rehabilitation and strengthening of a Group 5 bridge

Colombia

Our group continues to build its reputation as a leading player in major engineering contracts in the transport infrastructure sector, as well as in the building and water sectors. Last year, our teams worked on no less than fifteen projects.

Public transport infrastructure: Metro, tram, bus rapid transit system

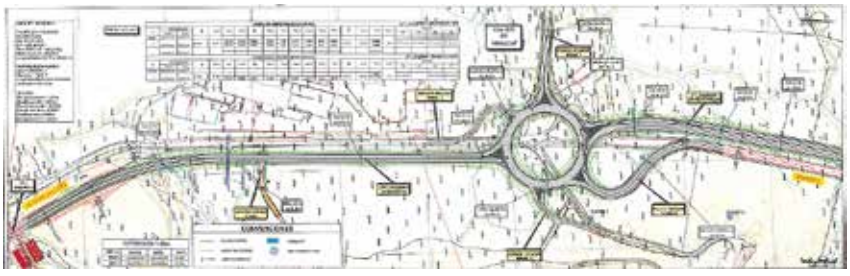
In addition to the feasibility study and the detailed design of works for the implementation of the Transmilenio BRT system on Avenida Villavicencio, this year we finalized the designs of road infrastructure and related public realm (for Av. Contador, Av. Santa Bárbara, Av. Jorge Humberto Botero and Av. La Sirena), and detailed designs for the construction of greenways along the banks of the Córdoba Canal and the San Francisco Canal, all of them in Bogotá.

At the same time, we have delivered design services within the framework of a new bidding process for the concession of Line 1 of the Bogota Metro.

Structures and road infrastructures

Progress continues with the detailed design of the Ánimas -Nuquí road (155 km) and the Río Magdalena Motorway concession. In addition, we supervise the construction of three road corridors: Honda - Manizales, Chía - La Mesa - Girardot and the "Transversal Central del Pacífico" road corridor.

Road infrastructure design, Section 3, Bogota

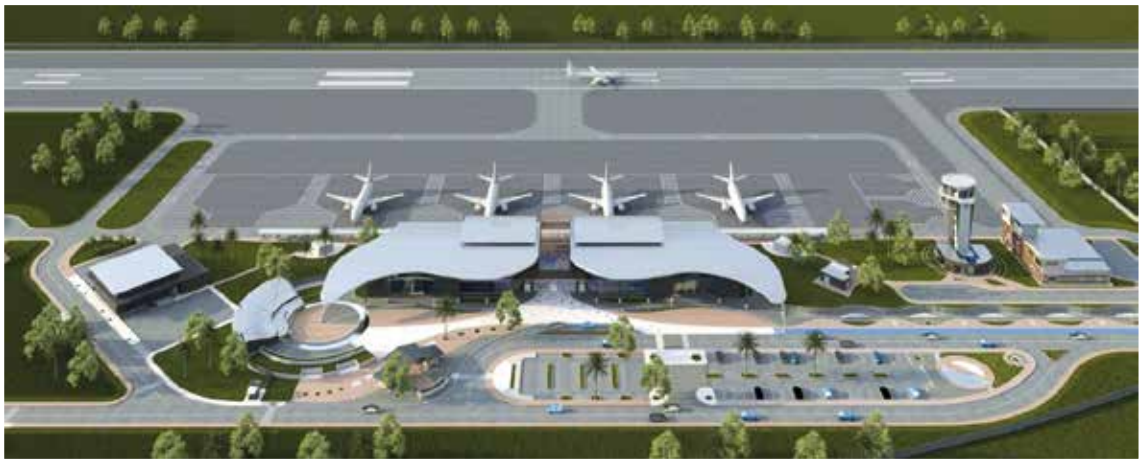


Río Magdalena Highway

Structures and airport infrastructures

The airport sector is currently confirming its highly dynamic activity rate.

This year, in addition to the completion of studies and designs of the Nuquí airport extension and modernisation project in the department of Chocó, we also continued essential supervision activities. These were allocated to us as part of the concession contract grouping together the six airports in the Centre-North region: José María Córdova (Rionegro), Olaya Herrera (Medellín), El Caraño (Quibó), Los Garzones (Montería), Antonio Roldán (Carepa) et Las Brujas (Corozal). Supervision services specifically cover the financial, administrative, technical, legal, operational, environmental and security aspects.



Nuquí Airport Extension and Modernization Project

Colombia

Building sector - Urban planning

In the building sector, implementation of the National Free-Housing Program is continuing.

This vast program launched by the Colombian government comes in response to the situation of thousands of households living in extreme poverty: in total, 30 projects and around 3,500 free housing units consisting of single-family, two-family and multi-family residential units. TPF is particularly pleased to follow up on it.

National Free Housing Program, Chigorodó

Environment - Water

In the area of water and environment, there are pretty good news for our technical teams in charge of supervising several construction sites.

West of Bogóta, on the Juan Amarillo Wetland , construction work on the **Functional Link between Engativá and Suba** is progressing well.

The same goes for the construction of the **water supply and sewage systems in Quibdó**, in the northwest of Colombia.

As for the **Tabio drinking water treatment plant** in the Cundinamarca department, it is now built and put into service. TPF was entrusted with the supervision of the works.

Finally, our long experience in project management has enabled us this year to participate in the project to extend the **El Salitre wastewater treatment plant** in Bogotá. The objective is twofold: double the amount of water treated and reduce pollution of the waters of the Rio Bogotá. •

← Extension of the El Salitre wastewater treatment plant in Bogotá

→ Tabio drinking water treatment plant

Costa Rica

Structures and road infrastructures

This year again, TPF has positioned itself as a major player in the transport infrastructure sector.

TPF continues to perform the technical supervision of the construction of the **Northern Ring Road around San José** in Costa Rica, on behalf of the Estrella-Solís construction consortium. This is a very important project for the country since it involves closing the only existing ring road in the city. The new highway has a length of 5.4 km and 4 junctions, of which two are 3-level interchanges. In addition, 15 structures were designed.

Viaduct – North ring road of San José

We also continue with the supervision of the operation of the concession of **National Road 27**. This contract will end in March 2021.

With respect to the private initiative on the **National Road 32** (San José – Limón), on the section between the bridge over the Virilla River and the crossing over the Frío River, which was launched in 2018, contacts and negotiations with the National Concessions Council have continued, and approval is expected in the early months of 2020.

We have also expanded our work with H. Solís, a company with which we are participating in design-build bidding processes. We provide them with technical solutions to improve the efficiency of their construction contracts. •

Viaduct and ramp at the three-level interchange of National road 32

Ecuador

Building sector - Urban planning

In Ecuador, TPF is a benchmark player in the field of construction and more particularly in the field of school buildings.

Within the framework of the Higher Education Reform Scheme promoted by the Ministry of Education and financed by the World Bank, TPF is notably responsible for supervising the construction of six Higher Education Units, each of 28,000 m².

Additionally, in the province of Los Ríos, we are in charge of the supervision of the construction of the Millennium Educational Unit Valencia 1 (Vicente Rocafuerte), in the municipality of Valencia, and of the Nueva Mocache Educational Unit, in the municipality of Mocache. •

Valencia Millennium Educational Institution 1

Student accommodation – College San Pedro

Honduras

Structures and road infrastructures

The Government of Honduras is determined to transform the country into a logistics hub for Central America. Under this ambitious program, TPF has successfully completed a technical audit of the works performed and the supervision of a turn-key contract for the Villa de San Antonio – Goascorán Logistics Road Corridor project.

The assignment covers Section II (El Quebrachal – San Juan II Bridge) and Section III (San Juan II Bridge – Goascorán). This road is part of the Honduras Interoceanic Logistics Corridor and connects to the south with the road that heads to El Amarillo, on the border with El Salvador.

Honduras has also implemented an extensive western region development program with the support of the Central American Bank for Economic Integration (CABEI) and the European Investment Bank (EIB).

TPF is pleased to provide consultancy services for supervision of works for the rehabilitation of the Western Corridor: section Los Ranchos – El Florido with a length of 36.6 km (Lot 3), in the department of Copán. This road extends to the border with Guatemala.

The aim is to increase trade flows between Honduras and Guatemala and the number of tourists wishing to visit the Mayan ruins of Copán. •

Section III / Villa San Antonio – Goascoran logistics corridor

Los Ranchos – El Florido section of the West highway

Nicaragua

Structures and road infrastructures

In 2019, TPF was awarded a contract to supervise upgrading works on three sections of the Siuna-Rosita road (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).

The works concern:

- Section I: Siuna Ring Road- Coperna Bridge (30.97 km) comprising the 4.33-km long sub-section from the Siuna Bridge to Siuna Town Centre (fast-track construction scheduling: design and construction) and 26.64 km of newly built road.
- Section II: Coperna Bridge - Sang Was Bridge No. 2 (22.81 km).
- Section III: Sang Was Bridge No. 2 – village of Rosita (22.85 km).

The Siuna – Rosita road is part of the northern corridor, a route of vital importance since it connects the Pacific region and the North Caribbean region. It features two lanes 3.50 m in width, as well as 1-m wide shoulders and 1.5-m wide concrete ditches. The pavement structure consists of a crushed aggregate base course stabilized with cement and a hydraulic cement concrete slab (lanes and shoulders), 8 new bridges, reinforcement of 3 bridges and construction of 15 concrete box culverts. The project encompasses major and minor drainage structures, earthworks, environmental impact mitigation measures, safety barriers, as well as traffic signs and road markings.

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. •

America

Panama

Environment - Water

The water sector, particularly drinking water and wastewater treatment is one of the main priory areas on which Panamanian authorities are focusing their efforts. Improving water quality and expanding the coverage of sewerage services in towns near the capital and in the central and western provinces is a real challenge.

About 20 km from the capital city, TPF is currently delivering design services to the Joint Venture Contractor in charge of the expansion of the Federico Guardia Conte Drinking Water Treatment Plant in Chilibre. The aim of the project is to increase the plant's treatment capacity by 15 MGD (0.658 m3/s).

In West Panama, TPF is responsible for producing the detailed design of a wastewater treatment plant (WWTP) within the scope of a design-and-build contract for the sewerage system that will serve East Arraiján. Worth over $120 million, the contract was awarded by Panama's Ministry of Health to PTAR ARRAIJÁN 2016, a consortium led by FCC Aqualia. The WWTP will initially serve a population equivalent (PE) of 151,703 people, but provision has been made for future expansion to 243,504 PE. The plant employs conventional anaerobic digestion technology, including biological nitrogen removal and chemical phosphorus removal processes. The generated biogas can be used at the treatment facilities, both in boilers and as fuel for one generator with capacity to produce electricity that can be consumed by the WWTP itself. •

Wastewater treatment plant of East Arraiján

America

Paraguay

Structures and road infrastructures

In the eastern departments of San Pedro and Canindeyú, the work for rehabilitation of by-roads is more relevant than ever.

In association with TECMA, TPF is currently supervising the rehabilitation works of four sections with a total length of 68 km.

The contract concluded last year with the Ministry of Public Works and Communications should be completed in 2021. •

Peru

Public transport infrastructure: Metro, tram, bus rapid transit system

In Lima, TPF has been conducting a pre-investment study for an Integrated Operations Control Centre for the Lima and Callao Metro System.

The project also involves setting up a Central Clearing House as part of the network's Integrated Ticketing System. It is based on the use of a single transport card that may be accepted by multiple operators, while allowing for fare integration with other modes of transport. Implementation of this system will therefore benefit users of the Lima and Callao network on account of travel time reduction and other transport-related advantages.

In 2019, TPF conducted a demand study, on behalf of Instituto Metropolitano PROTRANSPORTE, regarding the San Juan de Lurigancho - Independencia aerial cable car system, which will connect the COSAC I BRT and Line 1 of the Lima Metro.

The cable car line is designed to cover 6 km and 5 stations. It is intended to improve connections and accessibility for people living in mountainous areas which are difficult to access, as well as to provide direct connection to the city's urban mass transit systems, overcoming the major obstacles posed by the Cerros Amancaes mountain range. The main purpose of the assignment was to assess potential demand for the cable car by analysing populated areas with steep gradients, such as the interconnection between Line 1 of the Lima Metro and the COSAC I (Metropolitano) BRT system. To that end, it was necessary to establish current mobility patterns, both in the study area and in the city as a whole, and analyse the behaviour of prospective users under different scenarios for the project.

Structures and road infrastructures

In 2019, TPF undertook the monitoring and control of the contract for the management, upgrading and performance-based maintenance of the roads included in Package 4 (PE-34U, PE-3ST, PE-3SU, PE-36E, PE-36F and PE-38B) of the Pro Región Puno Road Corridor.

It is located in the provinces of Sandia, Carabaya, Puno, Chucuito and El Collao, in the department of Puno, and has a length of 320.44 km.

TPF is in charge of the supervision services that cover management, monitoring, upgrades, periodic and routine maintenance, emergency repair work, as well as vehicle overload control and information gathering.

Our task is to ensure 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.

← Puno region road corridor

→ Modernization of the road in the department of Cusco, Santo Tomás

In 2019, TPF started working on two detailed designs for upgrades to two roads in the departments of Huancavelica and Cusco.

In the department of Huancavelica, the project entails upgrading the road that links Santa Inés to the Junction with the PE-28A Vía Los Libertadores (Rumichaca Bridge) in the district of Pilpichaca in the Huaytará province. This 31-km long stretch is located at an altitude of 4,000 m above sea level.

In the department of Cusco, TPF is currently conducting a study for upgrading the Quiñota – Llusco – Santo Tomás – Velille road in the districts of Quiñota, Llusco, Santo Tomás and Velille in the province of Chumbivilcas. This road runs along 94.20 km at more than 3,000 m above sea level. •

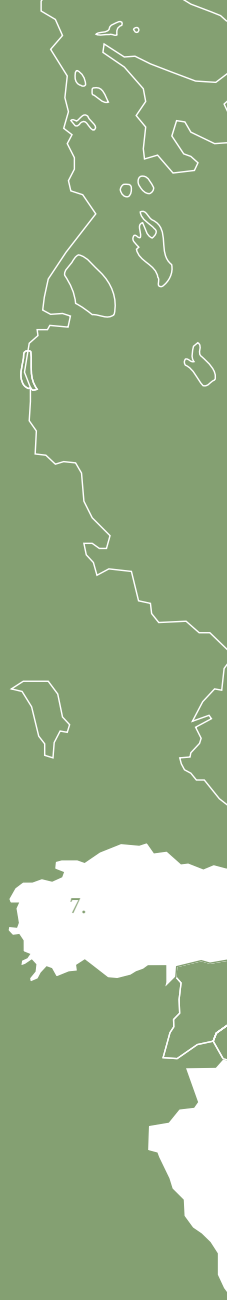
United States

Structures and road infrastructures

The construction of the California High-Speed Rail is undoubtedly one of the most ambitious projects on the North American continent and TPF is proud to be part of it.

California HSR has been divided in several sections (packages). The first step of this emblematic project is to build a high speed line between San Francisco and Los Angeles, designed for trains running at a maximum speed of 350 km/h, which would then connect Sacramento to San Diego over a distance of 1,288 km. TPF is the lead designer of the group that was awarded with the design and build contract for package 4 (around 8 km). Construction is progressing at a good pace. •

Asia



1. Afghanistan
2. East Timor
3. India
4. Laos
5. Philippines
6. Saudi Arabia
7. Turkey
8. Vietnam


1.
2.
3.
4.
5.
6.
8.

Afghanistan

Road structures and infrastructures

The ambitious project that concerns us at the moment is the rehabilitation of the Salang road tunnel, one of the highest tunnels in the world. It is also the group's first participation in an Afghan project.

Passing 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. The contract that we concluded with the Ministry of Public Works of the Islamic Republic of Afghanistan, in partnership with the company Khatib & Alami, provides for the technical inspection of the tunnel and the galleries, including the execution study for the rehabilitation work and preparation of the tender documents. •

East Timor

Structures and road infrastructures

In the isolated enclave of Oecussi-Ambeno, one of our teams is still actively supervising the rehabilitation, construction and maintenance works of a 12 km road between the Tono Noefefan Bridge and the village of Oenuno .

This project is part of the Strategic Development Plan for the period 2010 - 2030 whose goal is in particular to provide the coastal region, located between Noefefan and Citrana, with the road infrastructure necessary for its growth and improvement of life conditions for its inhabitants.

This 22-month contract was awarded last year by the Authorities of the Special Administrative Region (RAS) of Oecussi-Ambeno and of the Special Zones of Social Market Economy (known by the Portuguese acronym ZEESM - Zona especial de economia social de mercado) from Timor-Leste.

This year, TPF signed a new study agreement with the Government of East Timor, under the aegis of the Ministry of Public Works, Transport and Communications for the construction of a junction at the intersection of the Dili-Liquiça road and access road to the port of Tibar Bay, about ten kilometres from the capital.

This new mission is part of the port concession contract and includes the preparation of preliminary studies and execution studies, Assistance to Project Owner for the award of works contracts as well as the environmental and social impact study.

Our Portuguese and Timorese collaborators work together on this project and have a period of 4 months to execute the various tasks.

← Road between Tono Noefefan Bridge and the village of Oenuno

→ Dili-Liquiça Road

Dili Sanitation and Drainage Master Plan

Environment - Water

In line with 2018, we continued our participation in the implementation of the Dili Sanitation and Drainage Master Plan.

Execution studies were carried out jointly with our local partners within the framework of the agreement signed with the National Direction of Water and Sanitation Services of Timor-Leste. They relate to the regulation of rivers Maloa, Kuluhun, Santana, Bemori and Becora, the displacement of impacted populations, works on the sewerage network or the construction of new bridges and discharge works. •

India

Public transport infrastructure: Metro, tram, bus rapid transit system

We are delighted to participate in the second phase of the gigantic Chennai metro project, whose objective is to provide the capital of the Indian state of Tamil Nadu with three additional lines 119 km long. Currently, the Chennai metro has two lines serving 32 stations over nearly 45 km.

Our Indian subsidiary won the contract for Detailed Geotechnical Investigation by testing and submission of Geotechnical reports from Chennai Mofussil Bus Terminus (CMBT) to Butt road (9.18 Km) of Corridor-5 (Madhavaram to Sholinganallur – 47.0 km) for Elevated Corridor of Phase-II. The detailed geotechnical investigation is being carried out to provide the designer with sufficiently accurate information both general and specific about the substrata profile and relevant soil and rock parameters at site on the basis of which the foundation for various structures can be designed rationally.

Chennai Metro – Geotechnical investigations

Structures and road infrastructures

In the State of Goa, the 2019 edition gave pride of place to road infrastructure. As an example, the Manohar Parrikar Canacona Bypass at Canacona, Goa was inaugurated by the Hon'ble CM of Goa Dr. Pramod Sawant in the presence of Union Minister Shri Babul Supriyo on 29th November 2019.

The bypass connects Canacona to Mashem via Char Rasta and reduces travel distance to 7 km from the original 21 km that commuters had to travel on. This bypass is on the National Highway 66 from KM 68/00 (CH 00/00) to KM 85/740 (CH 7/740). The work of the bypass includes 3 bridges namely Talpona, Galgibag and Mashem at a length of 1.5 km and has 6 underpasses for local transport. The total length of the road is 6.21 km. TPF has worked on this project in the capacity of Authority's Engineer and is glad to have contributed towards nation building.

In the State of Maharashtra, work is being executed on full-swing at the two packages of Jalna and Washim of the Nagpur Mumbai Super-Communication Expressway. Once complete, the 700 km long eight lane expressway will connect the city of Nagpur to the city of Mumbai in under 8 hours.

Our role in this project is that of the Authority's Engineer and the client for this work is Maharashtra State Road Development Corporation.

More specifically, the contract we won relates to Package-4, from Km. 162.667 to Km. 217.203 (Section - Village Donad Bk. to Village Januna kh.) and on Package-8, from Km. 347.725 to Km. 390.445 (Section - Village Nhava to Village Georai) in District Jalna.
Note that this highway will be built in EPC mode.

One of the challenging projects of 2019 was also "The Consultancy Services for preparation of DPR for development of Economic Corridor and International Connectivity Routes to improve the efficiency of freight movement in the State of Nagaland.": a total of 271 km.

A feasible general alignment was proposed after detailed Topographical study and Geotechnical Investigations. Detailed innovative structural solutions were required for the stretches having restricted width due to unavoidable obstructions and presence of religious structures, graveyards etc. Detailed investigation work was carried out for surface and underground utilities and also relocation costs were to be estimated. This design project was awarded by NHIDLC (National Highways & Infrastructure Development Corporation).

Manohar Parrikar Canacona bypass

To improve the road network connectivity throughout the state of Assam, Public Works Roads Department, Government of Assam proposed to develop several Major State Highways (SH) across the state of Assam. The authority had appointed our company as a consultant to prepare the Detailed Project Report for up-gradation of the 8 State Highways covering around 263 Km of length.

Narayangarh – Bhadrak railway line

The roads will be upgraded to mostly 2-lane configuration. The major challenge was conducting the engineering field work / data collection within a very short time and designing of such volume. Innovative design solutions & construction methods were proposed to reduce the project cost.

Modernisation of national roads in the State of Assam

Structures and railway infrastructures

TPF won the contract of "Execution of Soil Investigation, Hydrological Survey, Drawing & Design of Bridges in connection with proposed 3rd Line between Narayangarh and Bhadrak under South Eastern Railway, Kharagpur".

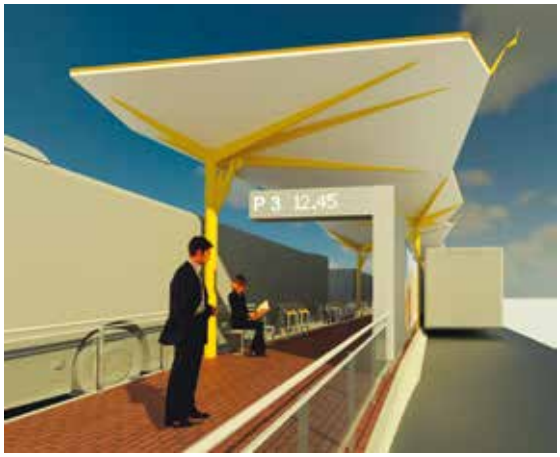
The construction of the third line will help create capacity to cope with existing as well as additional traffic. The busy section between Narayangarh and Bhadrak is mainly used for the movement of coking coal to steel plants as well as the movement of export ore from the areas of Chakradharpur to several ports. Therefore, this 3rd line will help in easier movement of coal. This will help steel plants, power plants as well as the export industry, which will boost the economy of mainly Odisha and West Bengal, and also other Eastern areas. •

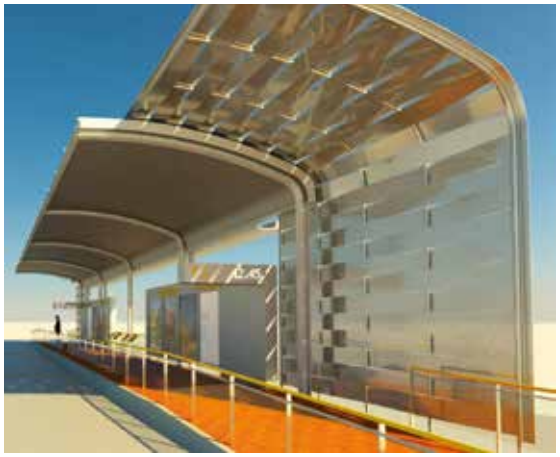
Laos

Public transport infrastructure: Metro, tram, bus rapid transit system

TPF continues to support projects working towards a sustainable environment all over the world. Our participation as a consultant and partner of the company Eptisa Servicios de Ingenieria, S.L. in the implementation of the sustainable urban transport project of Vientiane (VSUTPF) is a good example.

The primary objective of the project is to provide a high-quality public Bus Rapid Transit (BRT) network that will reduce travel times, while increasing reliability. With a length of more than 20 km, the proposed BRT corridor will pass through the core area of Vientiane, linking Wattay International Airport to the National University of Laos. •





Philippines

Public transport infrastructure: Metro, tram, bus rapid transit system

In Manila, TPF is involved in the extension of the line 1 of the Light Transit Rail system project.

TPF continues to provide Independent Checking Engineer Services for the extension, operation and maintenance of Line 1 of the Light Transit Rail.

The project is intended to increase daily passenger capacity from 500,000 to 800,000 throughout the 32- year concession period.

Structures and road infrastructures

One more year, TPF continues with its role as Facility Operator for the Muntinlupa Cavite Expressway (MCX) in partnership with Ayala Corporation.

This 4 km structure, inaugurated in July 2015, connects South Luzon Expressway (SLEX) to Daang, Hari Road, South of Metro Manila.

Structures and airport infrastructures

In June 2019, TPF was awarded the Consultancy Services as Owner's Representative for the Phase 1 of the Unsolicited Proposal for the Renovation and Expansion of Ninoy Aquino International Airport in Manila. It is not only the busiest Filipino airport but also the main airport in Metro Manila.

The Php 102 Billion proposal (2 Billion USD) involves upgrading, expanding and interconnecting the existing terminals of 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 improvements on the existing terminals will increase NAIA's capacity to 47 MPPA. The construction works for the New Annex Buildings to the Terminals and the expansion of the Air Field Infrastructure and Systems will be done in parallel and will increase capacity to 65.0 MPPA and 52 Air Traffic Movements/hour from the current 40 movements/hour. •

← Muntinlupa Cavite Expressway (MCX) toll highway

→ Ninoy Aquino International Airport Extension (NAIA)

Saudi Arabia

Public transport infrastructure
Metro, tram, bus rapid transit system

In Riyadh, the largest metro project in the world is in the final stages, with a total of six fully automatic and mainly overhead lines, 176 km of tracks and 85 stations.

Our work as Independent Checking Engineer in charge of the design review of Lines 1 and 2 (Lot 01) is therefore coming to an end. TPF has particularly focused on underground, elevated and at-grade stations, as well as on the viaducts and the track.
The most significant features of the project are:

- Track length: 6.5 km
- Deposits: 3
- Tunnel using sprayed concrete and NATM: 20.2 km
- Viaducts: 21.3 km
- Elevated stations: 11
- Underground stations: 26
- Egress shafts: 15

Riyadh Metro

Environment - Water

The Group is also present in the water and environment sector, where it is currently working on the extension of two Wastewater Treatment Plants (WWTP).

For the Spanish company Tedagua, TPF produced the design of the expansion of the Dammam WWTP and the design of the works for the renovation and expansion of the WWTP of the Jeddah Airport (Phase II). Both were carried out for the same consortium, under a DBOT modality (design-build-operate-transfer).

Damman WWTP

In Saudi Arabia, TPF strengthened its position in the seawater desalination sector. Three projects are currently underway.

TPF won a contract with the FCC-Aqualia-Alfanar-HAACO consortium to design marine works, namely a seawater intake and an outfall system, for the submission of a tender for the **Jubail 3A Seawater Desalination Plant**.

WWTP of the Jeddah Airport

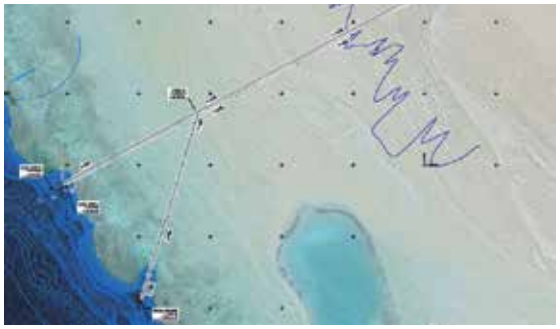
This plant will be located near the city of Al Jubail, on the Persian Gulf coast of Saudi Arabia. Desalinated water production

will be 600,000 m³ per day, while other expected daily flow rates are 1,350,000 m³ for raw water and 750,000 m³ for waste brine.

Our scope of work comprises marine climate and brine dispersion studies, as well as seawater intake design and outfall design. The sea outfall pipes will be made of HDPE in order to meet the redundancy requirements set out in the Technical Specifications of the project.

But not only since TPF was hired by the same consortium within the framework of the tender process for the **Yanbu 4 IWP** project, which involves the construction of a **Seawater Reverse Osmosis desalination plant** (SWRO) with a production capacity of 450,000 m³ per day. This plant will be located near the town of Al Rayis, on the Red Sea coast of Saudi Arabia. The purpose of the assignment is to provide technical support in the preparation of the contractor's proposal for the project, in accordance with the technical requirements set forth in the RFP. Our services comprise an analysis of background information (marine climate, bathymetric and geotechnical marine survey data, sea-bed data, etc.), the conduct of preliminary metocean studies and a study to determine the best technical solution for the plant (seawater intake and brine outfall location, diffuser type, seawater pumping, etc), including far-field dilution modelling using TELEMAC-3D. The design work covers intake towers and pipes, anchors, ditches, and ballast. Other activities include calculations for pipes, flotation and stability, seawater pumping and discharge chambers, and the Bill of Quantities for the marine works.

At the same time, the **Al Shuqaiq** large-scale **desalination plant** construction project is underway. The technical assistance contract that we won last year from the FCC contractor as part of a design-build contract mainly concerns the marine works required for the construction of the desalination plant. •



Yanbu 4 desalination plant project

Turkey

Public transport infrastructure: Metro, tram, bus rapid transit system

Among the highlights of these last twelve months in Istanbul, we can underline the completion of several studies.

TPF finalized on the one hand, the preliminary design and execution study for the construction of the pedestrian tunnel at the Osmanbey metro station in the district of Sisli, and on the other hand, the preliminary draft project for the urban requalification of a former bus station for the metropolitan municipality of Istanbul (İstanbul Büyükşehir Belediyesi - IBB).

Pedestrian tunnel at Osmanbey metro station

Structures and railway infrastructures

The utmost success has been achieved with record-budgeted award of Supervision for Construction of Çerkezköy-Kapıkule Section of Halkalı-Kapıkule Railway Line Project. The project is announced to be the highest-budgeted project under a single contract that the European Union has ever funded under the Instrument for Pre-Accession Assistance (IPA II) framework. The project is co-funded by the European Commission and the Republic of Turkey with a giant 275 million Euro grant from EU and matching national funds.

The value of the Works Contract for the construction of the railway line is around 530 million Euros, while the supervision contract signed by TPF has a budget of 23.2 million Euros.

The project includes the construction of a double track railway line, which will operate both passenger and freight trains with a design speed of 200 km/h. The 152 km ETCS Level 1 fast train track will start at Çerkezköy and end at Kapıkule, at the Bulgarian Border. As the FIDIC Engineer, TPF will carry out the supervision services, design works for 3 stations and the railway track between Kapıkule Station and the Bulgarian Border, and the signalling and electrification works.

The Halkalı-Kapıkule Railway line project is the final stage of connecting to the Trans-European Transport Networks. The project is also significant for contributing to the One Belt One Road project to realize a giant infrastructure and transportation network connecting Asia to Europe. Estimated to be completed by 2023, the project will commemorate the 100th year of the modern Turkish Republic.

In the district of Çubuk, one of the chief towns of the Ankara agglomeration, the design of the Yıldırım Beyazıt University - Çubuk Rail System Line project is showing a progress rate of 50% and is considered as one of the most exciting challenges that TPF has met in 2019.

The alignment works and the design works of the stations are scheduled to be completed during the second quarter of the year 2020.

Other major projects for the modernization and development of the Turkish rail network are on the right track.

As a consultant in one of the core railway infrastructure projects in Turkey funded by the World Bank, TPF is now completing its successful journey in the Supply & Installation of a traffic management system and station loop extensions for the **line sections of Boğazköprü-Yenice and Mersin-Toprakkale** project. After the completion of loop extensions and modernization of the existing conventional railway line, and the commission of installed telecom and signalling systems, all site works have been accomplished. While the project is scheduled to be completed at the end of March, TPF is currently performing contract management tasks as its final responsibility to the Client.

As for the 54 km **Adapazari - Port of Karasu rail link** project, it has taken an important step this year. TPF's services are almost complete, as the construction of the infrastructure phase of the Adapazarı-Karasu Port Railway project has been finished during 2019. Our contract will therefore conclude at the beginning of 2020. The following phase for the construction of the superstructure has been postponed and is expected to be tendered by the contracting authority in 2021.

Finally, with a progress rate over 95%, TPF has reached the last stage of the **Ankara-İstanbul High Speed Train** project,and is expected to finalize the contract in 2021. The Project Implementation Unit (PIU) services performed for Turkish State Railways will be successfully accomplished upon commissioning.

Ankara-Istanbul high speed train

Çerkezköy – Kapıkule section of the Halkalı – Kapıkule railway line project

Building sector - Urban planning

Among the highlights of these last twelve months, we can underline the completion of the execution study which was entrusted to us by the Metropolitan Municipality (IBB) as part of the project to develop the ethnographic park of Istanbul, a large open public space of 350,000 m² dedicated to sports and leisure.

In addition to the development of sports and recreational facilities promoting traditional and modern sports, the project also provides for the development of gardens, the creation of exhibition spaces, restaurants and the establishment of support and administrative services. Note that this mission could not have been carried out without the work of our Turkish and Portuguese experts specialized in disciplines as varied as general architecture, landscape architecture, geology, geotechnics, civil engineering and electromechanics. •

Istanbul ethnographic park

Vietnam

Public transport infrastructure: Metro, tram, bus rapid transit system

The appointment of our company for the construction of line 3 of the Hanoi metro demonstrates our ability to participate in large-scale international projects.

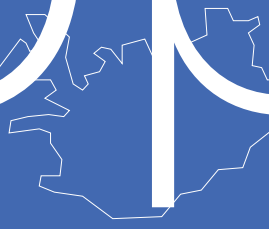
This year, we continued the work that we started in June 2018 as Consultant for Project Management Support (Phase 2).

This assignment includes the civil works and railway systems, the supply of rolling stock, and the installation of an automatic fare collection system for a new metro line with a total length of 12.5 km, with 8.5 km of viaducts and 4 km of tunnel, 12 stations (8 elevated and 4 underground stations), and a maintenance depot.

The total investment, which amounts to €1,127 million, is financed by the European Investment Bank (EIB), the French Government (DGTresor), the French Agency for Development (AFD), and the Government of Vietnam.

As this is one of the first metro lines to be built in Vietnam, the main purpose of TPF is to advise the Client, the Hanoi Metropolitan Railway Management Board, on all the 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. The contract has a duration of four years. •

Europ



1. Belgium
2. France
3. Grand Duchy of Luxembourg
4. Greece
5. Poland
6. Portugal
7. Romania
8. Spain
9. Ukraine

oe

Belgium

Structures and road infrastructures

In order to face environmental challenges and improve urban mobility, we are carrying out multiple actions aimed to encourage the use of bicycles on Belgian territory.

As an example, we are involved in the development of a cycle path along the regional road R22 which connects Zaventem to the region of Kraainem.

By 2021, cyclists will be able to cross Chaussée de Louvain safely using a new cycle tunnel. Within the framework of this project, the company BAM Contractors entrusted us with the detailed stability studies for the construction of the tunnel and the two access hoppers (calculation notes, formwork and reinforcement plans).

In the same spirit, the development of a cycle path was integrated into the construction project for the Jodoigne bypass, for which work should start in the spring.

The construction of this new 2x2 lane road will allow the Chaussée de Charleroi (N29) to be linked to rue de la Maladrerie (N222), avoiding passing through the city centre. The project also provides for the construction of a roundabout on the N29 and N222, the construction of a two-way cycle path along the bypass route as well as the construction of a storm basin and a bridge over the Grande Gette. Our mission concerns roads and utility services.

Cycle tunnel along regional road R22, Kraainem

Building sector - Urban planning

As a responsible player convinced of the need to act in the face of sustainable development challenges, the TPF Group has been engaged in the construction of passive buildings for several years.

In this regard, we can underline the October inauguration of the "Faînes" project in Neder-over-Heembeek, intended to promote social mixity, inclusion, and energy savings by offering 99 passive housing units.

More precisely, the complex is comprising of 4 apartment buildings, twelve of which are of an intergenerational type with a community hall and around fifteen apartments intended for aging disabled people. Particular attention has been paid to the quality of the layout, both in terms of the equipped private roads, the traffic inside the block and the two underground car parks.

The Brussels Capital Region Housing Fund has asked our company for its long-standing skills in technical building services and structural engineering.

Similarly, in Berchem-Sainte-Agathe and more specifically, avenue Dormont, the work undertaken for the construction of a building with 77 passive dwellings came to an end this year.

This project of the Housing Fund of the Brussels-Capital Region offers a beautiful mix of accommodation ranging from studios, duplexes and apartments of 1, 2, 3 and 4 bedrooms. The 5,300 m² above-ground building has three floors, a ground floor and an underground car park of approximately 1,700 m². TPF is particularly pleased to have participated in this project as a structural consulting engineer.

On the site of Jardins de la Chasse in Etterbeek, the completion of the passive municipal administrative centre with a BREEAM Excellent label is imminent, as is the construction of a building with 41 apartments.

This new administrative complex has a surface area of around 30,000 m² (15,000 m² above ground and 15,000 m² underground) is equipped with a geothermal system, heat pump as well as thermal and photovoltaic panels. By spring 2020, it will bring together the municipal hall and all of its administration, social services, a police station as well as premises which will be made available to associations. Our technical building services department will therefore soon have accomplished its mission on this project.

Finally, in Anderlecht, we should mention our recent participation in the passive Goujons project: a complex comprising 4,530 m² of housing and an integrated social and health centre (CSSI) of around 1,500 m² managed by the international medical development NGO Doctors of the World.

The CSSI will occupy the ground floor of the apartment building and will bring together health and social services professionals in one place. The complex will include medical offices, a multipurpose room as an exchange space, a gym, a cafeteria and a "think bubble" office space.
The parking and accommodation on the upper floors will be fitted out to accommodate people with reduced mobility.
From an energy performance point of view, the apartments and the polyclinic will be built according to PEB2017 requirements. Studies are currently underway and the construction project, whose project owner is Louis De Waele, is expected to start in the second half of 2020.

← Passive project of Goujons, Anderlecht

→ Faînes project, Neder-over-Heembeek

Belgium

Note that the Goujons project is part of the vast CITY GATE program, a multifunctional urban block that will transform the Biestebroek district on a total surface of no less than 90,000 m². TPF is responsible for ensuring the full engineer mission in special building techniques and stability.

In addition to these passive construction projects, we continued to work with our teams and our partners on other equally ambitious designs.

In the health sector, the inauguration in November of the Résidence Vallée du Hoyoux represents the culmination of 24 months of work.

This new structure of CHR de Huy includes a 64-bed rest home, a 46-bed rest and care home and 4 short-stay beds, a day centre that can accommodate around fifteen people, as well as a service residence of 31 apartments with access to the care home services. TPF mainly focused on the technical building services section.

In the field of large shopping complexes in Brussels, the renovation and extension of the Westland Shopping Centre in Anderlecht is undoubtedly the most remarkable project currently under way.

The new contract concluded between SA SHOPIMMO and TPF relates to execution control and monitoring for technical building services, energy performance and BREEAM support. The project includes the tasks of renovating the existing mall, creating an extension of 11,400 m² (6,100 m² to the north and 5,300 m² to the south of the complex) as well as redeveloping the outdoor parking area and the surrounding area. Work began in September and is scheduled for completion in June 2021.

The Group has also strengthened its positioning in office real estate by embarking on a new challenge with Promoter BANIMMO and the Marc Liégeois Group. The task entrusted to us concerns the turnkey construction of the new Walloon headquarters of the ING bank in Louvain-la-Neuve, including the mission of consulting engineers in technical building services, energy performance of buildings (including BREEAM support) and stability.

Designed by architectural firm Jaspers-Eyers Architects, the 10,000 m² building consists of a ground floor and four floors of offices built around a central atrium. An underground car park with 350 spaces will complete the package.

This project aims to be exemplary in terms of sustainable development and aims for double certification (HQE and BREEAM Excellent).

Studies were finalized this year. Construction has therefore begun in the first quarter of 2020 and the building should be delivered at the end of 2021.

Meanwhile, in the heart of Brussels, work is progressing rapidly on the future head office of the BNP Paribas Fortis bank, rue Montagne du Parc. It is expected to be completed by summer 2021.

The demolition-reconstruction site of the former headquarters of Société Générale de Banque will give way to a brand new building with an identical gross area (95,000 m²) comprising 5 underground levels and 9 floors above ground. The building designed by Austrian architectural firm Baumschlager Eberle will offer a capacity of 4,500 workstations, around 70% greater than the current capacity.

Renovation and extension of the Westland Shopping Centre in Anderlecht

Vallée du Hoyoux Residence

New head office of BNP Paribas Fortis bank, Brussels

It will also meet the highest environmental and energy performance requirements.

TPF was responsible for the technical aspect of the project and more specifically for stability: study and phasing of demolitions for the existing building, supports to be implemented, preparation of the technical specifications and demolition survey statement, monitoring of the demolition site, assistance in the development of plans for the reinforcement of basements and reinforced concrete cores for the new building, and preparation of specifications for the new building.

In addition, TPF is still active in the hotel industry. In Brussels, the construction of the new hotel for Swedish hotel group PANDOX is progressing well.

NHOW Hotel Brussels

Spanish group NH Group will be a tenant and open the NHOW BRUSSELS in the fall of 2021, in place of the old Hyatt Regency hotel. The hotel has been completely redesigned and renovated according to the concept "Spend your night in an art gallery" and will offer 305 rooms and public spaces (restaurant, reception and corridors) on nearly 22,000 m².

Let us underline that for this project, TPF is in charge of project management and construction management for the design concept carried out by NH and Sulitz & Muñoz Architects (Madrid - Hamburg).

New administrative centre and housing on the site of Jardins de la Chasse, Etterbeek

Belgium

New Walloon headquarters of ING Bank, Louvain-la-Neuve

In the food industry, the start-up of the first two production lines of the new AVIETA factory in the province of Liège will be on the horizon by 2020.

The manufacturer of sweet waffles located in the province of Liège in Vinalmont (district of Huy) and in the province of Limbourg in Zonhoven (district of Hasselt) is currently building a new 15,000 m² factory on its Liège site, in addition to its existing production unit.

AVIETA will have four new production lines, expandable to eight, by October 2020.

This building will also house packaging and storage areas, as well as offices and social spaces.

The construction of the factory is accompanied by a purification station for the treatment of industrial wastewater and a storm basin for the management of rainwater.

Note that for this project special attention was paid to fire safety and logistical organisation.

TPF is active on all fronts to lead this project, whether for architecture, engineering (technical building services, including production equipment), civil engineering, consultancy relating to hygiene, management or coordination of operations.

Finally, in Lokeren, the renovation and extension of the EDUCAM training centre has reached its final phase.

The EDUCAM training centre is dedicated to companies in the automotive and related sectors, and will soon be housed in the building formerly occupied by a tire centre, next to the building already dedicated to this activity.

The building transformation work involved moving a floor, fitting out classrooms as well as installing sanitary equipment, exhaust gas extraction system and a freight elevator.

The floors, the roof and the facades have undergone renovation work in order to comply with the current EPB requirements. The extension of the building allows to save space in the back for additional workshop space, and in the front for reception and a meeting room. A new technical area has also been added to the east facade. The whole project covers a total area of 1,200 m².

TPF carried out studies in stability and technical building services as well as monitoring architectural work on site.

We should also mention that this project was designed by the Liège architecture office AURAL sprl.

New AVIETA factory in Vinalmont

EDUCAM training center, Lokeren

Maintenance and operation of technical installations

This year, TPF expanded its client portfolio with the signing of two new contracts in the field of maintenance of technical installations.

The first contract concerns the Technopolis interactive centre in Mechelen, a centre intended for those curious and passionate about science, including the engineers of tomorrow.

For eight years, our technicians will ensure the maintenance of technical installations using an approach dedicated to the rational use of energy. The objective is to move towards an exemplary and energy neutral building (zero energy) for heating, domestic hot water, lighting, etc.

The second contract concerns the King Baudouin Stadium belonging to the city of Brussels, an essential place which regularly hosts sporting and cultural events and welcomes nearly 600,000 people each year.

TPF won the full warranty maintenance contract for a period of five years for all of the stadium's technical installations and its annex buildings.

This new client further strengthens TPF's position on the market for the maintenance and renewal of HVAC installations.

← Technopolis, Mechelen

→ King Baudouin Stadium, Brussels

Energy performance contracts: Two strategic areas of development

Since this year, TPF has used a high-performance tool for its own needs, which it also offers to its customers. This tool is the energy accounting platform Enectiva developed by our partner Enerfis.

This information system is intended to monitor and analyse the energy consumption in a building or a set of buildings. It makes it possible to concentrate all information relating to energy consumption in one single database which can be consulted via an internet portal.

It also offers interconnection with energy meters, direct recording of consumption, reporting and sending of automatic alarms. The French Community Commission (COCOF) of the Brussels-Capital Region has adopted this software and installed more than 200 smart meters. We should mention that other clients were also attracted by this concept and are very close to reaching a decision.

As an energy design office, TPF brings its expertise and know-how in the implementation of an energy management system (EMS), compliant with the ISO 50001 standard.

This standard based on the principle of continuous improvement does not specify any particular solution. It offers organisations an adapted methodology which they can use to improve their energy performance.

The objective of the standard is to provide a formula for identifying savings opportunities as well as the establishment of an energy management system which makes it possible to measure and improve the energy performance of activities.

Some structures have adopted this system, which has already proven its worth. This is the case with the De Motte swimming pool located in the municipality of Zaventem. TPF concluded in February 2017 a contract binding it for ten years to this establishment with the option of extending it for ten new years. At present, the results are already impressive since they attest to a reduction of almost 40% in electricity consumption. •

France

Structures and road infrastructures

In the road sector, we will note the completion of the road link project work for RD65 and RD9 departmental roads.

Within the framework of a structuring operation for the mobility of the Aix-en-Provence territory, TPF carries out a complete project management and roads and utility services (VRD) mission, including the design of a structure for crossing the coastal Arc river.

Structures and airport infrastructures

For several years, TPF has occupied a leading position in the French airport sector. Our experts in the sector are currently active in the airports of Nice Côte d'Azur, Saint-Étienne-Loire, Bastia Poretta, Basel-Mulhouse and Marseille-Provence.

While studies for the extension of terminal 2 at Nice Côte d'Azur airport continue, TPF has confirmed its expertise in the field of airport infrastructure by winning the contract for project management, forecast management of works and programming of maintenance of runways at Saint-Etienne-Loire airport on behalf of the Lyon Métropole Saint-Etienne Roanne Chamber of Commerce and Industry.

In the meantime, operations to refurbish aircraft and taxiways stations were delivered during the year at Nice Côte d'Azur airport (T2.3 stations and TUBA area) and at Bastia Poretta airport (Taxiways N and S).

Finally, our expertise in Building Information Modelling (BIM) has enabled us to carry out the modelling of the control tower at Basel-Mulhouse airport as well as the survey and modelling of all the buildings and internal networks of Marseille-Provence airport.

Building sector – Urban planning

At the start of the year, TPF won the competition for the construction of the New Trousseau Hospital at the University Hospital of Tours (CHU).

This flagship project led by AIA Life Designers is part of the vast real estate restructuring plan that will allow the consolidation of the five hospital sites of the CHU de Tours on two sites (Bretonneau and Trousseau) by 2024.

The set includes:

- a building with an area of 70,000 m², with a capacity of 576 beds and spaces supplemented by technical and surgical activities (fixed tranche) + 400 parking spaces,
- a 12,300 m² biology building (optional tranche 1),
- a paediatric building with 138 beds of 16,500 m² (optional tranche 2),

The CHU de Tours project follows a high environmental quality approach and meets the challenges of digital architecture (BIM). On a technical level, the group presented an approach clearly oriented towards new technological choices and a "full digital" approach, as well as an innovative and efficient energy strategy, in particular through the recovery of fatal energy. Work will start in 2021 for delivery in 2024.

Also in the health sector, we will mention the services entrusted to us for several design-build markets.

These relate in particular to the construction of a 85-bed adult psychiatric care building for the Bon Sauveur d'Alby Foundation alongside GCC (agent) and EMaa or the reconstruction on site of a 105-bed nursing home for the Sainte-Foy-lès-Lyon Hospital Centre with BLB Constructions (agent) and CBXS architects & town planners.

Finally, not far from Metz, in the north-east of France, TPF can congratulate itself for having contributed to the success of the project of the European Directorate for the Quality of Medicines & HealthCare (EDQM) of the Council of the Europe.

This year, TPF carried out the acceptance of the secondary site of the EDQM in Ars-Laquenexy. Opened and inaugurated on November 15, 2019, it will make it possible to securely store the reference standards of the European Pharmacopoeia, in addition to those already stored in its Strasbourg building.
The realisation of this new building is obviously the result of the collaboration of a whole team and, to be complete, we must mention that companies Rabot Dutilleul Construction and Celnikier & Grabli Architects) greatly contributed to its success.

New Trousseau Hospital

France

Office building – ZAC Campus Grand Parc

In the tertiary sector, things are looking pretty good for our engineering office with the initiation of studies relating to the construction of three office buildings, one at the heart of the ZAC Campus Grand Parc in Villejuif and the two others in Montigny-le-Bretonneux.

More specifically, at the request of Demathieu Bard Immobilier, TPF began the structural, roads and services, thermal and fluids studies for the construction of a 25,500 m² office building in the heart of the activity centre Campus Grand Parc in Villejuif. This property complex designed by Baumschlager Eberle and Same Architects intends to obtain several environmental certifications and labels (BREEAM excellent, HQE BD 2016 excellent, OSMOZ, BBC Effinergie 2017, E2C1).

TPF has been entrusted structural engineering regarding the construction projects of the Native building designed by Bridot Willerval for CODIC and the Aster building designed by Scau for Realites, which will develop respectively 19,000 m² and 24,500 m² in Montigny le Bretonneux.

At the same time, this year made it possible to finalize the all-trade studies of Schindler France's head office in Vélizy-Villacoublay and to deliver various tertiary operations designed by TPF.

We note in particular the delivery of the Eko Active building in Marseille for Vinci Immobilier (Franck Hammoutène Architecte) and the Connexio building in Nice for BNP Paribas (Marc Barani Architecte) as well as the redevelopment of the CCI Grand Lille (Agence Philippe Prost).

As for the construction project for the Schindler France head office, TPF is now involved in the works phase after having completed the studies.

Mixed real estate projects were also popular this year and as such we will point out the mixed program which will be developed on part of the Air France site in the heart of the Sophia Antipolis technopole as well as the conversion project of the old Citroën garage in the heart of the 14th district of Paris. Our mission, All-Trade Engineering.

The consortium made up of Icade Promotion, the Swedish real estate company Stena, the architecture agency Wilmotte & Associés and TPF was responsible for carrying out a mixed program of 14,000 m² (offices and housing) on a part of the Air France site.

In Paris, TPF will carry out the transformation and elevation project of the Citroën garage alongside Palast architects (agent)

Connexio office building

← Aster office building

→ Eko Active office building

RIVP Paris 14th mixed program

France

Galileo surveillance centre

Ivry-Paris XIII waste recovery centre

Native building

and September Architecture. This ambitious project, led by the Régie Immobilière of the City of Paris, will develop more than 8,000 m² distributed in student accommodation, business premises intended for craft workshops and shops.

In the digital field, TPF has once again strengthened its expertise in the design of Data Centres by winning several contracts this year. The deployment of new technologies such as 5G and security are important subjects for the group.

Our French subsidiary was awarded part of a three-year framework contract to study, design and build several Data Centres in France with a view to the deployment of 5G by Bouygues Telecom.

Our subsidiary was also awarded the prime contractor responsibility for the infrastructure works of the future high-performance computer from Météo France in Toulouse, the project management assistance mission for the installation of the data centre of the National Office of Aerospace Studies and Research (ONERA) within the framework of the construction project of the N2 building on the Palaiseau site as well as a mission of design and monitoring for the realisation and maintenance of the surveillance and security centre GALILEO in Saint-Germain-en-Laye on behalf of the Ministry of Armed Forces.

Pierrefonds South Waste Centre

In the promising waste recovery and treatment industry, activity has been particularly intense in recent months.

While TPF continues its mission of assistance to project owner for the transformation project of the SYCTOM household waste recovery centre in Ivry-Paris XIII, the new process of the sorting centre in Paris XV was inaugurated on October 15, 2019 after ten months of work.

Completely modernized and equipped with the most modern technologies, the centre is now suitable for extending sorting to all plastic and metal packaging. The operation that we carried out with the IHOL Group made it possible to increase the processing capacity to 32,200 tonnes/year and to improve the safety and working conditions of sorting agents. TPF ensured the design and the technical follow-up of the structure, fluids and electricity lots as part of a global public performance contract.

In Reunion and more specifically in Pierrefonds, TPF was called upon as part of the global performance public market for the design, construction, operation and maintenance of the South Waste Centre in Pierrefonds.

This contract was launched by the mixed waste treatment union ILEVA and awarded to the consortium led by CNIM.

TPF is involved in this project as a subcontractor of the Civil Engineering sub-group (Spie Batignolles / GTOI / COLAS) for preliminary draft, project and visa missions.
This is a key project for the island's energy transition since this ILEVA multi-sector tool should treat the waste of 60% of Reunion Islanders and produce renewable electricity for more than 10,000 homes.

In France, the Group also stands out for its presence in major sports and leisure infrastructure projects.

Stadium Christian Maudry

France

ESTP

MathSTIC
University
Paris 13

In this regard, TPF won alongside the A26 Architectures agency the competition launched by the urban community of Durance Luberon Verdon (DLVA) for the construction of the Manosque Aqualudic Centre.

This ambitious project with a floor area of 5,000 m² includes a sports pool with 8 lanes, the equivalent of 525 m² with the bleachers, a multi-purpose learning pool of 325 m², a water play area for children, and outside, a versatile Nordic pool of 250 m², a mineral solarium, a plant solarium and an outdoor water play area.

TPF provides a complete project management mission for all trades, including water treatment. We will now carry out studies that will combine technicality and architectural ingenuity to develop a project perfectly integrated into its environment which should be delivered in 2022.

2019 was also marked by the inauguration of the Stadium Christian Maudry in Nogent-sur-Seine.

This 4,000 m² sports complex was designed by the agency Engasser & Associés as part of a design-creation contract won by Demathieu Bard.
Within the consortium, TPF carried out all trades studies for this project located in a particularly constrained site placed above the tunnel of the A86 motorway and bordered by railways.

In the field of teaching and research equipment, the construction of the MathSTIC building at Paris 13 University, as well as the Special School of Public Works (ESTP) in Rosières-Près-Troyes, and the MB3 laboratory of INSA Toulouse and Bondy School Group are all examples of a variety of projects that we are able to carry out and to which we are currently dedicated.

TPF won with VIB Architecture the competition launched by Epaurif for the construction of **the MathSTIC building** (Mathematics and IT) of the University of Paris 13 and the creation of the new entrance to the Villetaneuse Campus. The project notably includes bio-based, recycled and low-carbon solutions.

The Special School of Public Works, Building and Industry (ESTP) in Rosières-Près-Troyes, designed by Jean-Pierre LOTT and technically designed by TPF, has now entered the work phase. With a usable area of 3,200 m², the building will house classrooms, amphitheatres, research laboratories as well as administrative and social premises. It will welcome around 350 engineering students by 2021.

Regarding **the INSA Toulouse MB3 laboratory**, it was inaugurated in July 2019: mission successfully accomplished for TPF in charge of project management for all trades. The nearly 8,000 m² building designed by Espagno Milani Architectes Associés is now home to a world-class university centre of excellence in the field of biotechnology.
Finally, among significant events, we will also remember the competition we won alongside Gaëtan le Penhuel Architects for the construction of **the Bondy school group** (29 classes, 6,600 m²) as well as the **Departmental Grand Prix for Construction and Sustainable Development 2019** awarded by the Hautes Alpes Departmental Council and the Architecture, Town Planning and Environment Council 05 for the La Grave school group rehabilitation and extension project designed by TPF and MAS Architect.

In terms of urban planning, the Hautes Promenades de Reims was inaugurated as part of the European Heritage Days.

The landscaping and urban redevelopment project carried out by Atelier Jacqueline Osty & associates and TPF covers 10 ha and aims to enhance nature in the city through the establishment of a green and blue strip, and to energize the local economic activity, while improving the quality of life of its inhabitants.

The redefinition of the sharing of public space between different modes of travel is also one of the challenges of an exemplary operation in terms of environment. The site is classified under the Environment Code.

France

The management and organization of the construction site took into account the strong natural character of the site for more than one reason: the presence of protected species was the object of the greatest care, the topsoil in place was preserved, limited construction and storage areas and controlled production of waste.

A major project was also won with Atelier Jacqueline Osty & associés: the reclassification of the 22 ha of Pointe de la Fumée on behalf of the City of Fouras.

TPF provides roads and services engineering for the development of the northern end of the Aiguille peninsula, north of the Charente estuary.

TPF also participates in the design of the Baillargues multi-slide park alongside Agence Paysages and BRL Ingénierie.

Designed as a showcase for the eastern entrance to the Montpellier Mediterranean metropolis, this 12-hectare development revolves around a body of water that will host equipment dedicated to outdoor recreation (nautical ski lift), but it will also improve flood risk management.

La Grave School Group

Promenades de Reims

Smart cities

Dijon Métropole has appointed TPF to support it in the operational implementation of the connected space management project "OnDijon" whose design, implementation, operation and maintenance (CREM) contract has been awarded to the consortium Bouygues Energies & Services, Citelum , SUEZ, Capgemini.

A first step was successfully taken with the inauguration in April of the connected cockpit intended to remotely manage all of the urban equipment of the 24 municipalities in the territory (traffic lights, lighting, video protection, road services, etc.).
This ambitious smart city project also concerns the renewal of public lighting, traffic light intersections, video protection, access points to the city centre, security, safety and technical alarms for buildings, high speed network (deployment of fibre optics), the digital radio network for full coverage of the Dijon Métropole territory or even intelligent parking.
The mission entrusted to TPF relates to project management and technical assistance in the design, construction, operation and maintenance phases.

TPF has been a key player in energy transition in Grenoble since 2016, and intervened on the design and realization of the Learning Grid. It was inaugurated in June 2019 by Schneider Electric and the Grenoble Chamber of Industry and Commerce on the site of the Grenoble Institute of Trades and Techniques.

This Micro-Grid project simulates the energy functioning of the city of tomorrow by deploying campus-wide intelligent energy management technologies, controlled from the energy cockpit.

A real educational tool, the cockpit which houses the centralized station for the Micro-Grid energy management and modelling systems will also host training and experiments applied to the energy theme.

As part of the development of this exemplary project at European level, TPF provided a full project management mission for the renovation of electrical, thermal and lighting installations with the implementation of an energy metering plan, for the implementation of renewable energy production equipment (photovoltaic panels, micro-cogeneration plant, connection to the electrical and thermal networks, storage batteries, etc.) as well as the construction of the energy cockpit alongside the architecture agency Workshop A. •

Grand Duchy of Luxembourg

Building sector - Urban planning

On the heights of Hamm near the city of Luxembourg, construction sites are flourishing and a whole new district is taking shape. Since our previous activity report, the GREENSQUARE office complex has been delivered, while the construction site for the CONNECTION project has been implemented.

Let's take a closer look at the **GREENSQUARE** project. It is made up of six five-storey office buildings articulated around three common cores. An auditorium, a parking lot and technical rooms have been built in the basement. It is a remarkable success from an energy and environmental point of view since it won the BREEAM Excellent certification and the energy performance certificate (CPE) with the AAA class. This 25,000 m² project, whose owner is the company Greenfinch Global Invest Fund SCA SICAV-FIS FUNDI 1, was designed by the Luxembourg architecture office ARCHIMAGINE.

Finally, let us mention that TPF was given the complete mission of technical building services and structural engineering.

As for the **CONNECTION** project, which is currently underway, it concerns a mixed real estate complex of approximately 83,000 m² comprising 17,000 m² of offices on four floors,

Greensquare project, Hamm

4,000 m² of auditoriums and 16,000 m² of shops and restaurants on the ground floor and on level -1, a storage area of 11,000 m² in the basements as well as 35,000 m² of underground parking spaces. Construction of this new complex designed by the Belgian office A2RC Architects should be completed by the end of 2022. TPF carried out studies relating to structural engineering and technical building services, the project owner being the company Silverfinch SA.

In a completely different field, we announced in our previous edition the launch of the sports centre project on the former steel areas of Belval.

This ambitious real estate program initiated by the Belval Fund is part of the reconversion site of the largest steelworks in Luxembourg into a new modern and sustainable urban district. The work carried out is progressing well since a first simplified preliminary draft could be delivered this year.

Connection Project, Hamm

Grand Duchy of Luxembourg

The studies that we are carrying out within the MORENO consortium, A2M sprl PROGROUP sa - ICB sarl - TPF Luxembourg sa - TPF ENGINEERING sa - FAAST - BABYLONE - PRONEWTECH - ARCHIMEN will continue in 2020 and work should start in 2021.
The future Belval Sports Centre will be dedicated to school, extra-curricular and public use. In particular, it will be made available to the University of Luxembourg, several high schools and primary schools or even sports associations.

This project is on a large scale. It will consist in a reception structure, a swimming centre composed of three pools (two pools with six lanes of 25 m and a diving pool of 15 m with a depth of 3.8 m) as well as a multisport hall housing a teaching centre and a multisport centre composed of a large room that can be subdivided into four units of 27 x 15 m and different rooms for various sports (climbing, weight training, squash, cardio, martial arts, etc.).

The program also provides for the development of an outdoor sports park including fitness and jogging courses and outdoor fields (football field in synthetic material of 100 x 60 m, 2 multisport fields of 40 x 20 m, 3 beach volleyball courts of 24 x 16 m). •

Connection Project, Hamm

Greece

Public transport infrastructure: Metro, tram, bus rapid transit system

In Macedonia, the construction of the Thessaloniki metro continues to gain momentum. The construction of this environmentally friendly driverless urban transport system falls under the priority guideline for "Sustainable development and quality of life in Central Macedonia". It will 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 includes the main line (9.6 km) and 13 stations, as well as a 4.78 km extension towards the east and Kalamaria with 5 new stations. It will be automatically operated, without drivers, and the stations will be equipped with platform doors.

Moreover, provision has been made for the construction of the infrastructure required for the future extension of the metro to the airport, and for the construction of a bus transfer station to/from Micra Station. A car park facility is also planned to be constructed in the same area.

With capacity for 65,000 passengers/day and a 15-minute journey between Micra Station and the centre of Thessaloniki, the number of trips by private cars will be proportionately reduced. •

Poland

Structures and road infrastructures

The year 2019 was marked by development in the field of road investment design. TPF has started a project on one of the most important transit routes in Poland connecting the west with the east of Europe, which is a connection of the international Via Carpatia route with Ukraine, contributing to the economic development of Central and Eastern Europe.

As part of the design concept, TPF will prepare documentation for 58 km of class S road, divided into 3 implementation sections. The beginning is located at the end of the Piaski beltway, and the end is located at the border crossing with Ukraine in the city of Dorohusk. The Chełm bypass is excluded from the scope. It will be a S-class two-lane road with reserve for possible extension of the third lane. The study also includes engineering facilities, animal crossings, local roads and service areas for travellers.

Structures and railway infrastructures

The mobility of tomorrow remains one of our priorities. TPF is currently supervising the major construction site for the public transport network in the Szczecin agglomeration. The project is located in the West Pomeranian province within the municipalities of the City of Szczecin, the City of Stargard, Goleniów, Gryfino, Kobylanka, Police and the Commune of Stargard. It concerns the creation of the Fast Urban Railway network on the following existing railway lines:

- No. 351 on the section Stargard - Szczecin Główny,
- No. 273 on the section Gryfino - Szczecin Główny,
- No. 401 Szczecin - Goleniów with a branch on LK 402 and 434 to PL Szczecin Goleniów,
- No. 406 with its modification on the Szczecin - Police section with the construction of a second track on the section Szczecin Główny-Szczecin Turzyn.

The project includes the construction of 23.75 km long railway lines, the construction of integrated nodes and stops with P&R and B&R parking lots (elevators, ramps for the disabled) and transport integration devices (ticket machines / validators).

Szczecin Metropolitan Railway Project – Stargard Station Reconstruction

Each stop covered by the project will be available to people with reduced mobility.

The project will allow the creation of a modern transport system based on the agglomeration railway, supplemented with bus lines that will take over the delivery function to and from the resulting interchanges and tram lines. The creation of interchange junctions connecting different modes of transport with appropriate accompanying infrastructure will increase the role of public transport in relation to individual transport. The project will increase the number of urban rail passengers in the agglomeration and contribute to reducing car traffic in this area.

As part of the office's activities, we have concluded with Polskie Koleje Państwowe S.A. nine contracts for the development of design documentation for railway stations in the following cities: Węgliniec, Łuków, Gdańsk Oliwa, Gdańsk Wrzeszcz, Władysławowo, Reda, Puck, Włocławek and Olsztyn Główny.

TPF became one of the main Contractors of station projects in Poland as part of the Station Investments Program for 2016-2023. Undoubtedly, the most interesting and also the biggest challenge is the station project in Olsztyn - the capital of the Warmian-Masurian Voivodeship also known as the land of 1000 lakes. As part of this task, TPF will design platforms, the track section and the station building connected to a modern shopping centre in the immediate vicinity.

Building sector - Urban planning

TPF started the implementation of the design documentation for the construction of the athletics stadium together with an athletics hall and a shooting range in Katowice for the most successful sports university in Poland - AWF Katowice.

The project involves the construction of a modern athletics hall with an auditorium of about 600 places and an athletics stadium with an auditorium for about 1,200 people. •

Athletics stadium for AWF University of Katowiche

Portugal

Structures and road infrastructures

In Portugal, as elsewhere, projects are increasing to improve traffic conditions and the safety of road users, whether they are motorists or cyclists.

As such, the rehabilitation works of the 342 km of roads included in the Baixo Alentejo sub-concession, including a 68 km toll section integrated into the A26 / IP28 between Roncão (Setúbal district) and Beja (District of Beja) are advancing at a good pace.

In addition to supervising and controlling the works, our teams continue to ensure safety and health coordination on the site, in accordance with the expectations of the company SPER (Sociedade Portuguesa para a Construção e Exploração Rodoviária, SA)..

This year, TPF also won the public call for tenders launched by the company IP-Infraestruturas de Portugal as part of the construction of a new road link between the industrial area of Cabeça de Porca and the A11.

This project is part of the development program for economic activity zones whose objective is notably to improve the attractiveness and accessibility conditions.

Concretely, this new road axis of approximately 5 km will allow a reduction in traffic on the national roads EN101 and EN207.

The design and execution studies to be carried out within nine months require a good mastery of cartography, topography, road techniques (layout, drainage, earthworks, pavement,

Baixo Alentejo sub-concession

Fajã da Ovelha expressway – Ponta do Pargo (Madeira)

signalling, safety), special engineering structures or still assessing environmental impacts in transport infrastructure projects.

On the island of Madeira, work on the second phase of the Fajã da Ovelha - Ponta do Pargo expressway should be completed by the end of next year.

The Regional Government of Madeira, through the Regional Secretariat for Equipment and Infrastructure, has entrusted us with assistance in supervising the works and coordinating safety on the site.

The second section of the expressway covers 5.7 km. It includes the construction of various works (6 bridges and viaducts, 4 overpasses, 6 tanks for irrigation and fire fighting purposes), landscaping, essential connections with the existing network (via 4 roundabouts and 11 branches) as well as the creation of 6 restoration works.

Another major project in Madeira is the project of the concession company Via Litoral SA, in charge of the maintenance and operation of the VR1 expressway, relating to the detailed inspection of road embankments on the section between Ribeira Brava and Machico.

In 2020, TPF will inspect 57 slopes.
Similar work had already been carried out previously (in 2008, 2013, 2015 and 2018) on a hundred slopes and had led to the preparation of widely detailed inspection reports including risk analyses and corrective measures to be taken on the basis of risk classification.

Let us add that in this area, we are also present in other regions where a whole series of slopes are currently the subject of in-depth studies related to the prevention and mitigation of the risks of collapse.

Regarding the development of soft travel, around 2.5 km of cycle paths will be developed in Lisbon and Oeiras.

These projects are promoted by The Municipal Mobility and Parking Company of Lisbon and by the City Council of Oeiras. Studies are currently underway.

In addition to the design of cycle paths, TPF is in charge of the scaling and design of facilities along cycle routes, intersections and accesses. These will ensure the comfort and security of coexistence between cyclists and other users.

Road connection between the industrial area of Cabeça de Porca and the A11

Portugal

Structures and railway infrastructures

2019 was an important year for the Portuguese rail sector since TPF was awarded by the public manager of railway infrastructure IP-Infraestruturas de Portugal the monitoring of the construction of the new railway line between Évora and Elvas (connection with the eastern line). This line is all the more important as it will be part of the future "southern international corridor" which will link southern ports such as Sines to Spain and the rest of the European continent. This investment represents over 530 million euros.

The work resulted in the creation of an 88.5 km single-track electrified line composed of 4 sections:

- Évora (station) - Évora Norte, a 9 km section along an existing canal,
- Évora Norte - Freixo, a 20.5 km section including the construction of a technical building, 13 standard structures and 6 non-standard structures as well as the necessary facilities for a future double track,
- Freixo - Alandroal, a 20.5 km section including the construction of a technical building, 16 standard structures and 10 non-standard structures as well as the necessary arrangements for a future doubling of the tracks,
- Alandroal - Elvas (connection with the eastern line), i.e. a 38.5 km section including the construction of a technical building, 26 standard structures and 13 non-standard structures as well as necessary adjustments for a future doubling of the tracks.

No less than 200 technicians and engineers are mobilized for a period of four years to provide advice, provide technical management and health and safety coordination on the site and supervise the civil engineering works.

Railway line between Évora and Elvas (connection with the eastern line)

Finally, the studies that we are carrying out in a consortium for the modernization of the Beira Baixa railway line, between Mangualde and Guarda on the one hand, and Guarda and Vilar Formoso, on the Spanish border, on the other, are still in progress. A total of 124 km of tracks.

Let us mention that it was the company IP-Infraestruturas de Portugal who entrusted us with the preparatory studies for the launch of the project including the feasibility study and preliminary design, the environmental impact study, the detail design as well as the environmental compliance report.

In addition to renovating the tracks, the project includes the construction of several structures, including 9 special structures, 29 overpasses and 7 underpasses, as well as the rehabilitation of 27 train stations, including 11 main and 16 secondary ones.

Beira Alta railway line

Maritime and port infrastructures

On the island of Madeira, work to rehabilitate and repair the port infrastructures of Funchal, Machico, Caniçal and Porto Santo is progressing well.

The mission entrusted to us by the Ports Administration of the Autonomous Region of Madeira relates to the inspection of structures, the review of existing reports and available information (topographic and hydrographic surveys) as well as to execution studies.

Building sector - Urban planning

This year again, TPF distinguished itself by its presence in large-scale real estate projects relating to healthcare establishments, hotels, housing, tourism and even industry.

In the field of healthcare real estate, TPF has been awarded a major contract for the provision of services worth 1.1 million euros as part of the construction of the Sintra's proximity hospital.

Sintra's proximity hospital

Portugal

It concerns the verification and review of execution studies as well as the monitoring and coordination of works.

This project, launched by the Municipality of Sintra, in collaboration with the Portuguese Ministry of Health, aims to strengthen the supply of first aid and local care in the Lisbon and Tagus Valley regions.

Concretely, the new hospital infrastructure will have a capacity of 60 beds (potentially expandable), it will house an emergency department, an outpatient department as well as an ambulatory surgery unit and will be equipped with the most efficient equipment both in the diagnostic and therapeutic field.
No less than 50 million euros will be invested in the construction of this new hospital, including access infrastructure, exterior fittings and car parks.

In the Lisbon region, the extension and modernization of the CUF hospital in Torres Vedras was completed in December, while that of the CUF hospital in Sintra should be completed in early 2020.

The partially modernized Torres Vedras hospital centre now has an additional 3,100 m² of space.

CUF Hospital in Sintra

CUF Hospital in Torres Vedras

The works at the Sintra hospital centre will soon be completed, they relate to the construction of a new 3-storey building (11,640 m²) and the modernisation of the existing 2-storey building (3,450 m²).

It was José de Mello Saude, one of the major players in the private hospital sector in Portugal, who entrusted us with the management and supervision of construction works, assistance to project management in the preliminary phase, the drafting of the tender documents for contractor selection, the drafting of the contractors shortlist file as well as the evaluation of the tenders.

In the field of hotel real estate, TPF is participating in two ambitious urban renewal projects in Lisbon: the demolition and transformation of a building into a 14-storey hotel, 10 of which are above ground (5,028 m²) on avenue Duque d'Ávila and the transformation of a building, with the façade maintained, into a luxury hotel with 11 floors including 9 above ground (6,000 m²) on Avenue Defensores de Chaves.

The hotel on Avenue Defensores de Chaves houses 130 rooms since summer 2019, as well as a bar and a restaurant. Mission accomplished for TPF which was in charge of management and supervision of works.

As for the hotel on avenue Duque d'Ávila, it will be ready by the end of 2020.

In terms of housing, OneLiving Cascais and Parque Oriente are our flagship projects of 2019.

OneLiving Cascais is a luxury residential real estate project developed by the Portuguese company Teixeira Duarte. It includes two residential lots with a floor area of 13,000 m² and 7,000 m² as well as 10,000 m² of outdoor spaces for leisure activities. In addition to the review of the execution studies, TPF is responsible for supervising the works whose duration was set at 28 months.

Parque Oriente is located in Lisbon. It is a mixed real estate complex with a floor area of approximately 43,578 m² comprising 13 lots intended for housing, commerce and services, supplemented by an underground parking lot of 28,502 m². Our design office is currently carrying out studies in BIM.

In the Algarve region, one of the most popular tourist destinations in Portugal, TPF continues to be involved in the realisation of the Vilamoura Lakes tourism development project.

Vilamoura Lakes has a construction potential of 300,000 m², residential units for 8,500 inhabitants and 22 hectares of lakes dedicated to sports and tourist activities. The figures speak volumes about the importance of this vast complex developed by the property development company Vilamoura World on an area of 168 ha.
Our mission is to carry out studies related to lakes, technical infrastructure and landscaping.

← Hotel project on avenue Defensores de Chaves, Lisbon

→ Hotel project on avenue Duque d'Ávila, Lisbon

Portugal

Parque Oriente Housing Project

OneLiving Cascais Housing Project

Vilamoura Lakes tourism development

Comporta Dunes tourist complex, Alcácer do Sal

In addition to its work in the networks, basic infrastructure and collective facilities of the 10,000 m² Fornos Meco tourist complex in Sesimbra, TPF is also involved in the construction projects of the Comporta Links and Comporta Dunes tourist complexes, currently both largest real estate and tourism projects in the country.

The complex will be developed on 916 hectares of urbanisable land, including 365 hectares for the Comporta Links project in Grândola and 551 hectares for the Comporta Dunes project in Alcácer do Sal.

TPF has been appointed to review the execution studies and the urban planning permit providing for all necessary infrastructure (roads and water, drainage, electricity and gas distribution networks, wastewater treatment plants and outdoor facilities).

Finally, in the industrial sector, TPF is taking part in a construction project for the new production unit of the pharmaceutical group Hovion in Seixal.

The project is located in the economic activity zone PIS III (Parque Industrial do Seixal) - Cucena, on a plot of 587,500 m². Its implementation requires urbanisation works and the study of different infrastructures. This is the main reason for which we were appointed.

Particular emphasis was placed on energy efficiency and the exploitation of natural resources. Finally, note that this project is carried out with a BIM method.

Environment - Water

In the Lisbon region, TPF won the international call for tenders launched by the company Águas do Tejo Atlântico for the project to eliminate wastewater discharge in the southern area of the "Tejo Atlântico" (Alto Tagus).

The challenge is both to ensure the ecological rehabilitation of the Tagus and to improve the quality of bathing water.
The studies entrusted to us relate to the elimination of wastewater discharge, both industrial and domestic. They relate to the cities located on the riverside, namely Cascais, Sintra, Oerias, Amadora, Mafra, Lisbon, Loures, Odivelas, Vila Franca de Xira, Arruda dos Vinhos and Sobral de Monte Agraço.

Meanwhile, the huge multi-purpose Alqueva project on which we have the pleasure of working is still in progress.

Let us mention that it was the Alqueva infrastructure development company (in Portuguese, Empresa de Desenvolvimento e Infraestruturas do Alqueva - EDIA) that entrusted us with the management and supervision of the works to connect the water supply system of Morgavél, and improvement of the irrigation infrastructure of the Cuba-Odivelas Block, including health and safety coordination, topographic assistance, environmental monitoring and the review of as-built plans for the structures concerned.

Cuba-Odivelas irrigation block

The construction works of the Morgavél water supply system include the installation of the connecting pipe between the Roxo-Sado water supply system and the balance chimney of the Morgavél system as well as the installation of the connecting pipe between the Morgável canal and the Fonte Serne reservoir.

With regards to the Cuba-Odivelas irrigation block, the aim is to improve the infrastructure of an area of 2,790 ha, located on the right bank of the Alvito-Pisão canal. Fourteen months are planned to accomplish the mission.

Environment - Energy

In line with 2018, we continued our participation in the most important water project in Europe for the past 25 years, namely the construction of the Alto Tâmega hydroelectric complex. This large-scale project, representing an investment of 1.2 billion euros, will increase energy storage capacity in the European Union.

Note that the Spanish energy group Iberdrola is responsible for the construction and operation of this large complex. Its installed capacity will be 1,200 MW for an annual production of 1,800 GWh.

Our mission is articulated around several axes: execution studies of accesses and roads, elaboration of permit files, preparation of tender documents and public procurement file, and technical assistance to construction works.

But that is not all. In parallel, we must ensure the review of the internal emergency plan of the dams of Daivões and Alto do Tâmega and the simplified emergency plan of Gouvães

Portugal

without forgetting the execution study for the energy production system building of Tâmega, located in the Gouvães power plant.

Note that in 2019, we focused on the execution study of the Gouvães dam.

In Madeira, TPF is interested in the extension of the Calheta hydroelectric development operated by the public electricity company Empresa de Electricidade da Madira, S.A. (EMM). In particular, it plans to triple its hydroelectric production capacity from 12 to 38.3 MW.

This investment of around 63 million euros is part of Madeira's energy policy aimed at reducing the country's energy dependence and lowering the consumption of fossil fuels in order to preserve the planet.

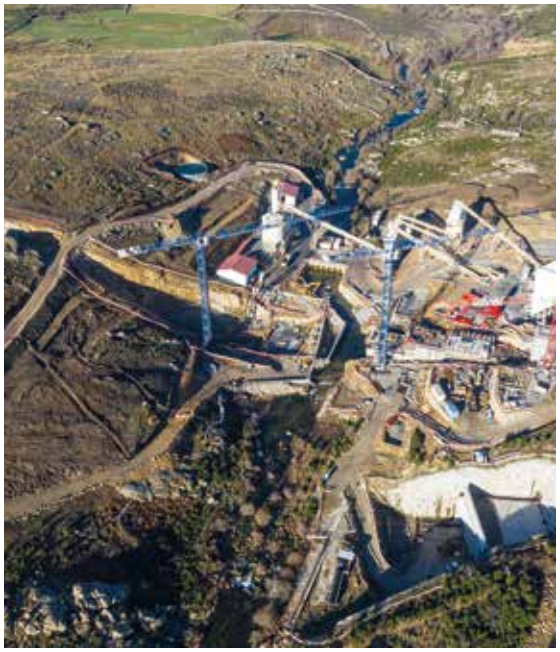
Among the tasks incumbent on us, we will retain technical assistance relating to construction work and geological and geotechnical studies, extension work having to take into account the specific constraints of the site.

In addition, environmental studies of the Coruche and Benavente photovoltaic solar power plants in the Lisbon and Tagus Valley region, the Elvas, Viana do Alentejo, Borba, Moura, Serpa, Tapada, Alpalhão, Fortios and Arronches plants in the Alentejo region and finally the Alcans plants in the North region are still in progress.

In addition to ensuring environmental monitoring (avifauna, flora and chiroptera) of the effects related to the additional equipment projects of several wind farms and the strengthening of their power, we continue to provide environmental monitoring for the installation works of the additional equipment of the park Arada-Montemuro wind farm (2nd phase).

Finally, let's finish our overview with the program to renovate the Portuguese electricity network.

During the year, we supervised the renovation works of several substations and electric power transmission lines throughout the territory (lot 3). The main substations include Vila Fria - 2 PN 150 kV, Vermoim (SVM) - PL 220kV Sakthi, Falagueira (SFR) - PN 400 KV, Vila Chã (SVC), Lavos (SLV) - PL 60 kV, Ourique (SOQ) - PL150 kV, Estói (SET) and Alto Mira (SAM). The contract we signed with the manager of the Portuguese electricity network REN (Rede Eléctrica Nacional) should be honoured in 2020. •



← Alto Tâmega hydroelectric complex, Gouvães

→ Extension of the Calheta hydroelectric plant

Romania

Structures and road infrastructures

If there was only one highlight in this sector this year, it would be the feasibility study for the construction of the Reghin City Bypass.

This contract with the National Company of Road Infrastructure Administration, Brasov Directorate for Roads & Bridges runs on a period of 23 months and aims to complete the feasibility study performed in 2004 according to updated norms and regulations and legislation in force. The specific objectives of the project are to improve traffic conditions at national road level, including road safety, reducing polluting emissions, reducing operating costs, etc.

In addition to the construction of 10.44 km of roads (two lanes of 3.50 m width and shoulders of 1.50 m width) and numerous engineering structures (bridges/overpasses, minor bridges and retaining walls works), this project also involves consolidation, earthworks and hydrotechnical works as well as the implementation of an operation and maintenance plan.

Multimodal transport

The development of multimodal transport, both for passengers and for freight, remains one of the priorities of the European Union, which plans to acquire a perfectly integrated Trans-European Transport Network (TEN-T) based on the interconnection of different modes of transportation.

TPF is particularly proud to have won the feasibility study for the BIMH-Bucharest-Ilfov Multimodal Hub this year.

The project purpose is the construction of a multimodal transport hub in the Bucharest-Ilfov Development Region that will connect Airport Henri Coanda, railway Brasov-Bucharest-Slobozia-Constanta, motorways, Rail Cargo Terminal.

This project is one of the TEN-T priority projects and includes the construction of the intermodal terminal and related infrastructure, the implementation of a system of tracking, planning and management of intermodal freight transport (using the smart transport systems available on the market) and the rehabilitation and modernization of the existing transport infrastructure near the terminal. Besides the geotechnical, geomorphological, hydraulic, seismology, archaeological and aeronautical studies, it is also our responsibility to carry out the environmental impact assessment study, the traffic demand study and the permits and approvals.

Maritime and port infrastructures

The coming years promise to be particularly busy in terms of construction sites on the shores of the Black Sea and the Danube, with three new supervision contracts that we won in 2019.

Building on its success in the region, TPF signed a new contract with the National Company - Maritime Danube Ports Administration from Galati for the supervision of works for the execution of the quay within the Project "Galati Multimodal Platforms - Stage I – Upgrading of the waterside infrastructure".

The scope of this contract is to promote the use of inland waterway and maritime transport on the Rhine-Danube Corridor, by upgrading the basic port infrastructure and supporting transhipment operations in the Port of Galati.

These objectives will be achieved through:

- Upgrading the existing quay;
- Partial filling of port basin in order to ensure additional space for mooring and load handling;
- Levelling of platform height;
- Dredging works.

This year, the Galati Lower Danube River Administration, A.A. also entrusted us with the technical assistance and supervision of works for the Project" River Banks Protection on Sulina Channel - Final Stage".

This project is part of the integrated strategy for the sustainable development of the Danube Delta. This work is necessary to ensure safe navigation regardless of the water level and to combat erosion and the instability of the banks.
We have been given no less than 99 months to complete our mission.

Finally, in Constanta, the biggest challenge that awaits us over the next four years will be to supervise the works for the Project "Modernization of Port Infrastructure by increasing the depth of the sailing line and of the basins and ensuring safe navigation in Constanta Port"

TPF will provide consultancy services and supervision of dredging works on behalf of the National Company "Maritime Port Administration Constanta". The objectives of the program are numerous: reduce freight transport costs by ensuring access to high capacity ships, increase operation safety within the port area, encourage the use of water transportation and increase the attractiveness of Constanta Port. •

Port of Constanta

Spain

Public transport infrastructure: Metro, tram, bus rapid transit system

This year, TPF has been awarded a contract for the supervision of the works including a new project that will be undertaken by Metro de Barcelona. The scheme involves upgrading a stretch of the L1 of Barcelona Metro which has been operating for more than 50 years and comprises 9 stations.

The project has a budget of 20 million euros and will extend over a period of two months. Improvement works will cover the stretch from the Clot station to the Fondo station. TPF will supervise 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.

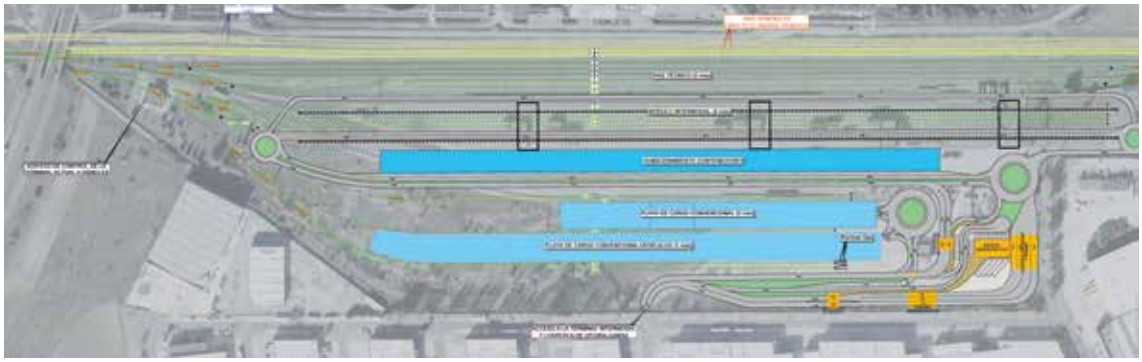
Double tracking of the La Carrera to Pola de Siero Railway Section

Structures and railway infrastructures

Rail transport in the Iberian Peninsula is clearly on the rise, judging by the number of projects currently underway. The Group feels particularly happy to be able to contribute to the development of the rail network of tomorrow.

TPF carries 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 functional design for the implementation of a new rolling highway terminal.

In February, TPF signed a contract to provide consulting services related to the Vitoria-Gasteiz Júndiz multimodal logistics centre project. The services comprise the detailed design for the works to undertake during Phase I and the functional design for future actions.
Since its commissioning in 1994, the Júndiz Logistics Centre has been used for managing rail-freight traffic operations, clearly linked to the business activity in the surrounding area, covering mainly the transportation of intermodal (containers) 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 Networks TEN-T), which arrives in Vitoria-Gasteiz 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.



Vitoria-Gasteiz Júndiz multimodal logistics platform

Spain

The design includes the works required to provide a standard-gauge rail link to the Vitoria-Gasteiz Júndiz terminal and upgrade it to handle 730m trains. We will also perform the functional design for the staged development of the multimodal centre, according to current forecasts of rail-freight traffic growth, including a functional analysis for the implementation of a new rolling highway terminal. In this way, the Júndiz centre will become the first terminal in Spain to connect to the Atlantic corridor using standard-gauge rail.

Also for ADIF, TPF has launched another equally exciting challenge: the analysis of rail freight corridors of the general interest network.

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

The rail network will be divided into three parts, i.e. the Mediterranean, Atlantic and Cantabrian-Mediterranean sectors.

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.

TPF is also supervising the construction of a single-track high-speed rail line section, 25.5 km in length.

The purpose of the project, as part of the High-Speed Rail Corridor scheme that links Murcia to Almeria, is to build a single-track high-speed rail line section, 25.5 km in length. The line has been designed for both passenger and freight transport. It will carry passenger trains at speeds ranging from 250 to 280 km/h, while the speed for freight trains has been set at 100 km/h.

The line section runs through the municipal districts of Níjar and Almería.
The main works that are included in the project are as follows:
- Earthworks: demolitions, cuts, embankment fills, track formation and sub-ballast.
- Construction of longitudinal and cross drainage structures for the formation.
- Relocation of the utilities (power supply, telephone, water supply, sewerage) and roads affected by the works.
- Construction of 16 viaducts, 4 overpasses, 9 underpasses, 1 retention wall and 1 tunnel, 878 m in length, using the Belgian method.

Another project close to our heart is the Double tracking of the La Carrera to Pola de Siero Railway Section. This operation is particularly complex given the proximity of the Nora river and the constraints linked to the presence of several engineering structures (overpasses as well as ramps and steps that provide access to the underpass at the La Carrera halt).

In February, TPF entered into a contract to prepare the detailed design of a project which involves doubling the track between La Carrera and Pola de Siero, on the Oviedo –Santander rail line. Moreover, the assignment includes track superstructure and electrification design work along the section, and is expected to be completed within a 12 months period.

The scope of this upgrade project is to increase capacity on Oviedo –Santander rail line from the halt at La Carrera to the Pola de Siero station. Currently, this line coexists with the C-6f Oviedo-Infiesto rail section of the Asturias suburban network and the R-2 Oviedo-Santander regional service for passenger-and-freight transport.

The route is double track from Oviedo to the La Carrera Halt, where it becomes single track. The project therefore requires doubling the narrow –gauge track section from the La Carrera halt to the Siero station.

The scope of the project also covers superstructure and electrification work along the stretch, as well as the works required on the stations. It should be noted that in 2017 ADIF conducted a study to provide access between platforms at the Siero station. The design of the track doubling works will be coordinated with the Pola de Siero station project.

In Valencia, TPF is working on the modernization of the Silla-Cullera section of the line connecting Gandía to Silla, a route primarily used for passenger and occasionally freight transport.

The line consists of two clearly distinct sections. The initial stretch between Silla and Cullera is double track and has a length of around 25 km. Beyond the Cullera station, the line narrows and remains single track from Cullera to Gandía, along a length of 26 km. This section comprises three stations (Sollana, Sueca and Cullera) and the El Romani halt.

The project involves undertaking track rehabilitation works. The condition of turnouts, rails, sleepers, as well as ballast and ancillary track components, will therefore be evaluated, so as to propose renewals, where necessary.

Assessment of the condition of drainage structures (ditches and cross drainage works), bridges, stations, level crossings, etc. will also be performed, and appropriate measures will be proposed.

The assignment also consists of the renewal of the existing overhead line equipment and installation of a mixed 160 (3kV) AC catenary. In addition, the design will include upgrades to the substations located in Cullera and Xeraco.

TPF was also awarded a contract to provide technical supervision services during the upgrading of a 17-km single-track section of the Mérida - Los Rosales railway line.

This project is part of Phase II of the track rehabilitation scheme undertaken by ADIF between the halt at Usagre/Bienvenida and the Llerena station, in Badajoz. The work involves renewing the track superstructure along this section and at the Llerena station, as well as upgrading and rehabilitating fourteen level crossings. Reliability, safety and service quality, as well as operation on the line, will thus be improved; while reducing the number of incidents and maintenance operations.

Renewals between Usagre and Llerena will be carried out progressively, section by section, without disrupting railway traffic. Improvement works are particularly important at the Llerena station, where tracks 1, 2 and 3 will be renewed, and 6 C-type turnouts will be installed on these tracks. Moreover, rehabilitation of tracks 4 and 5 is part of the scheme.

While modernizing its rail network, ADIF intends to do everything in its power to minimize the noise pollution caused by its infrastructure.

ADIF awarded TPF a contract to prepare the detailed design of noise barriers pertaining to noise abatement plans for Zone No. 2: Basque Country, Asturias, Aragón and Castile-León, and for Zone No. 5: the narrow-gauge railway network in Asturias and Cantabria.

Modernization of the Silla-Cullera section of the line connecting Gandía to Silla

Noise abatement plan

According to the current regulatory framework, these action plans cover an analysis of over 300 km of railway lines,and envisage implementation of corrective measures in order to reduce noise levels in the vicinity of key standard-gauge and narrow-gauge railway networks.

The study area includes standard-gauge rail sections where acoustic quality objectives are not being met and require noise impact correction measures. The assessment work will focus on the zones considered to be high priority areas for action, according to the programmes developed to reduce noise transmission using barriers. The study will also comprise zones where neighbouring residents have reported noise nuisance or where comments have been received regarding the public consultation carried out on the noise abatement plans for Phase II.

After identifying conflict areas and the measures proposed in the Plan, a detailed design will be conducted of noise barriers, specifying exact barrier location and acoustic reduction effectiveness, as well as all the work required to ensure proper execution and compatibility with normal railway line operation.

According to these action plans, 25 different priority zones have been taken into account for the design of the installation of 88 noise barriers of different sizes at several locations, along a total length of over 13 km.

In Cantabria, TPF is taking part in the project to bury a section of railway line in Torrelavega.

The project involves taking underground a narrow-gauge railway line designed for passenger and freight traffic, on a 2-km long section that runs through the city of Torrelavega. This urban stretch of the line comprises a 625-m long underground structure, with a maximum cross-section of 23.50 m and a maximum depth of 7.5 m below the natural ground level, and over 595 m of diaphragm walls up to 23 m deep. The project includes the civil works required for the construction of an underground station which features two platforms 300 m and 110 m in length. It also provides for removal of two- level crossings in an urban environment. In addition, electrification of all the tracks will be undertaken, as well as construction of depots and maintenance workshops for track and infrastructure and an administrative building.

Maritime and port infrastructures

During the month of October, TPF won a contract with the Vigo Port Authority to carry out a detailed design for expansion of the "Muelle de Comercio" quay by establishing a new port area west of the Muelle Transvesal quay.

The designed solution will ensure compatibility with other potential future port development works under different scenarios.

This assignment is scheduled to cover a period of 15 months and will envisage suitable alternatives for the expansion works, while taking into account potential environmental impacts, as well as energy-efficiency improvement and carbon dioxide emission reduction.

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 addition, our Spanish team was selected by the Port Authority of Valencia to carry out the detailed preliminary draft of the renovation and extension of the South Quay of the Turia dock, at the Port of Valencia.

The quay was built in the 70s and features piled foundations. It is 549m in length, 24m in width and has a draft of 14m. After 44 years of service life, it is necessary to build a new quay structure that will offer adequate levels of service and safety in the coming decades.

The purpose of the project is to renovate and extend the South Quay along a total length of about 540 meters. The main works to carry out cover: renovation of about 400 m of the existing South Quay, 140-m extension of the South Quay to the east, backfilling and paving the quay extension.

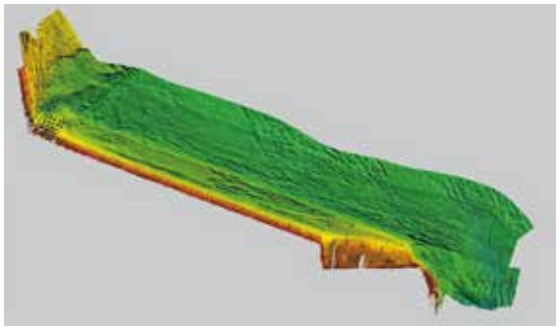
The City of Arts and Sciences (Cacsa) has awarded TPF a contract to provide detailed architectural / engineering design, as well as construction supervision services for renovation works at the Aquarium of the Oceanographic Museum in the City of Arts and Sciences of Valencia. This is a major success since it concerns the largest oceanographic museum in all of Europe.

In particular, the project involves rehabilitating the damaged civil works components of the aquarium and outdoor swimming pools.

The assignment also includes an inspection audit by means of underwater work in order to assess the condition of all the aquariums and elements within the scope of the contract.

The civil works components of the aquariums are to renovate the artificial rock decorations, marine flora scenery, paintings and substrate on the aquarium bottom, acrylics, as well as bottom slabs and joints.

"Muelle de Comercio" quay, Port of Vigo



← Bathymetry – Port of Valencia
→ Aquarium of the Oceanographic Museum of the City of Arts and Sciences, Valencia

Building sector - Urban planning

In the building sector, several particularly interesting projects can be highlighted over the past twelve months. Among these, we will note, in Madrid, the interior renovation of the Biomedical Research Institute of La Paz University Hospital (IdiPAZ), with a floor area of 1,500 m². TPF is in charge of architectural design, structures and MEP systems.

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 the logistics activity area of the port of Barcelona (ZAL Port), TPF is responsible for the design of a warehouse for the storage and distribution of cold and frozen food products, including the central offices of Caprabo in Barcelona.

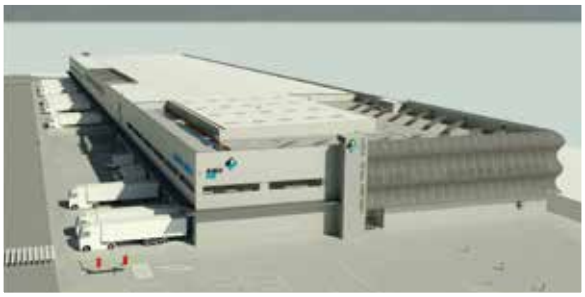
The warehouse is intended for e-commerce and reverse logistics. The building has a surface area of approximately 24,500 m² and it is located in the intermodal logistics platform of the Port of Barcelona.

TPF has won a contract to carry out the detailed design of the New Immigration Detention Centre of Algeciras.

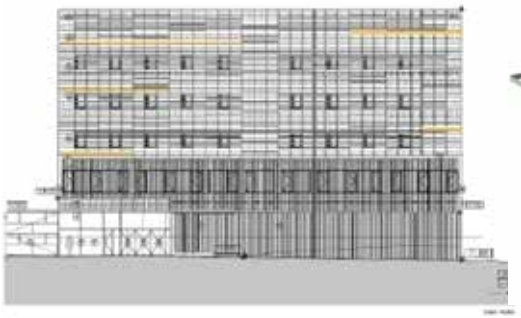
Maximum duration of detention is 60 days, but the average length of time spent there is 27 days. It should be noted that, although internment periods are not long. The new Immigration Detention Centre project is in compliance with European and Spanish legal requirements in terms of respect for dignity and human rights. This new facility is a new type of infrastructure appropriate to its intended use. It will have capacity for 500 detainees.

In Tarragona, a new prison will be created. TPF's role in the project includes quality control of materials as well as control of the MEP systems during both project phases.

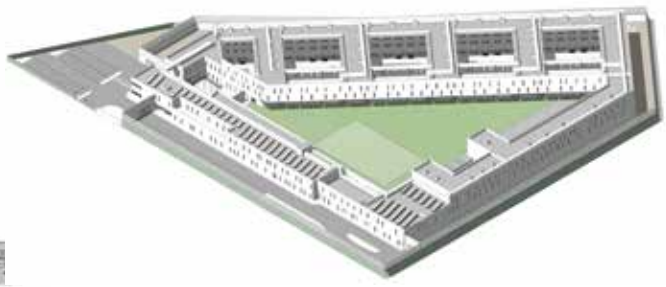
The new prison is expected to complement the main correctional centres located in Tarragona. The new facilities will replace the old prison, which will close upon the new one's opening. The scope of Phase 1 encompasses earthworks and structures, whereas Phase 2 will be accomplished upon completion of building construction works, interior finishing work and installation of MEP systems. The construction period is scheduled to extend over one year.



Warehouse for the storage and distribution of cold and frozen food products of Caprabo, Barcelona



← New prison in Tarragona



→ Immigration Detention Centre, Algeciras

Environment - Water

This year, TPF completed the work on the project to upgrade the WWTP that serves the Universidad Autónoma de Madrid.

It should be noted that this plant treats the wastewater generated by the entire staff and student population at the University, and that, prior to the renovation works, penalties had been imposed by the Tagus River Basin Authority on account of the discharge of poor-quality sewage effluent.

Our team of water engineering experts provided technical support during all the phases of the project, from the feasibility study stage through to the commissioning stage. Tasks performed on this contract included: preliminary assessment of the facilities, development of alternatives, analysis of the preferred alternative, detailed design of the project, provision of support during the bidding process, construction management and on-site Health & Safety coordination and commissioning.

Core to this assignment was the aim to take advantage, to the extent possible, of the existing plant by carrying out partial upgrades, and to connect it with the new planned elements in order to deliver a more efficient facility.

The designed process is based on an extended-aeration activated-sludge system. The improvements required basically involved the upgrading of the existing facilities by transforming them into anoxic and anaerobic areas and the construction of another secondary sedimentation tank. Moreover, it was necessary to include new buildings as well as improvements to the treatment equipment according to the new arrangement. Provision was also made for an access road and new external works.

At the same time, TPF has been commissioned by the Guadalquivir River Basin Authority to process draft Technical Reports on the authorisations 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 contract is worth one million euros and will run over a period of eighteen months. 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, where our team will carry out the following tasks:

- preparation of reports on authorisations covering the "hydraulic public domain",
- preparation of reports on authorisations covering riverside strips of land,
- preparation of draft reports dealing with sectoral issues,
- preparation of draft documents dealing with registration procedures,
- preparation of draft documents dealing with property - liability claims,
- preparation of flood-risk assessment reports,
- collection of background information for authorisation procedures,
- preparation of reports on infrastructure projects that may have impacts on inland water. •

Wastewater treatment plant serving the Autonomous University of Madrid (UAM)

Ukraine

Building sector - Urban planning

In Lviv, we are involved in the construction project of the Medicover medical centre (with Maternity section).

The 6,850 m² complex consists of three buildings: administrative and consultation services, hospitalization service, operating theatres and resuscitation. TPF carried out the design and finalized the permit files.

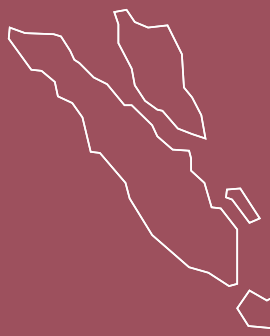
In the Ivano-Frankivsk Oblast region and more specifically in Kolomyia, TPF is participating in the construction of the production unit of the cable manufacturer LEONI (phase III).

This project developed in BIM includes several areas including a production area of 12,700 m², an administrative area of 920 m² and a refectory of 670 m² + terrace. TPF was responsible for carrying out the design and execution plans in collaboration with Delta Ukraine, the general designer of the project. •

Medicover Medical Centre, Lviv

Production unit of cable manufacturer LEONI

Oceania



1. Australia

1.

Australia

Structures and road infrastructures

TPF is involved in the largest road infrastructure project in Australia: WestConnex, a 33 km long highway which is mainly underground.

Once completed, it will significantly reduce travel times for residents of the Sydney metropolitan area and develop the economy in the region.

TPF was awarded by the John Holland - CPB consortium the design review of all the electromechanical systems of the WestConnex 3B (WCX3B) Rozelle Interchange.

WestConnex is part of an integrated transport plan for Sydney. Most of WestConnex will be in underground motorway tunnels, to minimise the need for land acquisition and remove traffic from local streets.

The Rozelle Interchange is part of the M4-M5 Link and will provide a new underground motorway interchange to City West Link and an underground bypass of Victoria Road between Iron Cove Bridge and Anzac Bridge, with links to the future Western Harbour Tunnel.

The interchange in Rozelle will be mostly underground and located at the site of the old Rozelle Rail Yards. The project will deliver new active transport options in Rozelle and up to 10 hectares of new open space. •

EXPERTISE CENTRES

Building
Transport infrastructures
Environment

Building

Today more than ever, the group continues to confirm its position as a leading player and partner in the world of construction.

Whether they concern new constructions or renovations, sustainable and smart constructions, the challenges facing the building sector are increasingly numerous and diverse. Our employees in the Building center of expertise have clearly understood this challenge.

TPF is a forefront player in its field and is convinced of the need to act in the face of sustainable development challenges. Our proactive approach is essential in advancing projects in which we participate in the face of tomorrow's challenges:

- Energy challenges thanks to the realization of low consumption, even passive buildings.

- Low carbon challenges by favoring the development of bio-based materials: wooden frames, raw earth walls, hemp insulation, green roofs and urban gardens.

- Health challenges by taking into account the effects of the Covid-19 crisis: reflections on the air treatment of buildings, optimization of filtration systems, taking into account the flow of people from the design phase.

As a result, the group builds both more efficiently and more reasonably thanks to the use of BIM (Building Information Modeling), which is now part of its daily life just like all digital tools: collaborative platforms, dematerialization of files, work monitoring on digital tablet, etc.

During this year, the group was also able to bring its expertise by participating in the design and realization of many construction projects located in our country and in an increasing number of locations around the world.

We can first mention HEALTHCARE REAL ESTATE, which has long been one of the major sectors of our activity and which the Covid-19 health crisis will profoundly change. This is evidenced by the renovation or construction of new hospitals, the development of local health establishments, and the need to adapt to the constraints of outdated facilities for the elderly.

In **BELGIUM**, construction work for the **new Jules Bordet Institute** has progressed well. With a capacity of 250 beds and 40 places for day hospitalization, this **new center is a European reference in the fight against cancer**, located near the Erasme hospital in Anderlecht on a total surface of 80,000 m². It includes integrated cancer research laboratories, radiotherapy bunkers and 8 operating theaters. TPF is providing a mission in stability and technical building services.

Among highlights of the year in Belgium, we will also note the inauguration of **Résidence Vallée du Hoyoux**. This new structure in the Huy hospital center includes a 64-bed rest home, a 46-bed rest and care home and 4 short-stay beds, a day center that can accommodate around fifteen people, as well as a service residence of 31 apartments with access to the services of the rest home. TPF is mainly interested in the technical building services section.

In **FRANCE**, TPF won the competition for the construction of the **New Trousseau Hospital in the Tours University Hospital** at the beginning of the year. This flagship project led by AIA Life Designers is part of the vast real estate restructuring plan which by 2024 will bring together the activities of the University Hospital - currently spread over five sites - on the two sites of Bretonneau and Trousseau. The complex includes a building with an area of 70,000 m² and a capacity of 576 beds and spaces supplemented by technical and surgical activities (firm tranche) + 400 parking spaces, a biology building of 12,300 m² (optional tranche 1) and a pediatric building with 138 beds of 16,500 m² (optional tranche 2). Work will start in 2021 for delivery in 2024.

We will also mention the services entrusted to us for several design-build contracts, including the construction of an 85-bed **adult psychiatric care building** for the **Bon Sauveur d'Alby Foundation** alongside GCC (agent) and EMaa or the reconstruction on site of a 105-bed **nursing home** for the **Sainte-Foy-lès-Lyon Hospital Center** with BLB Constructions (agent) and CBXS architects & urban planners.

New Trousseau Hospital, Tours / France

CUF Sintra / Portugal

Marie Curie Children's Hospital in Bucharest / Romania

Gaziantep Integrated Health Campus / Turkey

La Serena Hospital, Coquimbo / Chile

In **PORTUGAL**, the group was awarded a major service contract worth 1.1 million euros in the context of the construction of the **new Sintra's proximity hospital**. The objective: to strengthen the supply of primary and local healthcare in the Lisbon and Tagus Valley regions. This new hospital infrastructure will initially have a capacity of 60 beds (potentially expandable).

At the **CUF hospital in Torres Vedras**, modernization and extension works (addition of 3,100 m²) were completed in December while those at **the CUF hospital in Sintra** (new 3-storey building of 11,640 m² and modernization of the existing 2-storey building of 3,450 m²) are expected to be completed at the beginning of 2020. We are supervising those works for the company José de Mello Saude, one of the major players in the private hospital sector in Portugal.

In **ROMANIA**, TPF is responsible for project management in the construction of the Marie Curie Hospital, the first Oncology and Radiotherapy Emergency Hospital for Children in Bucharest. The works have reached a progress rate of around 60%. The hospital, with a capacity of 200 beds, will notably welcome medical imaging services (radiotherapy, MRI, scanner), oncology, hematology-oncology, surgery, neurosurgery and intensive care. It will consist of two six-storey buildings (12,000 m²). Its investment amounts to some 16 million euros.

In Lviv, **UKRAINE**, we are involved in the construction project of **the Medicover medical center** (with Maternity section). The whole of 6,850 m² is made up of three buildings: administrative services and consultations, hospitalizations, operating theaters and resuscitation. TPF carried out the design and finalized the permit files.

In **AFRICA** and more specifically in **ANGOLA**, TPF recently won the supervision of construction works for the **Pedro Maria Tonha "Pedalé" hospital** (formerly known as the Hospital of the President's Security House) in the Morro Bento district of Luanda. The main building rises over 3 floors and will notably house the rooms, the outpatient rooms and the operating theaters. It represents a construction area of 29,062 m², including outdoor technical areas.

In **TURKEY**, we can mention our participation in the PPP project of the **Gaziantep Integrated Health Campus**: 551,914 m² of construction space, a capacity of 1,875 beds, a heliport and a parking in closed boxes for 5,852 vehicles, which demonstrates the scope of the project. Our present task is to control and supervise the works.

Building

Finally, in **LATIN AMERICA** and more specifically in **CHILE**, TPF is acting in consortium with RyC Ingenieria and won this year the detailed preliminary design of the new **La Serena hospital** in Coquimbo. With a capacity of 600 beds, this new hospital complex will cover an area of approximately 100,000 m² and will include an oncology center.

In the areas of EDUCATION, TRAINING and RESEARCH, TPF is notorious for its presence in large-scale projects.

In **BELGIUM** for example, TPF focused this year on the renovation and extension of **the EDUCAM training center** in Lokeren. This center for companies in the automotive and related sectors has reached its final phase. TPF carried out studies in stability and technical building services as well as monitoring architectural work on site.

In **SPAIN**, TPF is working on the interior renovation project of the **Biomedical Research Institute of La Paz University Hospital (IdiPAZ)**, with a floor area of 1,500 m². Its ambition: to encourage research of the highest quality and to ensure the link between pure research, clinical research, epidemiological research and health care. The building will house training and simulation rooms intended for doctors and researchers, an operating room, an intensive care unit, a hospital room as well as a multi-purpose room with complete equipment, in particular for carrying out laparoscopies.

In **FRANCE**, we notably won with VIB Architecture the competition launched by Epaurif for the construction of **the MathSTIC** (Mathematics and IT) building at the University of Paris 13 and the creation of the new entrance to the **Villetaneuse Campus**. The project notably includes bio-based, recycled and low-carbon solutions.

In Rosières-Près-Troyes, construction work on the **antenna of the Special School of Public Works, Building and Industry (ESTP)** designed by Jean-Pierre LOTT and technically designed by TPF has started. With a usable area of 3,200 m², the building will house classrooms, amphitheatres, research laboratories as well as administrative and social premises. It will welcome around 350 engineering students by 2021.

The same goes for the construction of the **Sébastopol Digital Campus** in Toulouse where the works could be launched at the end of 2019. Supported by the SCCVB CARETO (Icade Promotion / Y-NOV) and designed by TPF alongside KARDHAM and Atemps Architecture Munvez Serra, the campus is structured around 3 buildings: a digital school (3,700 m² of floor space), a coworking building (3,500 m² of floor area) and a hotel and student residence with 354 rooms (10,000 m² of floor area).

In 2019, TPF also managed to finalize all-trade studies for the construction of the **Lesaffre International Campus** in the municipalities of Marcq-en-Baroeul and Marquette-lez-Lille. This ambitious 25,000 m² project including 10,900 m² of offices, 12,200 m² of laboratories (generic L2 containment laboratory areas and 3 ISO 5 clean rooms), and two process pilot buildings is dedicated to research and development exploring the potential of fermentation. Works will start in early 2020 with delivery expected in late 2021. As part of this project designed by TANK Architects, TPF applied a Passivhaus energy approach to the tertiary area and produced a level 2 BIM model.

In **MOROCCO**, TPF embarked on a new adventure this year by winning the study and monitoring of the construction works of **six vocational training centers**: the Development Institute for Handicrafts in Fez (CFP02), the Institute for Traditional Arts in Meknes - IAT (CFP03), the Institute for Port Trades, Logistics and Industry in Tangier (CFP04), Institute for Training in Health and Social Action Professions - IFMSAS in Meknes (CFP36), the Institute of Hotel and Tourism Technology in Tangier - ITHT (CFP71) and the Regional Training Center in Breeding of Small Ruminants in Ouezzane (CFP79). These are among the 15 projects of vocational training establishments funded by the American foreign aid agency "Millennium Challenge Corporation" (MCC) through the "Charaka" Fund and managed through public-private partnerships.

Let us finish with **ECUADOR** where our teams are supervising the construction of **the Millennium Educational Unit Valencia 1** (Vicente Rocafuerte), in the municipality of Valencia, and of the **Nueva Mocache Educational Unit**, in the municipality of Mocache. We should also mention the **six new Higher Education Units**, each of 28,000 m² which will be built under our **supervision within the framework of the Higher Education Reform Scheme promoted by the Ministry of Education and financed by the World Bank.**

Other major areas made the news this year such as CULTURE, SPORTS, LEISURE and TOURISM. This year was once again marked by many projects and successes.

In **ALGERIA**, we are currently preparing the technical

EDUCAM training center, Lokeren / Belgium

ESTP, Rosières-Près-Troyes / France

Lesaffre, Marcq-en-Baroeul and Marquette-lez-Lille Campus / France

Regional training center of Ouezzane / Morocco

Hôtel Amraoua, Tizi-Ouzou / Algeria

documentation relating to **the 18,000 m² hotel project in Boumerdès**. The 4* hotel will have a capacity of 240 rooms. And in Tizi-Ouzou, we are now overseeing the renovation and construction of the **Amraoua hotel**.

In **BELGIUM**, construction of the new Brussels hotel of the Swedish hotel group PANDOX is progressing well. The Spanish group NH Group is a tenant there and will open **NHOW BRUSSELS** in autumn 2021, in place of the old Hyatt Regency hotel. The hotel was completely redesigned and renovated according to the "Spend your night in an art gallery" concept, which will offer 305 rooms and public spaces (restaurant, reception and corridors) on nearly 22,000 m². Let us mention for this project, TPF is in charge of project management and construction management for the design concept carried out by NH and Sulitz & Muñoz Architects (Madrid - Hamburg).

In **BRAZIL**, an extremely important flagship project in the area is the major renovation of the **Teatro do Parque in Recife** . In 2019, the City of Recife has entrusted TPF with the management, control and supervision of the renovation, restoration and enlargement works of the theater.

In **FRANCE**, after participating with AKTIS agency in the urban redefinition of the **Olympic station of Chamrousse**, TPF won in 2019 a project management mission for lots including fluid, electricity and finishing works for the construction of a real estate and leisure complex of over 19,000 m². It includes a 4* Hotel with 120 rooms, a 3* Hotel with 120 rooms, seminar rooms, a multi-accommodation "Concept hostel", play areas with whirlpool, swimming pools, spa, surf wave, as well as a 448-space semi-underground car park on 2 underground levels. With ambitious environmental commitments (RT2012-20%, wood frame, connection to the biomass district heating network, recovery of waste energy, production of renewable photovoltaic energy with self-consumption), the project will also be integrated into the station's Smart Grid.

In **Sin-le-Noble**, pétanque and boules players practicing this Provencal game will be able to indulge in their passion in all weathers by 2022. The Douaisis Agglomeration Community entrusted TPF and Architect Nicolas GUILLOT with the design of a **covered pétanque stadium** of more than 8,000 m². The infrastructure will have 128 outdoor tracks and 64 indoor tracks as well as a platform with 1,000 seats for hosting national and international competitions. The complex will meet the architectural integration requirements of the Eco Quartier du Raquet.

Building

Among other highlights this year, we will also note the inauguration of the **Stadium Christian Maudry in Nogent-sur-Seine**, a 4,000 m² sports complex designed by agency Engasser & Associés for which TPF has carried out all-trade studies.

In the **GRAND DUCHY OF LUXEMBOURG**, we are continuing studies as part of a consortium in the context of the construction of the future **sports center** to be located on the old steel wastelands **of Belval** , with work planned to start in 2021. This large scale project will consist in particular of a reception structure, a swimming center, a multisport hall as well as an outdoor sports park.

In **POLAND**, TPF has started to design the project to build an **athletics stadium for AWF University**, the Katowiche Sports University whose national reputation is well established. This ambitious project involves the construction of an athletics stadium with an auditorium with 1,200 seats, an athletics hall with an auditorium with 600 seats and a shooting range.

In **PORTUGAL** and more specifically in **Lisbon**, TPF supervised this year the **transformation of two buildings into hotels**. The first hotel has a surface of 5,028 m² on Avenue Defensores de Chaves and houses 130 rooms, a bar and a restaurant since summer 2019. The second hotel has a surface of 6,000 m² on Duque d'Avila Avenue and will be ready at the end of 2020.

In the Algarve region, one of the most popular tourist destinations in Portugal, TPF continues to work on the **Vilamoura Lakes** tourism development project: a construction potential of 300,000 m², residential units for 8,500 inhabitants and 22 hectares of lakes dedicated to sports and tourist activities.
In addition to focusing on the networks, basic infrastructure and collective facilities of the 10,000 m² **Fornos Meco tourist complex** in Sesimbra, TPF also looked into the construction projects of the C**omporta Links and Comporta Dunes tourist complexes**, currently two of the country's largest real estate and tourism projects.

In **MOROCCO**, the year was punctuated by the inauguration of **the National Football Center (CNF) in Salé**. This new complex is equipped with state-of-the-art infrastructure and its equipment is compliant with FIFA standards, which has drawn a lot of attention. TPF carried out the studies and work monitoring for all trades, as well as the Scheduling Piloting Coordination (SPC) mission on the site. The site feature an area of 29 hectares including the construction of a 5-star hotel with 70 rooms, a convention center with three modern conference and training rooms, a medical sports center and a technical area as well as the redevelopment of the 95-bed accommodation center and administrative buildings.

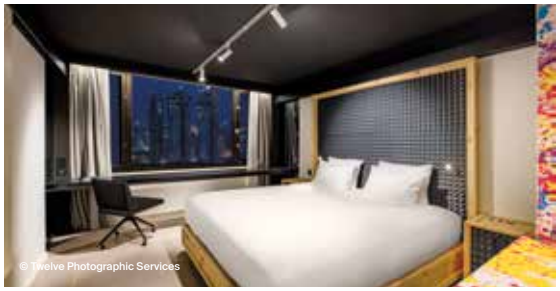
In **Rabat**, the world-renowned real estate developer Imkan, headquartered in Abu Dhabi, chose our Moroccan subsidiary as part of the construction of the new **luxury complex** on the ledge called "**Carrousel**". This new mixed-use project with an area of more than 10 hectares revolves around four main components: residences with ocean views, leisure and promenade spaces, a shopping center, a 5-star hotel and a business district. Our team will be mainly interested in the residential component since it has been entrusted with the complete mission of study and monitoring of all trade building works for the construction of 230 dwellings. Thirty-two months will be required to meet this new challenge.

We can also underline the great success of the new **Kénitra train station**. It won the "Exterior" mention in the 2019 World Architecture and Design Prize (Versailles Prize), in the "Stations" category. As a reminder, the new Kenitra station is dedicated to the Al-Boraq high-speed train, and has a 13,000 m² passenger building and underground parking with a capacity of 200 spaces. On the ground floor, it includes shops, restaurants, entertainment areas and a reception area for travelers. TPF can be proud of having contributed to the success of this prestigious project as an all-trade design office and of having integrated the latest technologies in the fields of energy and environment.

In **TURKEY**, we can mention the outcome of the execution study which was entrusted to us by the Metropolitan Municipality (IBB) as part of the project to develop the **ethnographic park of Istanbul**, a large open public space of 350,000 m² dedicated to sports and leisure. In addition to the development of sports and recreational facilities promoting traditional and modern sports, the project also provides for the development of gardens, the creation of exhibition spaces, restaurants and the establishment of support and administrative services.

It is with great enthusiasm and ambition that we have participated this year in the construction of OFFICES, HOUSING and MIXED BUILDINGS.

In **ANGOLA**, the construction of **the United Nations information center in Luanda** is nearing completion. The building will serve Portuguese-speaking African countries (PALOP). Its surface covers 10,000 m² of floor area, is divided into six floors



NHOW Brussels / Belgium

Teatro do Parque in Recife / Brazil

ZAC Chamrousse attitude lot A / France

Douaisis Petanque Stadium, Sin-le-Noble / France

Athletics stadium for AWF University, Katowiche / Poland

above ground and one level below ground, and consists of three buildings. It will also house a museum and rooms suitable for all types of events, meetings and conferences as well as technical premises. Our teams are present in the field to control and supervise the work.

In **BELGIUM**, TPF has successfully carried out several passive construction projects, including the **"Faînes" project in Neder-over-Heembeek**, a project promoting social mix and inclusion and offering 99 passive dwellings, or the **Dormont project in Berchem- Sainte-Agathe**, a building with 77 passive dwellings.

On the **site of Jardins de la Chasse in Etterbeek**, the end of construction is imminent for this new entirely passive municipal administrative center labeled BREEAM Excellent, as is the construction of a building with 41 apartments.
This new administrative complex has a gross surface area of around 30,000 m², and by 2020, it will bring together the municipal hotel and all of its administration, social services, a police station as well as premises made available to associations. Mission almost accomplished for our Technical Building Services department which is highly committed to this project.

In **Anderlecht**, we should mention our recent participation in **the passive Goujons project**: a complex comprising 4,530 m² of housing units and an integrated social and health center (CSSI) of around 1,500 m² managed by the international medical development NGO Doctors of the World. TPF is ensuring the full engineering mission in technical building services and stability.

Stability and Technical Building Services studies which have been entrusted to us as part of the turnkey construction of the **new Walloon headquarters of the ING bank in Louvain-la-Neuve** have now been completed. Designed by architectural firm Jaspers-Eyers Architects, the 10,000 m² building consists of a ground floor and four floors of offices built around a central atrium. An underground car park with 350 spaces will complete the package. We should add that this project aims to be exemplary in terms of sustainable development and aims for double certification (HQE and BREEAM Excellent).

As for the work on the **future headquarters of BNP Paribas Fortis**, rue Montagne du Parc in **Brussels**, this is progressing rapidly and should be completed by summer 2021. The demolition-reconstruction site of the former headquarters of Société Générale de Banque will give way to a brand new building with an identical gross area (95,000 m²) comprising 5 underground

Building

levels and 9 floors above ground. The building designed by Austrian architectural firm Baumschlager Eberle will offer a capacity of 4,500 workstations, around 70% greater than the current capacity. It will also meet the highest environmental and energy performance standards. TPF is responsible for the technical aspects of the project and more specifically for stability.

In **COLOMBIA**, the implementation of **the national free housing program** is progressing. A total of 30 projects and approximately 3,500 free dwellings composed of single-family, two-family and multi-family dwellings. TPF is particularly pleased to monitor the work on this project.

In **FRANCE**, TPF has finalized all-trade studies at the headquarters of **Schindler France** in Vélizy-Villacoublay. However, the mission is not over since we are now intervening in the works phase.

Among the highlights of the year, we will also note the delivery of various tertiary operations designed by TPF such as the Eko Active building in Marseille for Vinci Immobilier (Architect Franck Hammoutène), the Connexio building in Nice for BNP Paribas (Architect Marc Barani) or the redevelopment of the CCI Grand Lille (Agence Philippe Prost).

At the same time, we started studies relating to the construction of three office buildings, one of 25,500 m² in the heart of the **ZAC Campus Grand Parc in Villejuif** and the other two in **Montigny le Bretonneux** , namely the **Native building** of 19,000 m² and the **Aster building** of 24,500 m².

In terms of mixed projects, we will underline the program that will be developed on part of the Air France site at the heart of the **Sophia Antipolis technopole**, as well as the **conversion** project **of the old Citroën garage** in the heart of the 14th arrondissement of Paris. Our mission, All-Trade Engineering.

In the **GRAND DUCHY OF LUXEMBOURG**, on the heights of Hamm, the **GREENSQUARE** office **complex** (25,000 m²) has been delivered, a remarkable project from an energy and environmental point of view since it has obtained the BREEAM Excellent certification and the energy performance certificate (EPC) with AAA class. At the same time, the **CONNECTION** construction site (83,000 m²) was also initiated: 17,000 m² of offices on four floors, 4,000 m² of auditoriums and 16,000 m² of shops and restaurants on the ground floor and on level -1, a storage area of 11,000 m² below ground as well as 35,000 m² of underground car parks. TPF has been entrusted with the complete mission of Technical Building Services and stability.

In **PORTUGAL**, OneLiving Cascais and Parque Oriente constitute our flagship projects of 2019.

OneLiving Cascais is a luxury residential real estate project developed by Portuguese company Teixeira Duarte. It includes two residential lots with a floor area of 13,000 m² and 7,000 m² as well as 10,000 m² of outdoor spaces for leisure activities. In addition to the review of execution studies, TPF was responsible for supervising the works, whose duration was set at 28 months.

Parque Oriente is located in Lisbon. It is a mixed real estate complex with a floor area of approximately 43,578 m² comprising 13 lots intended for housing, commerce and services, supplemented by an underground parking lot of 28,502 m². Our design office is currently carrying out studies in BIM.

In Spain, we focused on a less usual type of accommodation this year.

In 2019, TPF was awarded the detailed design of **the New Immigration Detention Center of Algeciras**. In compliance with European and Spanish legal requirements in terms of respect for dignity and human rights, this center will be able to welcome five hundred migrants for stays of a maximum duration of 60 days although the average duration is 27 days. The infrastructure will be designed and appropriate for the reception of migrants.

TPF has also been entrusted with the control of materials and MEP systems for the **new prison in Tarragona**. This new prison complex is intended to replace the old one which still in operation (its closure will follow the opening of the new building). The construction site will last for a period of over a year.

As for the INDUSTRIAL and LOGISTICS REAL ESTATE market, it remains very active and the development of mail-order sales will continue to carry it. TPF wishes to keep a substantial place there.

In **BELGIUM, AVIETA** is building a **new** 15,000 m² **factory** on its Liège site in **Vinalmont**, in addition to its existing production unit. The sweet waffle maker will have four new production lines, expandable to eight, by October 2020. TPF is on all fronts to carry out this project whether it is for architecture, engineering (Technical Building Services, including

Luxury complex "Carrousel", Rabat / Morocco

Istanbul Ethnographic Park / Turkey

New administrative center of Etterbeek, Site Jardins de la Chasse / Belgium

Connection Project, Hamm / Grand-Duchy of Luxembourg

OneLiving Cascais / Portugal

production equipment), civil engineering, consultancy relating to hygiene, management or coordination of operations.

In **SPAIN**, in the logistics activity area of the port of Barcelona (ZAL Port), TPF is responsible for the design of the **warehouse for the storage and distribution of frozen food products as** well as the headquarters of **the Caprabo group**. The warehouse is intended for e-commerce and reverse logistics. The complex is located in the intermodal logistics center of the port of Barcelona and offers a total area of 24,500 m².

In north-eastern **FRANCE**, not far from Metz, TPF carried out the acceptance of the **secondary site of the European Directorate for the Quality of Medicines & HealthCare** (EDQM) from the Council of Europe in Ars-Laquenexy. Opened and inaugurated on November 15, 2019, it will make it possible to securely store the reference standards of the European Pharmacopoeia, in addition to those already stored in its Strasbourg building.

In 2019, TPF carried out studies of the structure, roads and utility services and climatic and electrical engineering lots for the construction of a **production plant specializing in the manufacture of dental injection devices in Castres** on behalf of **SOFIC**. Designed by ENZO & ROSSO Architectes Associés, the project is developing 6,300 m² of production and maintenance workshops (including premises classified ISO 7/8), high-rise storage areas, supply and shipping, and finally, offices. The project is aiming for a BREEAM Very Good certification.

Finally, in the promising industry of waste recovery and treatment, we can mention the project to transform the **household waste recovery center of SYCTOM in Ivry-Paris XIII**, for which we are responsible for Assistance to Project Owner, and the inauguration of the **Paris XV sorting center** process, which is now adapted to extend sorting to all plastic and metal packaging. The operation that we have carried out with the IHOL Group made it possible to increase the processing capacity to 32,200 tonnes / year and to improve the safety and working conditions of sorting agents.

In **PORTUGAL**, TPF is taking part in the construction project for **the new production unit of the pharmaceutical group Hovion** in **Seixal**. The project is located in the economic activity zone PIS III (Parque Industrial do Seixal) - Cucena, on a plot of 587,500 m². Its implementation requires urbanization works and the study of different infrastructures. This is the reason for which we were asked to take part. Particular emphasis

Building

was placed on energy efficiency and the use of natural resources. Finally, we can mention that this project is carried out with a BIM method.

In **ROMANIA**, TPF is particularly proud to have won this year the feasibility study for the **Bucharest-Ilfov multimodal hub** project **(BIMH)**. The project purpose is the construction of a multimodal transport hub in the Bucharest-Ilfov Development Region that will connect Airport Henri Coanda, railway Brasov-Bucharest-Slobozia-Constanta, motorways, Rail Cargo Terminal.

It includes the construction of the intermodal terminal and related infrastructure, the implementation of a system of tracking, planning and management of intermodal freight transport (using the intelligent transport systems available on the market) and the rehabilitation and modernization of the existing transport infrastructure near the terminal.

Near **Bucharest** , the contract for Construction Management for a **Private Facility for dry mortars** is nearing completion with 90% of the activities being achieved. The engineering services cover Detailed Design, Project management, Procurement, Technical Assistance and Works Supervision until final taking-over by the Client.

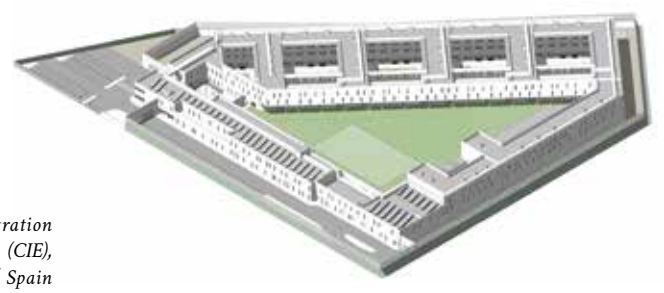
IN UKRAINE, TPF is participating in the construction of the **production unit for cable manufacturer LEONI** (phase III) in Kolomyia. This project developed in BIM includes several areas including a production area of 12,700 m², an administrative area of 920 m² and a refectory of 670 m² + terrace. TPF was responsible for carrying out the design and execution plans in collaboration with Delta Ukraine, the general designer of the project.

Let's finish this overview with the transversal areas of SMART CITY and DIGITAL, which are at the heart of tomorrow's environmental and societal challenges. In this perspective, TPF intends to bring its expertise to the construction of the city of tomorrow.

OnDijon, an intelligent and connected metropolis, has established itself as a major smart city project on French territory. TPF was responsible for supporting Dijon Métropole in the operational implementation of the connected public space management project "OnDijon" whose design, construction, operation and maintenance contract was awarded to the Bouygues Energies & Services group, Citelum, SUEZ, Capgemini. This concerns the creation of a connected cockpit to manage the urban equipment of the 24 municipalities making up the territory (traffic lights, lighting, video protection, road services, etc.). This is the first construction in this vast project launched in April 2019.

We will note the inauguration of the **Learning Grid** by the **Grenoble** Chamber of Industry and Commerce and Schneider Electric on the site of the Grenoble Institute of Trades and Techniques. TPF is particularly proud to have worked for three years on its design and implementation. This Micro-Grid project simulates the energy functioning of the city of tomorrow by deploying campus-wide intelligent energy management technologies, controlled from the energy cockpit .

Still in **FRANCE**, in addition to having won part of a three-year framework contract to study, design and build several **Data Centers** for the deployment of 5G by Bouygues Telecom, TPF was entrusted with other interesting missions such as: project management of infrastructure works for the future **high-performance computer from Météo France in Toulouse**, assistance to project owner for the installation **of the data center of the National Office for Studies and Aerospace Research (ONERA)** within the framework of the construction project of the N2 building on the Palaiseau site, or the design and monitoring mission for the realization and maintenance of **the GALILEO surveillance and security center** in Saint-Germain-en-Laye on behalf of the Ministry of Armed Forces. •



New Immigration Detention Center (CIE), Algeciras / Spain

AVIETA factory, Vinalmont / Belgium

Warehouse for the storage and distribution of frozen food and the headquarters of the Caprabo group, Barcelona / Spain

SOFIC factory, Castres / France

Multimodal hub Bucharest-Ilfov (BIMH) / Romania

Transport Infrastructures

Today, more than ever, the issue of sustainable mobility remains topical and continues to pose numerous challenges to the entire planet.

New cycling and pedestrian infrastructures, intermodality, efficient and sustainable public transport, Bus Rapid Transit (BRT), metros, trams, air cable transport, monorail, security and improvement of road, rail, air and maritime transport, Trans-European Network Transport (TEN-T), these are the many themes on which we particularly focused during the year 2019. The objectives seem clear: reduce journey times, ensure sustainable mobility, unclog roads and reduce emissions of polluting particles.

BIM has become a reality in the daily life of TPF. Our transport infrastructure department is already using this new method and, in 2019, new subsidiaries have implemented projects carried out entirely with BIM. Our objective is that, in a few years, all of our subsidiaries will work under the same platform in a collaborative and multidisciplinary manner which allows information to be exchanged between the different parties involved in a project, throughout its life cycle, to achieve "BIM Level 3".

In order to find the best solutions for our customers and develop more efficient, sustainable and environment-friendly infrastructures, TPF is constantly engaged and involved in research and development projects that allow us to stay at the forefront of engineering.

Among the projects to be highlighted in 2019 is an R&D project for advanced solutions for tunnel lighting. This project aims to develop innovative tunnel lighting solutions, with a view to developing a prototype that will simultaneously improve road safety in tunnels, reduce energy consumption and save costs during operation.

At the same time, TPF is carrying out an R&D project in autonomous robotics for the inspection and evaluation of buildings by integrating BIM. The "ROBIM" project concerns the design of a robot for the inspection of facades and roofs which will improve the identification, evaluation and diagnosis of disorders. TPF is also considering using this type of technology for the inspection and maintenance of bridge piles and decks.

Thanks to its broad knowledge of the transport infrastructure sector, acquired over many years and perfected over time, TPF has been able to add to its list of achievements.
In this regard, let's take a retrospective look at the services performed both in Australia and in Asia, in Africa, in Latin America, in Central America and on the European continent.

Our recent entry into the Australian market will undoubtedly strengthen the international dimension of the TPF Group. Indeed, AUSTRALIA is characterized by a stable economy and is positioned in the world as one of the most developed countries. Moreover, it is aiming to invest massively in transport infrastructures. The increased interest in this sector is a real opportunity for TPF.

We are already particularly happy to participate in the largest current road infrastructure project in Australia: WestConnex, a 33 km long highway which is mainly underground. Once completed, it will significantly reduce travel times for residents of the Sydney metropolitan area and develop the economy in the region.

A private consortium led by John Holland and CPB entrusted us with the design review of all electromechanical systems for underground section 3B.

As for *SOUTHEAST ASIA*, it has set course for public transport infrastructure. In Hanoi, Manila and Vientiane, fairly similar initiatives have emerged to cope with the increase in population, reduce congestion and reduce pollution.

In **VIETNAM**, the prospects for improving public transport are positive in **Hanoi** with the project to build **Line 3 of the metro**, which is financed by the Asian Development Bank (ADB), the European Investment Bank (EIB) and the French Development Agency. Once completed, it will link Nhon to Hanoi station on a 12.5 km route. Our role is to support the Client in the management of the project.

In the **PHILIPPINES**, TPF continues to provide Independent Checking Engineer Services for the extension, operation and maintenance of **Line 1 of the Manila's Light Transit Rail**. The project is intended to increase daily passenger capacity from 500,000 to 800,000 throughout the 32- year concession period.

In **LAOS**, progress has been made in the design of the **Vientiane Bus Rapid Transit (BRT)**. The construction phase, in which TPF will also be involved, is expected to begin in 2020. The objective is twofold: to improve the reliability of services and to facilitate travel.

In *SOUTHEAST ASIA COUNTRIES*, road and air transport also remain promising sectors.

In the **PHILIPPINES**, for example, TPF is providing consulting services to the consortium of private investors involved in the expansion of the country's main airport, the **Ninoy Aquino International Airport in Manila**. Besides being the busiest Filipino airport, it is also the main airport in Metro Manila. The objective is to increase the annual capacity of the airport to 65 M passengers vs. 35 M currently, and air traffic movements per hour by 52, vs. 40 currently.

WestConnex, Sydney / Australia

Hanoi Metro / Vietnam

Manohar Parrikar Canacona bypass / India

In **EAST TIMOR**, a new road contract was signed this year with the Government, through the Ministry of Public Works, Transport and Communications. Our team will be responsible for the design of a new road to improve the access to the port of Tibar Bay, about ten kilometers from the capital.

As for **INDIA**, its development implies the development of its infrastructures, particularly those linked to mobility. The Group is aware of this and intends to play a key role in it. Roads, railway lines, tunnels and metro also caught our attention.

During 2019, new contracts amounting to around 30 million euros were secured in the transport sector, which will lead to an increase in our presence in this important market in the coming years.

In the Indian state of Tamil Nadu, our geotechnical engineers are delighted to participate in the second phase of the gigantic **Chennai metro** project, whose objective is to provide the capital with three additional lines 119 km long.

In the states of Goa, Maharashtra, Nagaland and Assam, the 2019 edition gave pride of place to road infrastructure.

On the rail side, TPF is involved in the project to build a **third railway line between Narayangarh (West Bengal) and Bhadrak (Odisha)**, carried out under the aegis of the SER, Kharagpur (South East Railway).

We should also mention the design of safety equipment for **the Vailoo and Sudhmahadev - Dranga tunnels**, which are 10 and 4.5 km long, respectively. An automatic deluge-type fire sprinkler system has been implemented to protect the structures against fire. This type of system can reach a power of 200 MW and is not very widespread given its high cost. It is only used in special tunnels.

On the borders of Asia and Europe and more particularly in TURKEY, the company has established its reputation and its commercial success by winning an important contract for the supervision of the construction of the Çerkezköy - Kapıkule section of the railway line project Halkalı (Turkey) - Kapıkule (Bulgaria). This project is funded with a budget of 275 million euros by the European Union within the framework of the Instrument for Pre-Accession Assistance (IPA II), the largest investment of the European Union in Turkey.

Transport Infrastructures

The value of the Works Contract for the construction of the railway line is around 530 million Euros, while the supervision contract signed by TPF has a budget of 23.2 million Euros.

The project includes the construction of a double track railway line, which will operate both passenger and freight trains with a design speed of 200 km/h. The 152 km ETCS Level 1 fast train track will start at Çerkezköy and end at Kapıkule, at the Bulgarian Border. As the FIDIC Engineer, TPF will carry out the supervision services, design works for 3 stations and the railway track between Kapıkule Station and the Bulgarian Border, and the signaling and electrification works.

The Halkalı-Kapıkule Railway line project is the final stage of connecting to the Trans-European Transport Networks. The project is also significant for contributing to the One Belt One Road project to realize a giant infrastructure and transportation network connecting Asia to Europe. Estimated to be completed by 2023, the project will commemorate the 100th year of the modern Turkish Republic.

At the same time, several projects of primary importance for the modernization and development of the turkish rail network are very close to success.

As such, we can underline the project financed by the World Bank relating to the modernization of **the conventional railway lines Bogazköprü - Yenice and Mersin - Toprakale**. In 2019 TPF has been working on the supply and installation of the railway traffic management systems.

In the high-speed sector, the **Ankara-Istanbul TGV** connection project has entered its final phase and the contract should end in 2021. TPF supports the public agency in charge of the management of this macro-project with an investment of more than 3 billion euros.

Finally, progress was made in the design of the **railway line linking the Yildirim Beyazit University to Çubuk**, and the supervision services for the construction of the **infrastructure of the rail link between Adapazari and the Karasu Port** were completed.

In *NORTH AFRICA,* TPF was able to confirm its investment in the transport sector despite certain uncertainties.

As we know, in ALGERIA, 2019 was a difficult year due to a relatively unstable political context. Nevertheless, our expertise was called upon to develop new projects. The positive momentum in favor of public transport and in particular metros and trams is far from over.

TPF continues to supervise the extension of the Line 1 of the **Algiers Metro** to the airport. This year, the works have made great progress thanks to the use of a tunnel boring machine, being the first tunnel built in Algeria using this method. This project aims to link the city center with the airport and the business district of Bab Ezzouar with the construction of a 9.5 km line section and 9 stations.

The Group is also participating in the construction of the first **tram** line in **Mostaganem**, a 14 km long line with 24 stopping points. ALSTOM Transport appointed us to carry out the execution studies for civil engineering works (3 lots).

In the area of road safety, the **rehabilitation of tunnels** is now a major subject in order to ensure the safety of users. In this context, TPF is currently working on two major projects.

In the rail sector, TPF currently controls and supervises the construction of more than **700 km of railway lines**. As such, TPF actively participates in the construction of the Annaba-Ramdane Djamel, Relizane-Tiaret-Tissemsilt, Oued Tletat-Tlemcen lines and the eastern mining line - Lot 3

In TUNISIA, the megaproject of the central loop of the Tunis Light Rail System and the new transport hub in Place de Barcelone, whose completion is scheduled for 2024, will improve and develop public transport in Greater Tunis.

TPF has been awarded a contract to update the existing detailed design, prepare technical tender specifications, review and approve the contractor's design, supervise the works, and provide assistance during the line's commissioning and the defects liability period. With this new contract, the group is strengthening its position in Tunisia and in the urban mobility sector in general.

In MOROCCO, we can mention our participation in the Greater Agadir project to create a Bus Rapid Transit line and the great success of the new Kénitra train station.

It won the prize for best exterior at the 2019 Prix Versailles international architecture competition, in the "Passenger Stations" Category.

As a reminder, the new Kénitra station, dedicated to the Al-Boraq high-speed train, has a 13,000 m² passenger building and underground parking with a capacity of 200 spaces. TPF can congratulate itself for having contributed to the success of this prestigious project as an all-trade design office and for having integrated the latest technologies in energy and environment.

Ankara – Istanbul High Speed Train / Turkey

Extension of line 1 of Algiers Metro / Algeria

Tram in Mostaganem / Algeria

Finally, in IVORY COAST, TPF won a design contract for the repair of the northern highway connecting Abidjan and Yamoussoukro.

This project is part of the Public-Private Partnership (Ppp) of the Banque Centrale Populaire Group (BCP) with the State of Ivory Coast.

In *EUROPE*, this year was particularly marked by themes linked to mobility and transport of goods. Subjects which we have particularly studied include intermodality and the creation of exchange hubs, the development of urban public transport, sustainable development, soft mobility in urban areas or even the development of corridors within the framework of the Trans-European Transport Network (TEN-T).

In BELGIUM, in addition to the construction of a cycle tunnel along the regional road R22 which connects Zaventem to the region of Kraainem, our stability engineers have worked on other projects in the fields of roads, airports and metro.

Among these, we will note the **North extension of the Brussels metro**, involving the creation of 7 new stations, connection tunnels and a depot, the **extension of the runways at Brussels South Charleroi airport** or the **bypass of Jodoigne** whose work should start in the spring.

In SPAIN, the year 2019 was hardly an exception: the problem of transport infrastructure is still at the forefront of our multiple operations.

Among the **rail projects** currently in progress, we will note the realization of a standard gauge link within the framework of the multimodal logistics platform project from Júndiz to Vitoria-Gasteiz, the construction of a 25.5 km single track section of the AVE high-speed rail connection of the Mediterranean corridor between Murcia and Almeria, the doubling of the section of the Ovied - Santandar railway line between La Carrera and Pola de Siero, the modernization of the Silla-Cullera rail section of the line connecting Gandia in Silla, the modernization of a 17 km single track section of the Mérida - Los Rosales railway line or the burial of the 2 km section of railway line which crosses the town of Torrelavega.

Transport Infrastructures

We will give special mention to a new contract that we won this year. It relates to the analysis of rail freight corridors in the general interest network. The network we are studying consists of three corridors: Mediterranean, Atlantic, and Cantabria-Mediterranean.

In **Barcelona**, our strong relationship with the **Barcelona Metro** has been rewarded with a new contract. TPF will be responsible for the renovation of a 9 km section of the L1 of the Barcelona Metro, which is more than 50 years old and covers 9 stations. Improvement works will cover the stretch from the Clot station to the Fondo station.

Ensuring **port development** for the coming years is another challenge and TPF is determined to participate. TPF will contribute to the expansion of the south quay at the Port of Valencia and of the commercial quay at the Port of Vigo

In the **airport sector** we continue to expand our collaboration with AENA, the Spanish airport management agency.

Finally, in the **road sector** , thanks to our extensive experience in tunnel safety systems, we have once again been awarded a contract to inspect the systems and equipment of the **Madrid Calle 30 Tunnels**. The audit being carried out covers 48 km of tunnels used by more than 500,000 vehicles every day, being the largest tunnel infrastructure in Spain.

2019 saw the completion of the contract for the renovation, improvement and optimization of the ventilation system of the **Guadarrama tunnel** . Within its framework, we performed 3D simulations using CFD software, considering a fire power of 30 MW and 100 MW in different scenarios, as well as evacuation simulations to verify the security conditions of the tunnel in degraded mode (faulty fans or communication failure). These have complemented the 1D simulations carried out during a preliminary audit and calibrated using data collected on site during tunnel operation.

In FRANCE, road and airport infrastructures have drawn our full attention.

In the road sector, we will note the completion of the road link project work for RD65 and RD9 departmental roads. It is a structuring operation for the mobility of the Aix-en-Provence territory. TPF is therefore carrying out a complete roads and utility services project management mission, including the design of a structure to cross the coastal river of Arc.

The group also holds a leading position in the **airport sector**. Our experts in the field are currently active in the airports of Nice Côte d'Azur, Saint-Étienne-Loire, Bastia Poretta, Basel-Mulhouse and Marseille-Provence. Among the projects currently underway, we will mention the extension of terminal 2 at Nice Côte d'Azur airport, the fitting out of several aircraft and taxiway stations at Nice Côte d'Azur and Bastia Poretta airports, as well as modelling of the control tower at Basel-Mulhouse airport.

In the same vein, this time in POLAND, activity in the transport sector was particularly dense in 2019. In addition to our participation in major road projects such as the construction of the new 2X2-lane motorway (S12) up to the border with Ukraine, our design and engineering office is also working on several railway programs.

TPF is currently supervising the major construction site for the public transport network in the Szczecin agglomeration. This metropolitan railway project is intended to serve the main cities of West Pomerania, including Szczezin, Stargard, Goleniów, Gryfino, Kobylanka and Police, and will use existing, partially unused railway lines.

The Group also confirmed its reputation with the Polish National Railway Company, Polskie Koleje Państwowe SA, with the signing of nine new contracts. The design work entrusted to us under the **Stations Investment Program for 2016 - 2023** concerns the stations of Węgliniec, Łuków, Gdańsk Oliwa, Gdańsk Wrzeszcz, Władysławowo, Reda, Puck, Włocławek and the Olsztyn Główny station located in the voivod of Varmie-Mazurie, nicknamed the "Land of a Thousand Lakes".

In Portugal, as elsewhere, projects are increasing to improve traffic conditions and the safety of road users, whether they are motorists or cyclists. In the rail sector, improving connections with Spain is a priority.

In addition to rehabilitating the 342 km of roads included in the **Baixo Alentejo sub-concession**, TPF is working on other equally interesting projects. We can mention the creation of a new road link between the industrial area of Cabeça de Porta and the A11, the construction of the expressway Fajã da Ovelha - Ponta do Pargo and the development of cycle paths in Lisbon and Oeiras.

With regard to Portuguese rail this year, TPF was assigned construction work monitoring for the new **89 km rail link between Evora and Linha do Esto**, including its connection with Spain. This investment has a budget of 530 million euros, and is well up to the challenge when we know that this new line will be part of the future "South international corridor" which will link southern ports like the one of Sines to Spain and the rest of the European continent.

New Kénitra station / Morocco

Extension of Terminal 2 at Nice Côte d'Azur airport / France

Rail link between Evora and Linha do Esto / Portugal

Fajã da Ovelha expressway – Ponta do Pargo / Portugal

On the island of Madeira, improvements to the port infrastructure are still underway, notably in the **ports of Funchal, Machico, Caniçal and Porto Santo**. The Ports Administration of the Autonomous Region of Madeira entrusted us with the inspection of structures and execution studies for the rehabilitation works.

In ROMANIA, two of the most important highlights this year in the road and multimodal transport fields are the feasibility study of the Reghin City Bypass and the Bucharest-Ilfov multimodal hub (BIMH).

The construction of the **multimodal transport hub** in the **Bucharest-Ilfov** Development Region will connect Airport Henri Coanda, railway Brasov-Bucharest-Slobozia-Constanta, motorways, Rail Cargo Terminal. This project is one of the TEN-T priority projects and includes the construction of the intermodal terminal and related infrastructure, the implementation of a system of tracking, planning and management of intermodal freight transport (using the intelligent transport systems available on the market) and the rehabilitation and modernization of the existing transport infrastructure near the terminal.

In the **port sector**, the group continued to expand its presence in Romania and has obtained three new supervision contracts. The coming years promise to be particularly busy on the shores of the Black Sea and the Danube.
The projects in question relate to the construction of a new quay in the Galati river port as part of phase I of the project to build a multimodal platform with a capacity of 150,000 TEUs, the modernization of the infrastructures of the port of Constanta (increasing the depth of the sailing line and of the basins) and the protection works on the river banks of the Sulina Channel for the improvement of river navigation.

Thanks to our long-standing presence in most countries of *CENTRAL AMERICA and LATIN AMERICA* through our various subsidiaries and branches, we have been able to maintain a leading role in the development of transport infrastructure.

In **ARGENTINA**, TPF is still very active despite the particu-

Transport Infrastructures

larly difficult economic and financial situation. In Buenos Aires, the inauguration of the mega project **"Paseo del Bajo"** undoubtedly marked the year, a project which was also awarded 2019 Best Road Engineering Works from the Argentine Road Association. After two years of work, it is now possible to connect the north and south of the capital via a 7.1 km road corridor separating the flows of heavy goods vehicles and long distance coaches (4 dedicated lanes) of those of light vehicles (2 x 4 lanes).

In addition to the ten contracts currently in progress in **BOLIVIA**, a new study and work monitoring contract has been added for the construction of a 50 km section of the "**Héroes del Pacífico**" road. This strategic infrastructure will link Bolivia with the Peruvian port of Llo and thus facilitate the import and export of its products by sea.

In **BRAZIL**, there is a 2.5 km road infrastructure project carried out entirely in BIM. This is the new **access road to the B3 / B4 dams** in the State of Minas Gerais. This project is particularly interesting because it is carried out in an area with rugged terrain and complicated geotechnical characteristics.

In **CHILE**, our vast experience in the production of structure engineering studies in the railway sector has enabled us to sign a dozen new contracts this year. Our missions are multiple: technical inspection and supervision of the rehabilitation and reinforcement works of around thirty bridges, automation of 144 level crossings or technical inspections of the Railway Radio Communications Systems all over the country.

In **COLOMBIA**, our teams are particularly present in the airport sector and intend to be even more so in 2020.

In 2019, among other projects, we carried out the detailed design of the project to extend the **Reyes Murillo airport in Nuqui** in the department of Chocó.

The supervision contract for the **Centre-North Concession**, which comprises **6 airports**, is progressing satisfactorily, with the value of the consultancy contract amounting to more than 8 million euros. The airports concerned are: José María Córdova (Rionegro), Olaya Herrera (Medellín), El Caraño (Quibó), Los Garzones (Montería), Antonio Roldán (Carepa) and Las Brujas (Corozal).

Let us not forget the other projects in the metro and road sectors. TPF has provided design services in the framework of the design-build bidding process of the first **metro line in Bogota** to one of the international consortiums that participated in the construction tender.

As for the road projects currently underway, we can mention the detailed design of the 155 km long **Ánimas - Nuquí road** and the **Río Magdalena motorway concession**, as well as the supervision of the construction of **three road corridors**, namely the Honda - Manizales, Chía - La Mesa - Girardot and "Transversal Central del Pacífico".

In **COSTA RICA**, we are still supervising the construction of the **northern ring road of San José**. Similarly, the National Concessions Council has extended the contract for the supervision of the operation of the **San José-Caldera Highway Concession**. In addition, a new road design contract has been secured in the private sector.

Mission accomplished in **GUATEMALA** for our team in charge of supervising the construction work of the "**Franja Transversal Norte**" Highway that links several departments of Guatemala with Mexico.

However, in **HONDURAS**, we are continuing to work on the **West Highway rehabilitation** project. For the moment, we are supervising the rehabilitation of the 36 km section between Los Ranchos and El Florido, on the border with Guatemala.

In **PERU**, we continued our mission within the framework of the construction of **lines 2 and 4 of the Lima metro** .

As part of the feasibility study for **line 4 of the Lima metro**, TPF carried out a specialized analysis of passenger flows, both inside and outside the stations, taking into account vehicle flow in the area. This analysis allowed us to size the stations in adequacy with the expected flows and to ensure comfort of the users, by also comparing the current situation with the future situation after the realization of the stations and the corresponding urban development works. This study is very important because of the volume of travelers per day (up to 30,000 users at peak times for the busiest station) that these underground stations will receive during the operational phase.

In order to guarantee maximum safety conditions during the operation of **line 2**, a study on the behavior of stations in the event of fire was carried out. Using CFD simulation (digital analysis of fluid dynamics), it was possible to optimize and ensure effective smoke extraction from stations and tunnels in

the event of fire, and pedestrian simulation software was used to verify that evacuation takes place quickly and under favorable security conditions.

Finally, TPF also participates in innovative projects in the country, such as the demand study for the **San Juan de Lurigancho-Independencia cable car in Lima**, considering both the currently populated areas with difficult access and the connection with the Line 1 of the Lima Metro and the COSAC I BRT Line. Almost 6 km long, the network will feature 5 stations and will connect the Lima Norte district to San Juan de Lurigancho, the most populous district in Peru. •

Group 5 Bridge / Chile

Reyes Murillo Airport in Nuqui / Colombia

Puno road corridor / Peru

Environment

Climate, protection of the environment and natural resources, sustainable development, renewable energies, water and sanitation for each and every one of us, these are the keywords that summarize the year 2019.

In 2019, as in previous years, our teams from the Environment Center of Expertise used their energy to support our customers around the world. They supported their projects in particular in Mozambique, Angola, Kenya, Cameroon, Senegal, Mauritania, Egypt, Colombia, Panama, India, Brazil and Guinea Conakry.

In terms of innovation, it should be emphasized that TPF was responsible for developing and implementing a computer model for forecasting and managing floods in the Zambezi valley in Mozambique. This model has already been tested and on the basis of meteorological data, it has proved capable of reproducing the floods caused by the devastating passage of cyclone IDAI.

Before detailing the progress of emblematic projects of the year 2019, we would like to highlight the price we won during the PT Global Water Awards 2019, which aim to recognize and reward the internationalization of Portuguese water cluster companies. TPF emerged victorious in the Services category for the "Mozambique Maritime Spatial Planning (POEM - Plano de Ordenamento do Espaço Marítimo)" project.

In *AFRICA,* hydroelectric power stations are gradually being installed on African rivers and projects to supply drinking water and sanitation are increasing. Also, the management of maritime space and natural resources and the development of urban green infrastructure are other important issues for the continent's future.

In ANGOLA, and more specifically in the province of Moxico, TPF is responsible for reviewing the design and supervising the construction of the Luena city drinking water distribution network .

This project, funded by the International Bank for Reconstruction and Development, is particularly complex given its location in disorganized and densely populated peri-urban areas. The works, with a foreseen duration of 30 months, involve the installation of more than 150 km of piping and fifteen thousand household connections.

In the province of Cuanza Norte, the Caculo Cabaça hydroelectric project on the Kwanza river is still ongoing.

It is the country's future largest hydroelectric dam, which will supply 2,200 MW within four years. Built by China Gezhouba Group.co, Ltd (CGGC), this structuring project is part of the National Energy Security Plan 2025 whose objective is to reach 9,000 megawatts. For our team in charge of the complete revision of the project in all its civil engineering components, the work is continuing.

In BURKINA FASO, TPF won a joint supervision and control of the works for the third tranche of the drinking water supply project for the city of Ouagadougou from the Ziga dam (Ziga II).

The 2007 Ziga Master Plan has been updated in order to cover the capital's water needs by 2030. It plans to increase production capacity by around 150,000 m³ per day (7,500 m³/h).

The project includes: the realization of a new supply between Ziga and Ouagadougou, the creation of new reservoirs (+ 61,500 m³), the strengthening and extension of the distribution networks, a gravity pipe in cast iron DN1600 mm of 23 km between the Boudtenga reservoir and the SP3 site in Ouagadougou as well as the creation of private connections and standpipes.

Caculo Cabaça hydroelectric project / Angola

Drinking water supply project for the city of Ouagadougou / Burkina Faso

Seguelil dam, Adrar / Mauritania

CAMEROON intends to respond to the growing demand for electrical energy from its population as well as from the industrial sector. To meet this challenge, the government of Cameroon has launched a multitude of projects in recent years.

This year, in **the coastal region of Manjo, in Nkongsamba**, we have finalized the studies relating to the development of a small **hydroelectric power station** for the United Nations Industrial Development Organization (UNIDO).

In **Warak**, the vast construction site of the **Bini hydroelectric development** project is progressing. In detail, the complex includes a dam with a capacity of 603 hm^3, a hydroelectric plant of 75 MW and a 225 kV power line of around 70 km to the Mounguel substation. TPF, in consortium with the INTERCHNE company, provides assistance to the project owner and supervision of the works.

In EGYPT, the Fakos 3 - El Sawaleh sanitation project in the Sharkia governorate is of particular importance because it is the first contract we have won in Egypt in the water sector.

The project is funded by the French Development Agency (AFD), the European Investment Bank (EIB) and the KfW Development Bank. It concerns the construction of five new pumping stations and around 64 km of sewage pipes in the small towns of Sowwada, El Rawwada an El-Hegagia Elmostagada.

GUINEA has considerable hydroelectric potential which it wishes to develop further with a view to strengthening its energy autonomy.

The feasibility and detailed preliminary design studies that we must carry out within seven months for the United Nations Industrial Development Organization (UNIDO) concern the construction of the micro-hydroelectric power station of Gbotodou on the Milo river, with a power between 4 and 5 MW.

In KENYA this year, TPF continued to work on the Sagana river hydroelectric development project, with an estimated power of 45 MW.

This year, TPF studied the feasibility of the project on behalf of REIKE Ltd. On the one hand, we carried out the technical and

Environment

economic feasibility study and, on the other hand, the detailed financial feasibility study.

At the end of 2019, a new contract was signed for the design phase.

The studies to be carried out cover a wide range of services: geological, hydrological and hydraulic studies, design of the layout with the exception of electrical installations and equipment for generating electricity.

In MAURITANIA, 2019 was an important year for our engineers specializing in hydraulics since the efforts made in recent months have resulted in the inauguration of the Seguelil dam in the wilaya of Adrar.

TPF won the supervision contract for the construction of the Seguelil dam from the Ministry of Agriculture and the Ministry of Water and Sanitation. This concrete gravity dam with a length of 420 m and a height of 19 m has a capacity of 19 million cubic meters of water. Nevertheless, our work is not finished yet as we are currently providing technical assistance during the reservoir impoundment phase.

In MOZAMBIQUE, TPF is working on the development of the Maritime Spatial Plan (POEM - Plano de Ordenamento do Espaço Marítimo). This essential tool for the development of the country and its maritime space will allow all activities to coexist without conflicts, to guarantee a harmonious and sustainable use of the sea and coastal areas including fishery resources.

The project is funded by the World Bank and other sources with a budget of $3.5 million and covers an exclusive economic zone (EEZ) of 562,000 km².

The development of the POEM is part of the implementation of the first project on Fisheries Governance and Shared Growth in the Southwest of the Indian Ocean (SWIOFish1) which aims to stop depletion of stocks, reduce resource degradation, improve fisheries management, and increase economic benefits from fishing activities for families living in coastal communities in the region.

It is in a context of particularly tough international competition that our team, made up of 25 Portuguese and Mozambican experts, won this 24-month contract requiring 100 man-months. The demonstration in Mozambique of their expertise in maritime economics and maritime spatial planning could well open up new opportunities in other regions of the world.

Also in Mozambique, TPF is developing urban regeneration projects in the city of Beira, promoted by AIAS (Water and Sanitation Infrastructure Administration).

These works include the regeneration project in the informal settlement of Goto, in Ponta-Gêa district, and the elaboration of the landscape and external infrastructures design for various areas, including Kiosks and a Pedestrian Bridge, integrated in the Green Urban Infrastructures' project of Beira city, in which TPF is also participating, in the construction works' supervision.

Note that the creation of these new high-quality public spaces intends to improve the comfort and well-being of residents while preserving and improving the ecosystems and ecological integrity of the Chiveve River.

In NIGER, this year saw the completion of construction work on the Goudel IV drinking water treatment plant as part of the project to strengthen the drinking water supply system in the city of Niamey, the capital of Niger.

Acting as consulting engineer, TPF put its expertise in stability to the service of project owner Denys, in order to support it in carrying out the project.

In SENEGAL, the enhancement and development of the resources of the Senegal river basin and the improvement of Dakar's drinking water supply are at the heart of our concerns.

Within the framework of implementation of the project for integrated water resources management and development of multiple uses of the **Senegal river basin** (PGIRE), the Organization for the Development of the Senegal River (OMVS) has entrusted TPF with the studies, supervision and control of the cleaning and maintenance work on hydraulic axes on the two banks of the Senegal River (Mauritania and Senegal).

In **Dakar**, the **seawater desalination plant** project in Les Mamelles is progressing. This work will strengthen the water supply of Dakar with 50,000 m³/day upgradable to 100,000.

Plan for the development of maritime areas (POEM – Plano de Ordenamento do Espaço Marítimo) / Mozambique

Urban regeneration program in Beira / Mozambique

Seawater desalination plant in Les Mamelles, Dakar / Senegal

Work is scheduled to start in 2020 and be completed in 2022. For the record, the project has two components: the construction of the plant itself (including the water intake, the marine outfall, the pumping station and the electricity supply) and the renewal of nearly 460 km of distribution networks in the capital. Our consulting engineering office will focus on construction control and supervision.

In *LATIN AMERICA and CENTRAL AMERICA*, the group has developed its business around four areas: water supply for human consumption and irrigation, sanitation, waste water treatment and socio-environmental engineering.

In BRAZIL, the "Ramal do Agreste" water supply system is one of the largest waterworks under construction: the total investment surpasses 200 million euros.

Its many channels, siphons, tunnels, dams, and water pipes will conduct water from the "São Francisco River Integration Project" to more than 2 million people in about 70 municipalities where prolonged droughts threaten survival.

This engineering project is interesting in more than one way because it is the first time that TPF has used drone technology to monitor the progress of works and inspect their quality. Using drones has many benefits: precision of the data and images collected making it possible to remotely analyze field data and quickly identify problems, saving time and reducing costs in terms of repairs.

By combining aforementioned drone monitoring with Machine Learning (ML), a branch of Artificial Intelligence that uses pre-analysed data to train mathematical models, TPF has been able to increase the efficiency of supervision works. Engineers trained an algorithm to pre-analyse drone footage and quickly identify conformity issues of kilometres of canals and critical quality issues such as cracked concrete slabs.

The use of drones combined with the use of Machine Learning and artificial intelligence to carry out a project is a great first success for TPF. These tools are essential to build a better world and create added value for the company, and will open the way to many new opportunities. We are convinced of it.

Environment

TPF is also participating in the construction of other major works that are just as interesting: the Xingó canal (phase I), the Fronteiras and Frecheirinha dams and the Teresina sewer system.

The **Xingó Canal Basic Project** is funded by the Ministry of Regional Development through the Programa de Aceleração de Crescimento (PAC). The investment covers the municipalities of Paulo Afonso and Santa Brígida, in the state of Bahia, and Canindé de São Francisco and Poço Redondo, in the state of Sergipe.TPF has carried out the Regional Insertion Studies and currently works to optimize the channel layout in matters of interference, topography, constructive and drainage conditions. The contract was signed with the São Francisco and Parnaíba Valleys Development Company (Codevasf) and is intended for the supply of water for human consumption, irrigated agriculture and agro-industries of northeastern Brazil. The first phase of the project corresponds to the capture works in the Paulo Afonso IV reservoir up to km 114.55 of its layout. To meet the water demand of 31 m³/s, the channel will have a tunnel with an approximate length of 2km, 26 channel segments, aqueducts, 14 control structures and 15 extruders.

In the State of Ceará and more specifically in the Sertão de Cratéus micro-region, TPF is responsible for the inspection, supervision and technological control of the works of the **Fronteiras Dam**. The work is financed by the Federal Government, through its National Department of Works Against the Droughts (DNOCS). Its expected accumulation volume is around 488,18 cubic hectometres. The central wall was designed in roll compacted concrete and its extension is 880 meters, with a maximum height of 39.50 meters.

The construction of **the Frecheirinha dam** is another project that the group is currently working on in the state of Ceará. With a capacity estimated at 82 hm³, the structure is intended for the supply of water to the inhabitants of the municipality and for the irrigation of approximately 300,000 hectares of land.

In the State of Piaui, TPF is elaborating the projects of the **sanitary sewage system of Teresina**, capital of the Brazilian state of Piaui. The sewage system will serve a population of 1,227,147 inhabitants and will have an average flow of 1,831 liters per second.

TPF 's environmental engineering activities continued to develop in Brazil. In particular, TPF has helped victims of the ecological and human disaster in Brumadinho and worked on programs for the benefit of indigenous communities.

TPF offers its expert consulting services and implements compensatory measures in favor of traditional communities living in places directly concerned by large-scale projects. In the Belo Monte region, one of the projects currently underway concerns **three Indigenous Lands** located along the IRIRI River (TI-Arara, TI-Kararaô and TI-Cachoeira Seca) with distinct social and territorial features. The work has as specific objectives the execution of the following programs: Institutional Strengthening Program (PFI); Indigenous School Education Program (PEEI); Material and Immaterial Cultural Patrimony Program (PPCMI); Productive Activities Program (PAP) and Indigenous Territorial Management Program (PGTI)

On 25 January 2019, four years after the failure of the Bento Rodrigues dam, the **Brumadinho** dam belonging to mining company Vale also failed, causing a gigantic mudslide carrying away everything in its path. Within the framework of the emergency action plan and the program to repair human and environmental damage, TPF mobilized a team of more than 200 people to help the victims and Vale. This program also covers operations to dismantle Vale dams built on the same construction method as that of Brumadinho and presenting a high risk of collapse, currently estimated at ten. Building on the experience acquired during the failure of the Bento Rodrigues dam in 2015, TPF is currently supporting Vale on several aspects.

In COLOMBIA, news are pretty good for our technical teams in charge of supervising several construction sites.

West of Bogóta, in the Juan Amarillo wetland, construction work on the **functional link between the towns of Engativá and Suba** is progressing well.

The same is true for the construction of **water and sanitation systems in Quibdó**, in northwest Colombia.

As for the **Tabio drinking water treatment plant** in the Cundinamarca department, it is now built and commissioned. TPF was entrusted with the supervision of the works.

Finally, our long experience in project management has enabled us this year to participate in the project to extend the **El Salitre wastewater treatment plant** in Bogotá. The objective is two-

Aerial view of the Ramal do Agreste water supply system / Brazil

Fronteiras Dam / Brazil

Extension of the El Salitre wastewater treatment plant in Bogotá / Colombia

fold: double the amount of water treated and reduce pollution of the waters of the Rio Bogotá.

In PANAMA, TPF is carrying out the detailed design of the Arraiján Est wastewater treatment plant as part of the design-build contract concluded between the Panama Ministry of Health and the PTAR Arraiján 2016 group, led by FCC Aqualia.

This project is part of the vast Panama sanitation program and represents an investment of more than $120 million.

The plant employs conventional anaerobic digestion technology, including biological nitrogen removal and chemical phosphorus removal processes. It will initially treat the wastewater from 151,703 Population Equivalent and by 2050 that of 243,504 Population Equivalent. The generated biogas can be used at the treatment facilities, both in boilers and as fuel for one generator with capacity to produce electricity that can be consumed by the WWTP itself.

TPF's mission is vast, it includes detailed engineering design, management of the procurement of electrical and mechanical systems, as well as quality control, manuals and commissioning procedures.

In *ASIA*, the group is active in the field of wastewater treatment and seawater desalination.

In SAUDI ARABIA, the group is currently working on three projects.

For the Spanish company Tedagua, TPF produced the design of the expansion of the **Dammam WWTP** and the design of the works for the renovation and expansion of the **WWTP of the Jeddah Airport** (Phase II). Both were carried out for the same consortium, under a DBOT modality (design-build-operate-transfer).

The project for the **large-scale desalination plant at Al Shuqaiq** is also progressing. The technical assistance contract that we won last year from FCC contractor as part of a design-build contract mainly concerns the marine works required for the construction of the desalination plant.

Environment

In INDIA, TPF is interested in the drainage of groundwater and rainwater from Dondaicha (Taluka-Shindkheda District-Dhule) in the state of Maharashtra.

The city had 46,767 inhabitants according to the last census (2011) and has grown over the years from 236 to 3,250 hectares. It is crossed by the Amravati and Bhogwati rivers, while 14 km away flows the Tapi river which constitutes the source of water supply. TPF has been appointed as a consultant to execute the DPR and the PMC. This is a first for the Group in India in the water sector.

Among the highlights of the project, we can mention that:

- the existing water supply of the town is 80 LPCD which is being augmented to 135 LPCD,
- the maximum rainfall intensity of the town is 72.5 mm per hour,
- in total, no less than 14,845 households are going to benefit from the proposed sewer network,
- the diameter of pipes proposed are 110, 150, 200, 250, 300, 400, 450 & 600 mm,
- STP is designed for a capacity of 8 MLD considering 15 years design period,
- the type of treatment technology in STP used is MBBR (Moving Bed Biofilm Reactor).

We can wrap up this retrospective effort with *EUROPE*, where projects in favor of environment and renewable energies are obviously popular.

In SPAIN, TPF signed a new contract with the Guadalquivir Basin Authority relating to the public hydraulic domain and at the same time continued its technical assistance mission for the upgrade of the wastewater treatment plant serving the Autonomous University of Madrid (UAM).

At the same time, TPF has been commissioned by the **Guadalquivir River Basin** Authority to process draft Technical Reports on the authorisations 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 contract is worth one million euros and will run over a period of eighteen months.

TPF completed the work on the project to upgrade the **WWTP** that serves the **Universidad Autónoma de Madrid**. It should be noted that this plant treats the wastewater generated by the entire staff and student population at the University, and that, prior to the renovation works, penalties had been imposed by the Tagus River Basin Authority on account of the discharge of poor-quality sewage effluent. Our team of water engineering experts provided technical support during all the phases of the project, from the feasibility study stage through to the commissioning stage. The improvements required basically involved the upgrading of the existing facilities by transforming them into anoxic and anaerobic areas and the construction of another secondary sedimentation tank.

In PORTUGAL, Águas do Tejo Atlântico awarded TPF the international public tender for List of Works to Eradicate Wastewater Discharges of Águas do Tejo Atlântico - South Zone.

The provision of services aims for the eradication of domestic and industrial wastewater discharges, thus contributing to environmental rehabilitation and, consequently, for the improvement of bathing water quality in areas located downstream. These studies have an expected duration of one year and are extendable up to three years, and will focus on Cascais, Sintra, Oeiras, Amadora, Mafra, Lisbon, Loures, Odivelas, Vila Franca de Xira, Arruda dos Vinhos and Sobral de Monte Agraço municipalities

Portugal has a significant potential in the field of renewable energies. Projects and operations focusing on climate are increasing. They will contribute to the achievement of objectives of the government and the European Commission which aim to considerably increase the share of energy produced from renewable sources and to reduce greenhouse gas emissions.

EDP Renováveis entrusted TPF with the development of the Environmental Impact Study for **Cerca Photovoltaic Power Plant**, located in the municipalities of Cartaxo, Azambuja and Alenquer. This project, which will have an installed capacity of 180 MW and a total surface area of 541 ha, includes the installation and operation of photovoltaic systems and respective equipment, the installation of electric lines and the construction of a substation for 60/400 kV.

Also in the scope of renewable energy, TPF has developed

Wastewater treatment plant serving the Autonomous University of Madrid (UAM) / Spain

Wastewater treatment plant of Arraiján Est / Panama

Sulina Canal / Romania

several Environmental Studies for Photovoltaic Power Plants, namely for Coruche and Benavente, in “Lisboa e Vale do Tejo” region, for Elvas, Viana do Alentejo, Borba, Moura, Serpa, Tapada, Alpalhão, Fortios and Arronches, in "Alentejo" and for Alcains, in the "north of the country".

In ROMANIA, the group signed a new contract with Galati Lower Danube River Administration, AA for the Technical Assistance and Supervision of Works for the Project "River Banks Protection on Sulina Channel - Final Stage".

This project is part of the integrated strategy for the sustainable development of the Danube Delta, the largest delta in Europe protected by UNESCO since 1991 as an international biosphere reserve.

This work is necessary to ensure safe navigation regardless of the water level and to combat erosion and the instability of the banks, and prevent floods. We have been given no less than 99 months to complete our mission. •

CONSOLIDATED ACCOUNTS *2019*

Consolidated balance sheet / Assets
Consolidated balance sheet / Liabilities
Consolidated profit and loss account

Consolidated balance sheet / Assets

		2019	2018
	TOTAL FIXED ASSETS	**35,558,024.63**	**44,699,780.77**
I.	**Formation expenses**	**4,637,433.90**	**6,243,741.43**
II.	**Intangible assets**	**1,040,196.70**	**1,169,744.79**
III.	**Goodwill**	**16,218,132.11**	**17,495,580.15**
IV.	**Tangible assets**	**6,915,790.33**	**7,755,285.87**
	A. Land and buildings	744,182.96	2,027,239.05
	B. Plant, machinery and equipment	2,535,822.38	2,752,143.31
	C. Furniture and vehicles	2,191,616.73	2,356,369.29
	D. Leasing and other similar rights	0.00	0.00
	E. Other tangible assets	344,486.11	506,793.96
	F. Fixed assets in progress	1,099,682.15	112,740.26
V.	**Financial assets**	**6,746,471.59**	**12,035,428.53**
	A. Companies consolidated by the equity method		
	1. Participating interests	0.00	0.00
	2. Amounts receivable	0.00	0.00
	B. Other companies		
	1. Shares	2,539,096.11	7,788,214.47
	2. Amounts receivable	4,207,375.48	4,247,214.06
	TOTAL CURRENT ASSETS	**235,781,303.29**	**242,027,199.64**
VI.	**Amounts receivable after one year**	**1,350,382.83**	**1,538,670.31**
	A. Trade debtors	0.00	0.00
	B. Other amounts receivable	1,350,382.83	1,538,670.31
VII.	**Stocks and contracts in progress**	**44,981,358.45**	**46,266,694.46**
	A. Stocks	1,217,936.39	1,133,071.09
	1. Raw materials and consumables	73,781.24	73,918.48
	2. Goods in process	0.00	201,498.36
	3. Finished goods	227,114.28	312,282.14
	4. Goods purchased for resale	67,448.65	49,825.67
	5. Real property acquired or constructed for resale	0.00	0.00
	6. Advance payments	849,592.22	495,546.44
	B. Contracts in progress	43,763,422.06	45,133,623.37
VIII.	**Amounts receivable within one year**	**158,911,482.70**	**156,665,781.64**
	A. Trade debtors	118,773,675.70	121,843,390.99
	B. Other amounts receivable	40,137,807.00	34,822,390.65
IX.	**Investments**	**5,233,479.13**	**9,900,607.79**
	A. Owned shares	78,171.90	108.32
	B. Other investments	5,155,307.23	9,900,499.47
X.	**Cash at bank and in hand**	**14,174,077.09**	**16,650,116.65**
XI.	**Deferred charges and accrued income**	**11,130,523.09**	**11,005,328.79**
	TOTAL ASSETS	**271,339,327.92**	**286,726,980.41**

Consolidated balance sheet / Liabilities

		2019	2018
	EQUITIES	**54,719,578.04**	**52,863,649.57**
I.	**Capital**	**18,327,188.00**	**18,327,188.00**
II.	**Share premium account**	**0.00**	**0.00**
III.	**Revaluation reserves**	**356,542.84**	**356,542.84**
IV.	**Reserves**	**41,424,588.73**	**39,663,458.35**
V.	**Badwill**	**3,458,476.05**	**1,817,575.61**
VI.	**Cumulative translation adjustments**	**-8,847,272.84**	**-7,301,170.49**
VII.	**Grants**	**55.26**	**55.26**
VIII.	**Third Parties interests**	**9,504,205.87**	**15,249,891.88**
	TOTAL GROUP AND THIRD PARTIES EQUITIES	**64,223,783.91**	**68,113,541.46**
IX.	**Provisions and deferred taxes**	**3,350,791.64**	**3,741,981.57**
	A. Provisions for liabilities and charges	1,265,749.86	1,238,968.50
	B. Tax provision	216,207.72	137,297.30
	C. Important repairs and important maintenance	23,058.30	125,842.30
	D. Other risks and charges	1,871,008.54	2,264,842.97
	E. Deferred taxes	-25,232.78	-24,969.50
	TOTAL DEBTS	**203,764,752.29**	**214,871,457.23**
X.	**Amounts payable after one year**	**32,556,212.31**	**38,608,689.59**
	A. Financial debts	26,746,262.65	35,422,681.61
	1. Subordinated loans	7,535,714.16	0.00
	2. Unsubordinated debenturess	0.00	0.00
	3. Leasing and other similar obligations	41,359.99	42,320.06
	4. Credit institutions	13,494,467.51	21,081,590.04
	5. Other loans	5,674,720.99	14,298,771.51
	B. Trade debts	16,874.87	17,307.28
	1. Suppliers	16,874.87	17,307.28
	2. Other trade debts	0.00	0.00
	C. Amounts received for orders	0.00	14,600.19
	D. Other amounts payable	5,793,074.79	3,154,100.51
XI.	**Amounts payable within one year**	**169,198,721.33**	**174,274,433.07**
	A. Current portion of amounts payable after one year	16,567,629.43	43,075,438.59
	B. Financial debts	67,578,052.06	48,697,149.80
	1. Credit institutions	66,666,631.95	46,516,404.80
	2. Other loans	911,420.11	2,180,745.00
	C. Trade debts	38,690,658.19	37,157,248.44
	1. Suppliers	38,074,536.71	37,157,248.44
	2. Other trade debts	616,121.48	0.00
	D. Advances received on contracts in progress	6,622,094.36	2,571,949.40
	E. Taxes, remuneration and social security	31,861,552.48	32,704,800.08
	1. Taxes	18,425,423.62	19,520,819.62
	2. Remuneration and social security	13,436,128.86	13,183,980.46
	F. Other amounts payable	7,878,734.81	10,067,846.76
XII.	**Accrued charges and deferred income**	**2,009,818.73**	**1,988,334.72**
	TOTAL LIABILITIES	**271,339,327.92**	**286,726,980.41**

Consolidated profit and loss account

		2019	2018
I.	**Operating income**	**253,016,341.02**	**242,259,893.31**
	A. Turnover	248,069,817.34	227,246,485.82
	B. Increase ; Decrease in stocks of finished goods, work and contracts in progress (+, -)	-1,672,188.48	2,836,592.33
	C. Own work capitalised	0.00	0.00
	D. Other operating income	2,135,702.72	3,595,627.05
	E. Non-recurring operating income	4,483,009.44	8,581,188.11
II.	**Operating charges**	**234,724,010.62**	**223,873,581.73**
	A. Raw materials, consumables and goods for resale	50,699,179.02	50,827,831.33
	1. Purchases	50,756,010.07	50,851,294.56
	2. Stocks: decrease (increase) (+, -)	-56,831.05	-23,463.23
	B. Services and other goods	59,337,759.88	53,998,644.57
	C. Remuneration, social security costs and pensions	109,698,553.50	101,566,570.44
	D. Depreciation of and other amounts written off establishment costs, intangible and tangible fixed assets	2,113,044.79	2,276,766.80
	E. Amounts written off stocks, contracts in progress and trade debtors (+,-)	3,821,140.15	5,094,732.08
	F. Provisions for liabilities and charges (+,-)	287,163.06	-530,647.95
	G. Other operating charges	1,865,838.14	1,476,479.26
	H. Operating charges carried to assets as restructuring costs (+,-)	0.00	0.00
	I. Amounts written off on positive consolidation differences	0.00	0.00
	J. Non-recurring operating charges	6,901,332.08	9,163,205.20
III.	**Operating result**	**18,292,330.40**	**18,386,311.58**
IV.	**Financial income**	**7,221,177.25**	**6,679,702.47**
	A. Income from financial fixed assets	539,666.99	234,730.64
	B. Income from current assets	680,190.03	560,794.09
	C. Other financial income	1,422,434.91	6,037,986.63
	D. Non-recurring financial income	4,578,885.32	-153,808.89
IV.	**Financial charges**	**18,028,290.38**	**20,861,167.68**
	A. Debt charges	2,771,571.92	4,606,651.58
	B. Increase ; Decrease in amounts written off current assets other than those mentioned under II.E. (+,-)	773,444.05	2,359,824.15
	C. Other financial charges	9,883,194.17	11,329,180.46
	D. Depreciation of goodwill	1,794,411.34	1,865,511.49
	E. Non-recurring financial charges	2,805,668.90	700,000.00
IX.	**Gain (loss) for the period before taxes**	**7,485,217.27**	**4,204,846.37**
X.	**Transfers to and from deferred taxes and latent taxation liabilities**	**-708,198.73**	**-48,380.71**
	A. Transfers to deferred taxes and latent taxation liabilities	666,143.57	-24,994.82
	B. Transfers from deferred taxes and latent taxation liabilities	1,374,342.30	23,385.89
XI.	**Income taxes**	**5,032,819.32**	**2,108,488.38**
	A. Taxes	5,057,563.02	2,164,442.09
	B. Adjustment of taxes and release of provision for taxes	24,743.70	55,953.71
XII.	**Gain (loss) of the period**	**3,160,596.68**	**2,144,738.70**
XIII.	**Share in the result of the companies accounted for using the equity method**	**0.00**	**-1,710.43**
	A. Profits	0.00	-1,710.43
	B. Losses	0.00	0.00
XIV.	**Consolidated profit**	**3,160,596.68**	**2,143,028.27**
XV.	**Result of Third Parties**	**1,399,466.22**	**729,488.16**
XVI.	**Result of the Group**	**1,761,130.46**	**1,413,540.11**

TPF sa
Av. de Haveskercke 46,
1190 Brussels - Belgium
T. +32.2.370 19 70
F. +32.2.370 19 11
info@tpf.eu - www.tpf.eu

This activity report is also available in French, Portuguese and Spanish.
Printed in July 2020, chief publisher: Bernadette Petit. Design: www.designbysign.com