

EPC

# FOCUS

News on concentrated energy

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**EPC**  
GROUPE



## EDITORIAL / 2021

This tenth edition of FOCUS is in many respects a symbolic number. Since the anniversary edition celebrating our 125 years, profound changes have taken place within the group even before the world crisis came along affecting our lives and economies.

Firstly, an important internal reorganisation has positioned us to better serve our customers and to be more agile in our geographical development areas. The support functions have also been redesigned to strengthen the efficiency of the group and its technological advances. A rapid digital transition has irrigated our commercial offer, optimised our working methods and improved our performance.

The theme of this FOCUS is closely linked to the vision which has directed these changes. A new services strategy is taking the place of the one that made our reputation, and will differentiate us. You will see that our customers and our partners are already applauding our results.

In this troubled time, the mobilisation of the women and men who make up the EPC Groupe and who embody these strategic choices every day, has allowed us, and still allows us, to demonstrate a remarkable resilience.

Thanks to our high added value solutions, good practice communication or training, we have continued to support the extractive industries along with the works and demolition sectors, faced with new challenges to add to their safety, health, environment preservation and production issues.

The confirmation of the arrival of a new majority shareholder, the ARGOS-WITYU fund, demonstrates the confidence that inspires the strength of the group, its vision and growth prospects. In partnership with the expanded management team who have also invested in this project, we are creating the conditions which will enable us to achieve them.

As a symbol of this revival, the group has changed its Head Office. After 75 years at rue Galilée, EPC has moved to the Tour Initial, at la Défense, in an environment looking to the future ; an environment on the same wavelength as our new research, development and innovation policy. With a doubling of teams and budgets dedicated to these activities, over the next 5 years we will give ourselves the means to develop tomorrow's products and services.

It is with renewed energy, we continue to build on our unique services which has demonstrated its benefits in the recent pandemic and which will now be the pillar to support our future growth, and to serve our customers.

**Olivier Obst**  
Chairman and CEO

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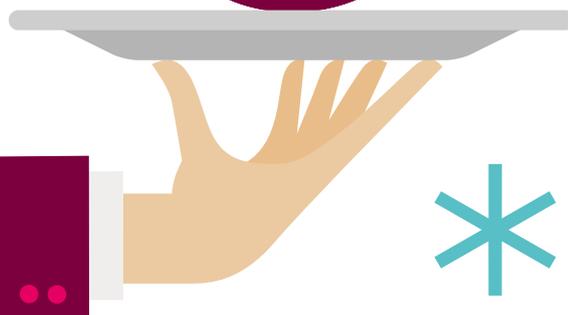
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**EPC Groupe** - Explosives and Chemical Products public company

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## CENTRAL THEME

## Working towards a better service



## Blasting 4.0 now available!

In less than two years, EPC Groupe has carried out an unprecedented digital transition, placing digital at the core of its drilling-blasting standard. A rapid revolution, for controlled and optimised blasting, thanks to a unique combination of factors. Report by Philippe Cappello, Director of Major Works

**BIM AS A STARTING POINT**

"At the end of 2015, I attended a presentation by the Bouygues Group of a digital model of a construction site located in Senegal. Completely digitised, the project could be understood as a whole and its data shared, enabling the various stakeholders to better schedule tasks, cleaning and maintenance (BIM 4D), and to better optimise costs (BIM 5D). This methodology, which has now revolutionised the world of public works, seemed to me to be obvious for the drilling-blasting sector, because it enabled working in project mode with all those taking part in a blast, including the customer."

**EPC FRANCE, A CULTURAL AND TECHNICAL MIX**

Instrumented blasting, work face scanners, Expertir® software... 3D culture has been at EPC France for over 15 years! Digital progress and the arrival of drones combined to enable us to make our vision a reality and to fully use this business data, essential for optimising explosive energy. In 2016, a partnership with what would become DELAIR encouraged the convergence of data to a

cloud-type platform. It provided our customers and teams with the possibility of communicating on the basis of real-time 3D models, helping decision-making for day-to-day site management.

Our teams were already trained in digital and information technologies so were easily able to assimilate this methodology. A proactive policy from EPC France enabled almost all blast managers to obtain their drone pilot licences, whilst an investment plan enabled the drone fleet to be expanded and a powerful IT infrastructure to be acquired, which responded to the needs required for processing and analysing images.

**BENEFITS FOR ALL**

Safety of personnel due to increased construction activity has advanced. The time taken for acquiring geometric data, critical for optimising blast plans, has reduced, whilst ensuring increased accuracy. Our European, African and Canadian customers who have benefited from these innovative services, both in mines and public works, have quickly been able to verify their benefits in terms of safety, productivity

(reduction in tunnel time cycles, for example) and carbon footprint. Drilling-blasting is obviously the determining link in the performance of the whole extractive process.

**DEVELOPMENT OF NEW SERVICES**

This digital transition has also enabled EPC Groupe to enter the remote engineering market. A tool that is consistent with the needs for reducing costs, for the productivity and acceptability of public works and extractive industry, but also with the new context created by COVID. This service for continual optimisation and improvement is based both on the digitisation of the operations (measuring before and after blasts, georeferencing the borehole, interoperability and ExperTab/UMFE connection) and on the convergence of data to our EXPLORE platform. A centralised unit located in France enables analyses to be carried out on this data that were impossible to achieve until now, remotely and in real-time, by using, in particular, developments in artificial intelligence.

**FROM THE VISION OF THE FUTURE TO THE FUTURE OF VISION**

Our next developments will enable our blasters to display the blast area, the borehole, charge plans and the associated sequences in augmented reality. The invisible made visible, in complete safety! •

# Euralpin Lyon Turin Tunnel: depth of service

Since 2006, EPC Groupe has been taking part in the largest modern European infrastructure construction site: the construction of a rail link between Lyon and Turin, known as TELT. A project on a grand scale, for which the international section alone, called the "base tunnel", measures 57 km for a minimum cost of 8.6 billion euros.

Over a billion euros has been committed for the construction of three access shafts in France (8.6 km) and a gallery in Italy (7.5 km). While they enable the techniques and costs for constructing the base tunnel to be accurately studied, these preparatory structures are an integral part of the project. They are therefore essential in both the construction and operational phases.

## A KNOW-HOW ACKNOWLEDGED BY ALL, OVER FOURTEEN YEARS

Involved right from the preparatory stages, EPC Groupe innovated by using some 800 tonnes of explosives with the

## 4.0 blasting to stay in the TELT!

MORSE system to excavate the Modane and then the Praz access shafts (7 km). It was all completed in January 2009. The works for the third access shaft (almost 2 km), called Saint-Martin-de-la-Porte, started in 2015 and are still underway due to the geotechnical factors and major convergences of the terrain. At the same time, a 10 km test section was constructed in the axis of the base tunnel, of which 9 km was excavated with the "Frederica" mole, with the remaining kilometre excavated with explosives. Thanks to its know-how acknowledged by the major French public works companies, EPC will construct 100% of the survey galleries on the French side using explosives. "Our customers appreciate the skill and professionalism of our teams led by Moctar Abdallah," highlights Philippe Cappello, Director of Major Works.

## NEW SERVICES FOR CONTINUING THE ADVENTURE

As Philippe reminds us, "We will be competing alongside our partners, with

our engineering solutions, for the next four lots that will be put out to tender in 2021-2022." For this they will base themselves on an expanded range of products and services developed by EPC Innovation and the Technical Division, that have now been perfectly mastered by our teams. So EPC has proposed a selection of four solutions to the five consortiums preselected for the underground works:

- Supply of pyrotechnic products, charge equipment and their supervision
- A blasting contract, without drilling, per m<sup>3</sup>
- A blasting contract without drilling, per m<sup>3</sup>, replacing the cutting detonating cord with a pumped emulsion in proportion to the diameter of the hole (string-charging)
- High level engineering with a commitment to the KPIs measured (monitoring the cycle times for example).

Innovative, complete and demanding, this final solution applies to all the methods and technologies of EPC 4.0 blasting. These potentially represent substantial benefits for our customers, especially in terms of progress, due to a shrewd optimisation of the explosive energy. •

## Digital makes its mark

A key element in blasting is the drilling which is also taking advantage of the latest technologies to increase accuracy for the benefit of the customer. When the m<sup>3</sup> blast areas are down to a few degrees and centimetres, this is "smart".

As Ricardo Chavez, EPC Groupe Technical Director sums up, "the drill plan, which means the way in which the energy will be geometrically distributed in the space, largely determines the success of a blast". In order to optimise this distribution, not

only must good measurement tools be used, but good drilling tools as well. On the measurement aspect, EPC has recently improved the algorithms of its Expertir® software. Calculated as accurately as possible, the drill plans obtained are now exported directly to a drill fitted with GPS navigation technology.

"The drill operator will find all the coordinates for the holes to be drilled. They will be accurately guided, regardless of the random features of the terrain, in order to obtain the best possible drill quality", explains Julien Janssen, Director of the EPC France Technical and Training Department. Guaranteed a better distribution of the explosive and so a better particle size, smart drilling is a new

asset that EPC offers to its customers in order to meet their performance objectives. After tests carried out by one of them in March 2018, this innovative service is being gradually deployed within EPC Groupe. •

## Optimised drilling for better controlled results

## New breakthrough for EPC-UK

EPC-UK has acquired the first SmartROC D65 (automatic and GPS) in the United Kingdom operating at the Whatley quarry, one of the largest in Europe. On the other side of the Atlantic, its subsidiary Kemek launched its new "Rock on Ground" service in spring 2019. Thanks to the acquisition of three latest generation drilling machines, it can now provide a complete range of services to its customers over the whole north-eastern United States. "Having our own drilling capacity has been a decisive stage in providing a turnkey service to our customers", stated Eoin Bartley, President of Kemek. •



→ Fragmentation, vibration, time... smart drilling wins on all points.



## Knowing what to do when things get hot

A source of potential danger in a mine is heat which can have several causes. One of them is chemical. Faced with this issue, EPC Groupe has developed an emulsion that guarantees safer operation for its customers.

### BEWARE OF REACTIVE ROCKS!

In a mine, several factors can explain the presence of a thermal anomaly. Fires starting naturally or accidentally can be seen in coal mines or all types of deposits rich in organic matter. Some anomalies in the earth's crust such as volcanoes or faults can also increase the thermal gradient.

### A bit of chemistry, a lot of service

Another source for raising the temperature: the chemical reaction between the mineral and the explosive. This phenomenon is mainly seen when sulphur blocks rich in pyrite are being mined. "The contact between these rocks and the nitric explosive will cause an exothermic reaction. If this reaction is rapid, the temperature can climb until it causes the explosive to detonate unexpectedly", states Michel Chiodi, Projects Manager and Training Geologist.

### THE RIGHT FORMULA FOR THE CUSTOMER

EPC Groupe has searched for a method to slowdown this exothermic reaction, taking into account that there is a risk from 55°C. "We are going to experiment on the chemical composition of the matrix by adding urea and other components. The aim is to gain a few hours so that we can charge and carry out a blast in complete safety," states Michel. Led by EPC Innovation, this research work started at the request of customers who were facing these issues. "We are working in an industrial process.

First of all we need to precisely define the gains made in safety and analyse the operating conditions on site in order to propose the best formula". After a series of conclusive tests in the laboratory, the new reactive emulsion, named TRAM9002RS, will be tested with certain customers, in Canada in particular. It will then be offered to mines throughout the world. •



→ Linked to volcanic activity, sulphur blocks are often at the source of gold deposits, as well as those of copper, lead and zinc. They are found in Canada, southern Spain and in Indonesia, just like this mass of pyrite found in the Nanisivik mine in Canada.



## Dilution: the less it moves, the more we progress

The movement of the rock during a blast causes the dilution of the mineral and, as a result, losses. Controlling this movement by limiting it and directing it as much as possible to ensure improved efficiency for a mine. True to its commitments to optimisation, EPC has been able to demonstrate its expertise on the subject with a customer from the Ivory Coast.



→ The Agbaou gold mine, the scene of several months of tests on better-controlled dilution.

move the rock as much as possible so that the customer could then process the targeted area only."

### MOVEMENTS DIVIDED BY THREE

Design of blast sequences, putting detonators in place, verifying results... the technical teams from the group and the African area visited the Ivory Coast several times. The tests there were conclusive. Only 25% of the 24 blasts carried out with non-electronic detonators complied with the

### Every metre gained is important

specifications regarding movement, whilst 70% of the 13 blasts with electronic detonators complied with them, resulting in a reduction of associated costs. With this accuracy, we should add a better fragmentation of the rock as well as an increase in the drill grid (fewer holes needed). Although the mine operator did not want to tell us about the gains associated with optimising the dilution, they were clearly satisfied with the engineering support service provided by EPC. Since the test phase, the whole mine has changed to electronic detonators and now uses our method. •

performance of one of our customers with tests in a real situation," remembers Ricardo Chavez, EPC Groupe Technical Director. As Yves Sarrey, Technical and Training Manager Africa explains, "the gold deposits have been clearly identified after surveys. We tried not to

Expertir® 3D is not just pushing back the boundaries of blasting. The software developed by EPC now includes a modelling method able to optimise the movement of projected materials using custom-made sequences and electronic detonators. "We offered to improve the



# Developing skills, a strategic issue

**As much a corporate culture as a desire to attract and retain talent**

Similarly, the group's technical departments train particular personnel in each area, who in turn train other personnel in each subsidiary. So skills flow through all of our teams, including the support services, guaranteeing a continual cycle of improvement in the level of our services throughout the world.

## EXTERNAL TRAINING: A SERVICE THAT IS REALLY TAKING OFF

Developing the skills and know-how of our customers remains a core issue and a completely separate service. Training their teams and maintaining them at the best level are the guarantees for a long-term business relationship. Our three training centres provide certified training courses, such as the Certified Blast Supervisor in France and the fully accredited nationally recognised suite of courses in the UK. Expert training courses (blasting expert, blast instrumentation, etc.) are provided in the UK, Africa and France. The pandemic has also accelerated the development of our remote learning which is today showing clear success. It is also through partnerships with Mining Schools (France, United Kingdom, Spain, Gabon, etc.) that EPC makes its skills development policy a reality. By contributing to training the sector's future professionals, the group is also pinpointing people who will enrich and then train our teams. The loop is closed! •



→ Javier Muñoz, former Director of EPC Spain, has held the post of External Training Coordinator since September 2019. His mission: to make EPC Groupe a global player in training for jobs in explosives.

Training, a subject that EPC knows well. With more than 75,000 customers and personnel trained over the last forty years, it is now part of the group's DNA!

### THE GUARANTEE OF AN EXCELLENT SERVICE FOR OUR CUSTOMERS

Technological developments, safety-related issues, respect for the environment and stakeholders, all demand continual updating of our skills and know-how. Training our personnel to the latest standards

guarantees our customers a high quality technical service. At EPC-UK this goes for both improvement programmes for management as well as training courses for operators simulating a quarry environment using augmented reality! Skill levels are subject to regular monitoring by a dedicated team of four assessors. At EPC France, regular seminars and technical workshops complete a proactive training policy. So our teams benefit from the group's latest innovations and international best practices.

# Maintaining the service, whatever happens

The Business Continuity Plan (BCP) was created from an initiative started in 2016. Its purpose: to honour our commitments to our customer, even in a crisis situation.



→ EPC Groupe is the first explosives group in the world to be Business Continuity certified.

Quality means reliability. As a trusted partner, EPC Groupe wanted to have an organisation able to guarantee its ability to maintain its level of service to its customers, regardless of outside events. Started in 2016, this procedure was structured in two stages. Firstly, to identify all of the business's critical processes. Then, to define appropriate action plans to reduce the risks, as well as scenarios for resuming activity in the event of a crisis.

"It is an essential issue that demands major mobilisation at all levels, starting in the field", points out Charles-Ernest Armand, Administrative and Financial Director.

### OPERATION COMMANDO

The Business Continuity Plan is based on an organisation in cells, some regional, others cross-functional if several areas are involved. They are made up of three or four permanent members who can draw on around fifteen key skills depending on the

### Plan for the worst to provide the best

situation. As Charles-Ernest states, "in crisis management mode, everyone knows what they have to do, it's very military! The aim is to anticipate as much as possible so as not to be overwhelmed when an event happens." And that it does not happen to other people... Whether it is during the fire at the packaging products warehouse in Saint-Martin-de-Crau or an IT bug in the traceability software, or more recently

from the start of the pandemic, the BCP has enabled EPC to honour its commitments in the shortest time. "It's an improvement to the service that may only be visible when a crisis happens. And still, the objective being that everything is transparent to the customer", sums up Charles-Ernest. As recognition, there is the ISO 22301 Business Continuity certification, the first one in the world obtained due to Olivier Obst's wish to build a certifiable procedure. The latter has been able to prove itself during the Covid-19 crisis (see pages 10-13). •

## + Third party storage: EPC is filling up



Since 2018, developing the service at EPC Groupe has become a reality through a complete storage service for pyrotechnic products that are part of a logistic solution for other companies.



→ Up to 29 regulated and secure spaces for storing containers from third party companies.

Fifteen hectares at the Saint-Martin-de-Crau site have been set aside for the construction of an additional storage area for pyrotechnic products. "The site's capacities are such that we can now consider it as a real logistics hub for the EPC Groupe", said a very pleased Laurent Casagrande, EPC

Groupe Industrial Director. This is also good when faced with the growth of our exports! Combine this new storage area with the installation's production capacities, and that is what is going to provide us with a certain competitive advantage!

### STORAGE... AND MUCH MORE

Thanks to this new logistics force, it is now possible to provide storage services to third parties whose products are compatible with those of EPC. Accessible, efficient, secure... and not very far away, this type of service has quickly led to a strong demand in the small world of pyrotechnics, which has rapidly noticed that it is

### A complete, efficient logistics solution

economically attractive. A new activity brings responsibilities, and we have had to change our working habits, even questioning some of our procedures. As Laurent explains, "It's a blessing in disguise. Thinking about new products or services and new working methods generates a dynamic around safety, or even optimising tasks." Suffering from lack of storage, EPC France's industrial site has now been able to seize this opportunity to generate value. •

Working towards a better service

## The cubic metre as a unit of value

It is now over 25 years that EPC Groupe has been doing much more than producing quality explosives with a drilling-blasting service. The rapid development of blasting services with a blast area measured in cubic metres now makes the difference.

The first time the group diversified was back in 1993 with the DGO M3 subsidiary, specialising in drilling and blasting. Olivier Vandenberghe, who was one of its craftsmen, saw this desire to develop such a service strengthen over the years, in all areas where the group has a presence. One of the latest to date: the creation in 2019 of a separate subsidiary in the Ivory Coast with human and material resources dedicated to the use of explosives. For the Director of the EPC Groupe Africa area, Jean-Jacques Koua, "This additional service means that the customer no longer has to worry about any drilling-blasting problems, especially if they are

in an isolated location or a site without any machinery."

### SENEGAL, TEXTBOOK CASE

When Mineex was created in 2011, the company was mainly an explosives distributor. In the space of eight years, many changes took place, all of them relating to developing the level of service. The first became a reality in 2013 with the construction of a depot enabling the storage of buffer stock on site. Training their personnel in the use of explosives on behalf of customers who already had drilling machines was the second phase. The creation of a complete drilling-blasting service followed after the arrival of drilling machines and Mobile Emulsion Production Units which started in the very same year in 2013! Today,

### The blasting service guarantees results as well as strengthening partnerships

data processing. "This has enabled us to commit ourselves to operational plans for several years. This type of service provides the customer with an accurate view of the volumes expected in the long term and anchors us in a sustainable partnership," says a very pleased Rokhaya Sall Mbaye, Managing Director of Mineex. •

Mineex goes far beyond its customers' expectations by providing them with access to all the latest technologies in drone surveys and

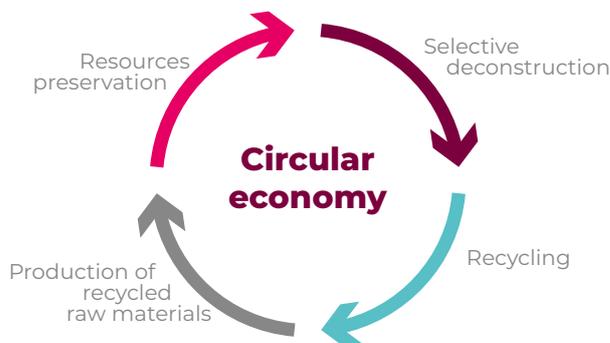


## In Italy, EPC has freed itself from the price war

Éric Krolop, Major Accounts Manager, is pleased with the turn taken by the Italian market: "Faced with a competition based solely on price, we have decided to change EPC Italy from a wholesale company to a services company providing the maximum added value for its customers." To do this, the subsidiary has promoted integrated drilling-blasting solutions and cutting edge technical support, making the most of the group's expertise, represented here by Mathieu Lachamp. Productivity, savings, safety, respect for the environment... this is what EPC Italy now offers as part of its new services based on the search for innovative, tailor-made solutions. Congratulations to Calogero Lo Piccolo and his team for the success they have already had! •

# Demolition for building a new service

From 2020, 70% of construction waste should be recycled. An obligation set by the energy transition law that EPC Demolition anticipated several years ago by becoming involved in a new circular economy dynamic.



## TRANSFORMING THE WASTE PROBLEM INTO A RESOURCE

Just like our company, the construction sector now has to make compromises with major environmental issues. With the vast experience of its various subsidiaries, EPC Groupe's demolition division has made waste management a separate activity. Sorting the various materials, transporting them to the correct channels, reusing them by transforming them into secondary raw materials, etc. are just a small part of the know-how needed. "Waste has become a resource at the centre of a circular economy that goes beyond recycling", sums up Claude Chéné, Director of the Demolition Division. In this way, concrete is reused as a construction material, metalwork is sent to the steelworks and timber is transformed into chipboard or boiler fuel. The same goes for plaster, PVC, etc. So much waste from demolition that EPC is able to reuse through ever more elaborate

## Controlling the recycling channels and processes is a new way of differentiating ourselves

technical solutions, in response to a customer's request or by offering an additional service.

### A SERVICE THAT DIFFERENTIATES

Today, reusing waste is an opportunity to set ourselves apart, both for the customer and as a service provider.

As Claude reminds us, "We can go beyond the legal obligations in a win-win situation. By optimising our reuse and processing channels, we will optimise our service and so help the economy of the construction site." A proactive approach that will enable the cost of waste to be reduced, especially due to providing services that sort and reuse materials on site. This control of recycling channels and processes has led to numerous customers, both public and private, having confidence in EPC Demolition, who wanted to make their construction site a shop window for their commitment to society. •

## A very selective service



”

"EPC Groupe's demolition companies have decided to move towards selective demolition. This consists of removing the facings and surfaces of buildings before sorting the waste into the various types for sending to the correct reuse channels. This approach enables structural materials such as concrete to be stripped down and then crushed and screened to produce a recycled aggregate that can be used as backfill or in the production of concrete. Each year, 2B Recyclage produces 300,000 tonnes of recycled concrete aggregate, mainly from the group's demolition sites." •

→ **Gwénaëlle Croiser**  
2B Recyclage Director

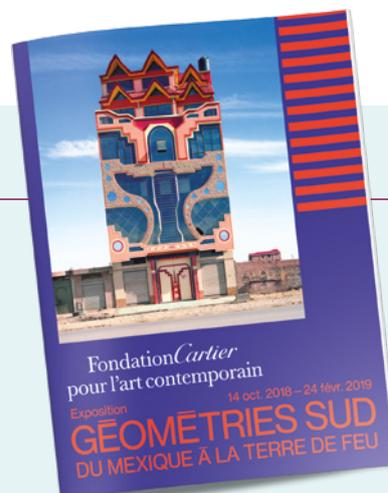


**NEWS** / Safety

## Materials for art

At ATD, demolition is an art form. But did you know that materials from these demolition operations were sometimes reused for artistic purposes? This fairly rare form of reuse is the result of a partnership with the Fondation Cartier Pour l'Art Contemporain. As part of major renovation works right in the centre of Cergy, ATD has carried out the

meticulous demolition of a social-cultural centre, from which some of the materials were made available to artists. Their creations were exhibited amongst almost 250 works as part of the exhibition called South Geometries, from Mexico to Tierra del Fuego, organised in Paris from 14 October 2018 to 24 February 2019. •





**COVID-19**  
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# COVID-19: FACE MOVING FORWARD

## The art of combining Good Practice with a positive attitude and a spirit of Collaboration

At the end of January 2020 the epidemic seemed far away and we weren't talking of a pandemic. And then very quickly the wearing of masks, hydroalcoholic solution and other Personal Protective Equipment (PPE) hit Europe full blast. We had to react and adopt new reactions.



Being an international group, first of all we had to wait for the different countries where we operate to provide their respective requirements for sanitary equipment. An exhaustive list formalising and quantifying the requirements of every subsidiary was then drawn up. "We searched for the right channels for each item of equipment. Added to the difficulty in obtaining supplies through our normal channels were the PPE requisitions from some of our subsidiaries. This accentuated the scarcity" confides Thierry Rousse, Safety Health & Environment Director.

**IDEAS TO AVOID BEING LEFT SHORT**  
In addition to the group's bulk ordering, various local initiatives were added such as making masks or the manufacture of hydroalcoholic solution at the Saint-

Martin-de-Crau site at the start of the crisis. A number of subsidiaries also managed to supply themselves with PPE in the initial weeks thanks to knowledge of the local economy. Certainly stocks were very limited, but they never prevented us from carrying out our tasks! "We put a procedure in place to avoid finding ourselves short of stocks. In mid-April we could already see it coming" congratulates Laurent Casagrande, Industrial Director.

**Mid-April,  
a sufficient stock of  
PPE was built up**

**100,000 masks  
were ordered**

# WORK TOGETHER, LEARN TOGETHER

## Good practice at the heart of all the exchanges

### GOOD PRACTICE

If PPE plays an essential role in terms of safety in the face of Covid, its good use as well as the adjustment to our daily routines is also important. The pandemic has made us adopt new procedures formalised in good practice guides, which are regularly updated. Reflecting the multiple exchanges at SHE and area operational level, the first guide was distributed at Group level at the end of February. It was very quickly adopted and adapted by our various subsidiaries whose sites were impacted. The sites and activities were able to benefit from best practices and experience shared globally. By implementing these tried and tested methods these initiatives contributed to maintaining our activity by efficiently fighting against the spread of the virus. •



→ Re-use of hydroalcoholic solution containers (EPC Italy).



→ Cartridge masks in individually marked boxes for drillers (EPC France).



→ Automatic temperature checking (Kemek).



→ Extension operated by the elbow (EPC Spain).



→ Each monthly HSE bulletin is an opportunity to share good practice.



→ Hand cleaning using a pedal pump (EPC Guinea).



**COVID-19**  
EVERYONE  
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MOBILISED



→ In Quebec, the pandemic did not prevent us from investing in new equipment.

# KNOWING HOW TO ADAPT TO MAINTAIN ACTIVITY

The health and safety of all our colleagues is the Number 1 priority within the EPC Groupe. The second being to guarantee the pursuit of our activities across the world in the best conditions. Two objectives that we have been able to achieve thanks to the efforts of everyone and a very agile organisational structure.

## EXEMPLARY BEHAVIOUR

From 6th March, remote working (working from home) measures were implemented for all employees with that capability. Due to the smart IT investment and reaction of the IT Team, almost 300 people in the group were able to continue to work from their home. "The crisis accelerated the establishment of remote working and

the natural use of its tools. It also proved that it is robust and sustainable for the future" recalls Thierry. This ability to adapt has been seen in changes in working hours, flexibility in vacationing... there have been so many individual contributions made for the benefit of everyone, which Mr Olivier Obst has continued to stress and encourage on this spirit and its the importance to the sustainability of the group.

## FROM BCP TO REALITY, IT IS JUST ONE STEP

In page 7 of this FOCUS we discuss the Business Continuity Plan and the organisation it involves, often using simulation to create the plans. With the Covid-19 crisis, the BCP has very quickly become reality and immediately proving its value. Organised around six themes (see



→ A virtual safety talk (Marodyn) like so many others.

**Being isolated has enabled us to work together like never before**

below), crisis management procedures comprises approximately 80 measures, precisely allocated and clearly defined in an action plan. "This reorganisation was written as we lived it" remembers Laurent and Thierry. Both of them were part of small strategic virtual committees, led by Olivier Obst himself, whose focussed

**If another crisis happens tomorrow we will know exactly how to react**

configurations ranged from 3 to 12 people, depending on the subject. Finance Director, Development Director, HSE Manager, Industrial Director, HR Manager, Area Directors ... rarely have such varied roles been brought together around the same theme, even from a distance. "At the height of the crisis, exchanges were taking place twice a week for an hour maximum. This efficient management was also adapted at local level. The subsidiaries quickly closed ranks" congratulates Laurent. These new working relationships have clearly fostered more rapid decision making and more efficient information sharing. Add to this, the establishment of numerous monitoring indicators, analysed and shared across the group.

**DECENTRALISATION AND ACCOUNTABILITY**

The pragmatism we have shown in the management of this crisis has made it possible to formalise proven actions that we can use again. As Laurent resumes "we have established a method of analysis. If we aren't there to remember it tomorrow, then we have established a formal corporate memory for the future generation." But more than consolidating our procedures, this crisis has also developed our way of working. The development of distanced relationships had led us to frame our exchanges better for more efficiency and sharing. Systematic briefing-debriefing by telephone or mail, by video-conference between departments,

regular information sharing ... enables us to communicate from a distance whilst maintaining the connection between everyone. The restriction of physical travel at corporate level is also an opportunity to enhance the value of our local teams with the decentralisation of certain tasks. Audits and inspections rely more on the involvement of subsidiaries to provide feedback. "This accountability is an opportunity for the subsidiaries to progress further alongside us. The information which they send us is rich and reflects the company's safety culture" congratulates Thierry. And to conclude "anything that can shake up habits is good." •

**Crisis Management in 6 themes**

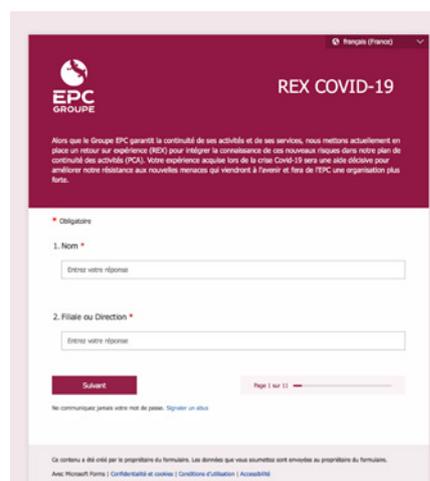
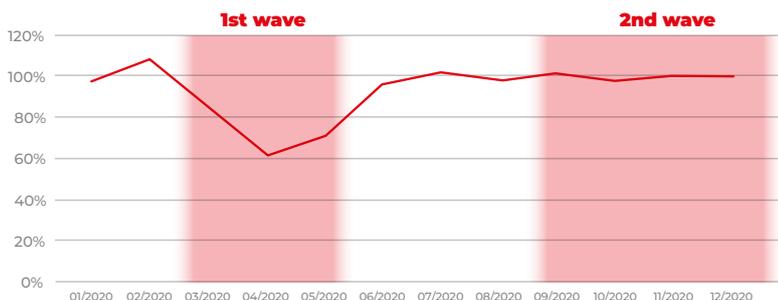
- How to manage the crisis
- How big and how to limit the crisis
- How to prepare for re-opening
- What is tomorrow's normal
- How to stay in time
- How to prepare for the next crises

**Business : maintain ... and bounce back**

Our group has demonstrated good resistance to the crisis. After a downturn in activity of almost 40 % at the height of the confinement in April, EPC has seen its activity re-start this summer in a very positive way. The 2020 year end is well positioned despite the second wave of the pandemic. In fact, it has impacted our activities on the sites less, thanks to the implementation of new protocols. The mining market still remains dynamic and resilient

In order to be prepared for any eventuality, the group turned to support measures implemented by the States in our different operating countries when it was necessary. A Loan Guaranteed by the State (PGE) for a sum of 18 M€ was granted to the group. The Banque Publique d'Investissement (BPI) also decided to support EPC with a loan of 5M€. These two lines of credit will enable us to pursue our technological and geographic development programme. •

**Real activity in comparison with that expected at the start of 2020**



→ Amongst the BCP Actions : to obtain feedback from all employees to learn as much as possible from this crisis

## Film it for a better record

It has been a long time since cameras on telephones used to produce a load of unreadable pixels! Nowadays our smartphones film in high definition with a very good quality result. And as we always have them in our hands, why don't we use them for communicating about safety in a different way?

Thierry Rousse, Health, Safety and Environment Director EPC Groupe, made this observation in 2016 after finding out about a training course for African journalists about making short videos on their smartphones.

"I said to myself that this was exactly the type of approach that we could adopt for dealing with safety", Thierry recalls. Good practices, feedback, statements, reports on risk situations, presentation of a new device, etc. There are no end to the subjects that are worth filming.

### CONTROL THE COMPOSITION, OUTSOURCE THE EDITING

Once the initiative was sent out to the group's various subsidiaries, the first stage took the form of a training course for employees who wanted to take part in the adventure. No need to be a geek, or an expert in high tech, you just needed a good smartphone! The aim of

**Almost 100 Easymovie videos have been produced since 4 October 2018**

the course was to teach the basic rules about composition and settings. Since August 2016, six collective sessions have been organised, to which over the last twelve months 25 personalised remote support sessions have been added. "The initial results were not

long in coming. But the editing stage remained under pressure", remembers Thierry. In February 2018, he met a service provider at a mobile phone video exhibition. The decision was taken to outsource the editing. The aim: to simplify the procedure whilst standardising the result, where "each video is made with an identical appearance that complies with EPC Groupe's graphics charter."

### VIDEO FOR COMMUNICATING MORE EFFICIENTLY

After having been validated by Thierry Rousse's team in agreement with the Marketing Department, the videos became tools for promoting safety which could be distributed within the group. As Thierry happily says, "It has become a standard with us. There is no Executive Committee where an Area Director does not play a video.

It is a much more powerful medium than paper and has more impact." It is true that a sequence of two or three minutes will always be better retained and applied than a procedure of several pages! Even if a hundred videos have already been produced, the story is only just beginning. As Thierry states, "We need to have more regular productions." Take up your smartphones! •



Traiter un risque de pollution : Les bonnes pratiques



→ Sequences produced by EPC employees and edited by an external service provider.

## State-of-the-art emulsion factory for EPC-UK

On 20 March 2019, Olivier Obst, Chairman and CEO of EPC Groupe, opened EPC-UK's completely new bulk emulsion production unit. The largest investment of the British subsidiary over the last 25 years, this ultra-modern facility distinguishes itself by its high level of safety complying with the latest international standards and the group's requirements. Optimum ergonomics are combined with an ease of use. This is how we can offer top flight production performances, for both deadlines and volumes, for emulsions to be used for both surface and underground applications. •



## Ready for a new gold rush!

Who could have foreseen that Canada would produce more gold than Peru? The figures speak for themselves: in less than ten years, production has increased by over 80%. A seam that EPC Groupe could not pass by!

For Canada, the start of the 21st century marks a new gold rush. It has become a reality by a significant stage for prospecting and modernising the old sites, followed by them all being put into operation. Since

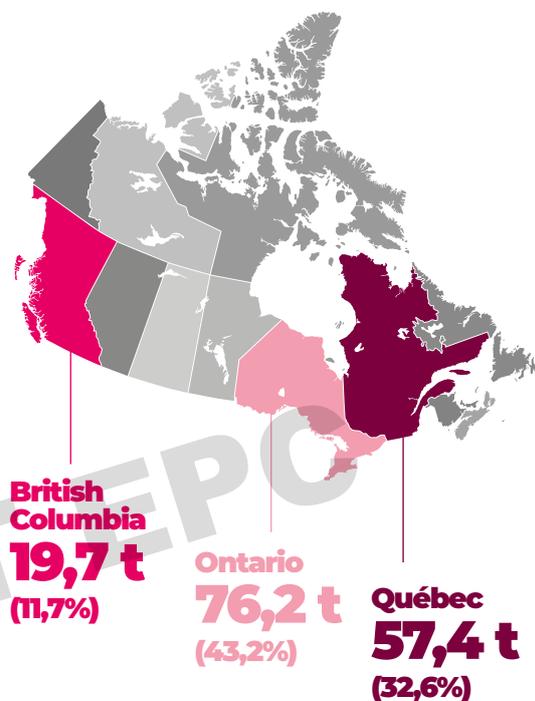
**EPC Groupe is continuing its mining adventure in Canada, the 5th largest producer in the world.**

then, production has only increased, going from 97 tonnes in 2011 to 176 in 2017. "This trend should be maintained, thanks to satisfactory exchange rate and new mining projects coming into production", explains Michel Chiodi, Projects Manager EPC Canada.

### A SCENT OF EL DORADO IN EASTERN CANADA

EPC Canada, whose factory is near to the Kirkland Lake area in north-eastern Ontario, is located in the centre of the main gold production area, where the mines are mainly operated underground. Several initiatives have been undertaken to make the most of this new gold rush, starting with a new production line being set up. The range of products and materials has also been increased, especially with the arrival of underground bulk loading equipment and explosives suitable for reactive rocks (see p.6). But as Michel emphasizes, "Above all the difference will be in mining engineering and the group's recent technological advances." •

### 3 provinces for 87.5% of the production



## Diesel additive: adding an asset

Explosives and chemistry are closely linked. And like a combustion engine cannot work without an explosion, EPC Groupe has naturally established itself as one of the global players in the production of fuel additives.

In the previous issue of this magazine, devoted to the history of EPC, we mentioned the central role chemistry plays in the manufacture of explosives.

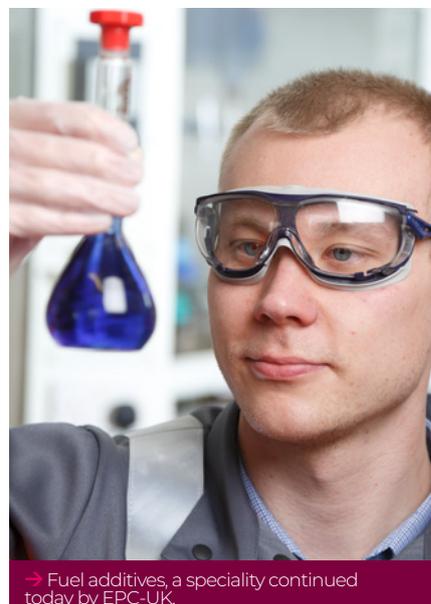
**180,000 t**  
**of 2EHN products in 2019**  
**3,600,000**  
**tonnes per day of diesel**  
**consumed worldwide**

Over several decades, EPC has been producing nitroglycerine for manufacturing dynamite. In the 1980s, the development of this technology gave rise to a chemical compound with the lovely name of 2-ethylhexyl nitrate or 2EHN. This is an additive, which when mixed with diesel will enable the fuel's hexadecane index to be increased, improving its combustion, amongst other things, and so its output. This product has made EPC Groupe a major player in the global market, supplying both the major petroleum groups and other manufacturers of additives. In 2019, of the 180,000 tonnes of 2EHN produced in the world, around 30,000 came from the production units of EPC Groupe.

### FUELLING INNOVATION

Although the diesel car fleet is gradually reducing, utility and heavy goods vehicles are still continuing to use diesel. Faced with ecological and economic issues, fuel efficiency has become a major factor for differentiation. "Over the last ten years, we have developed a technology for collecting and stabilising sulphuric acid residues emitted during the production of 2EHN. It's a real plus for the environment", says Michelle Miller, Manager of the EPC-UK Bramble Island

site. With regular growth of the market, the emergence of biodiesel and other by-products from petroleum products and the global desire to raise the minimum hexadecane index bring so many opportunities for EPC to ensure the future of this historic product! •



→ Fuel additives, a speciality continued today by EPC-UK.

## Billy-Berclau: natural rehabilitation

In 2003, a tragic accident caused the deaths of four employees in Nitro Chemistry at Billy-Berclau, one of the group's historic facilities. When the factory closed its gates two years later, the question over the site's future remained. A future for which EPC Groupe would commit itself until a long-term consensual solution arose.



→ The rehabilitation project will pay tribute to this major link in the local mining industry.

Created in 1900, the Billy-Berclau factory helped the development of the mining basin in northern France. Employing up to 300 people at the height of its activity, it supplied the whole group with dynamite and gave rise to several technological innovations. Despite the complete stoppage of activities in 2006, EPC remained the owner of the property in order to best manage the land and environmental issues. "The group made it a point of honour to assume

its responsibilities until the end", remembers Charles-Ernest Armand, Administrative and Financial Director.

### MAKING THE SITE CLEAN AND SAFE

After carrying out the dismantling of all the facilities associated with dynamite production, EPC appointed a specialist company to set up a system for identifying and monitoring pollution. As Charles-Ernest Armand explains, "The activity on the site was not very polluting, it was mainly based on nitrate, which is basically a fertilizer." Surveys show the absence of heavy metals and some very localised pollution of hydrocarbons and nitroglycerine. There was little asbestos present, as most of the buildings were constructed before the appearance of this material. The clean-up will be accompanied by permanent security guards with regular maintenance of the fencing and surrounding area "to

**Although closed, the Billy-Berclau site has never been abandoned**

prevent the site from becoming a no-go area". Whilst waiting for the right buyer, vegetation gradually took hold of the premises...

### PROVIDING A NEW FUTURE FOR THE SITE.

The enclosed nature of the premises which are not very accessible, as well as the existence of a large industrial estate located on the other side of the town, did not make it popular with any industrial buyers. Discussions with the local council of Billy-Berclau carried out by EPC's property manager at the time (Jean-Pierre Droulers) quickly brought out the idea of developing a space linked to the green spaces of the Hauts-de-France region. "The community of the Béthune-Bruay Artois Lys Romane urban area approved the council's plans. Several options were studied, such as the development of activities that have little effect on the environment, camping and caravanning, sports facilities, a solar farm...", states Charles-Ernest Armand. With around fifty hectares available, the large-scale project is mobilising all of the local authorities concerned. The local Public Land Management Authority has been authorised to buy the land and to complete the demolition of the existing buildings. Since June 2018 EPC no longer owns the site •

## Saint-Martin-de-Crau running at 4.0

Our historic production site in France has been the subject of major investment with the integration of a 4.0 Lean Manufacturing process. Safe and of a high quality, this new process will be accompanied by an increase in the operators' skills in order to cope with even more order volumes

whilst optimising our production costs. A 125-year old olive tree was planted by Olivier Obst in the presence of all the site's employees and operators. The opening ceremony was then the opportunity to share some convivial time around a meal. •





NEWS / Business

## Asbestos: storage and prospects

2B Recyclage, a subsidiary of EPC Demolition has acquired the Amoveo site located in Saint-Martial-de-Gimel near Tulle in the Corrèze region. This former quarry, whose aggregate was used in the construction of the A89 motorway, has become a facility for storing asbestos waste, such as asbestos cement and asbestos coatings. Since being taken over by 2B Recyclage, the site has increased its annual storage from 1500 tonnes to 4300 tonnes. A growth which conveys EPC Demolition's desire to develop a local solution for its asbestos removal customers and their various companies. With a total capacity set at 200,000 tonnes until 2036, the new facility at Tulle is in pole position to satisfy these needs. •



BUSINESS / Peru

## Engineering as a trigger for development

Always quick to differentiate itself, EPC Groupe has not waited for the finalisation of its Peru subsidiary's administrative procedures before promoting its technical expertise on this competitive market with strong potential.



→ Edwar Moreano, Technical Manager, and Armando Picoy, Operations Manager, are making EPC's technical expertise more accessible in Peru.

The result of a joint venture with the local partner IESA, EPC Andina is consolidating its facility on Peruvian soil notably with a project to create two factories. "The market here is very tough to penetrate, but it has a strong potential for development with the presence of numerous mines of all sizes", highlights Olivier Vandennabelle, North and Latin America Director. For EPC Groupe, it is not a question of waiting for ANFO and the grid to come out of the local production units before entering the scene. A small team has been set up with two employees being taken on. Edwar Moreano, Technical

**Differentiate ourselves by proving the efficiency of blast engineering**

Manager, and Armando Picoy, Operations Manager, have the mission to promote the local company EPC Andina, illustrating the high level of know-how acquired by the group. As Olivier explains, "Firstly we want to position ourselves at the front with our technical expertise in the blasting sector and then offer solutions linking our products to this."

### A MINE FOR EXCAVATING THE DIFFERENCE

EPC Andina's Technical Assistance Department has started to prove its worth in the Pallacanta underground mine, owned by the Hochschild group,

a customer of IESA. Objective: to demonstrate the blasting engineering support in operational terms and to set up a production monitoring service with an information exchange and data processing platform. Numerous tests have been carried out between 2018 - 2019, with a key factor of enhancing the database and conclusive results relating to optimising the operations. How to convince the customer to quickly set up a contract for a support and audit service! "This work has enabled us to gain legitimacy. EPC Andina will concentrate on underground mining, but will not ignore open cast mines or public works construction sites, if the solutions proposed provide added value", Olivier told us. As everywhere else, for EPC Groupe technical expertise is a key factor for entering new markets. •



→ EPC Andina will defend our development strategy on the Peruvian market with a complete range of services, and expertise, as we have done here at the Perumin trade show!

# The first time in Belgium: EPC master of the wine store

EPC Groupe's experience in underground matters and has crossed over France's borders. So nothing surprising in that one of our Belgian customers has called on our services. Except that here, the site consisted in excavating a wine store for a new vineyard.



A unique project of its type, due to an excellent partnership between EPC Belgium and EPC France. "There has been a true synergy. We have taken charge of the whole administrative part. As for EPC France, they have carried out the drilling and used the explosives", explains David Jacquet, Managing Director EPC Belgium.

### TWO WEEKS AT A VERY TECHNICAL WORKSITE

The construction of this special type of room had to include the presence of an electricity pylon located directly below the cliff to be excavated, as well as the proximity of a water course and a working towpath. "Philippe Cappello and Moctar Abdallah decided on non-electric detonators,

set off remotely using a ROBIS. Each blast had a round of around 100 holes with charges adapted to the blasts", said David. With progress of 2.5 metres per day, the customer decided to increase their objectives, going from a room of 25 metres

to 35 metres. Eight metres wide, six high, the room was completed on

The Calcaires de la Sambre have now been working with EPC Belgium for over ten years. Just above this quarry, where 100% pure rock is extracted, the owner decided to plant vines as part of the rehabilitation of the site: this is the Blanc Caillou vineyard. And to complete the process, it was decided to excavate a wine store in the rock to convert future harvests into wine there.

**Belgium is well-known for its beers. With EPC's help, it will also be well-known for its wines!**

**35 m excavated**  
**102 holes per round**  
**200 kg of explosives per blast**  
**14 blasts**  
**3700 tonnes of rock**

7 March. It was even blessed by the dean of the Landelies church. With an ideal temperature of around 14°C, this unique store in Belgium has all the necessary features to welcome its first harvests planned for 2021. •



→ The EPC France teams in synergy with EPC Belgium.

## Safety rewarded again !



That's twice! EPC-UK has again received the prestigious MPQC prize dedicated to promoting safety, during the Health and Safety prize-giving by the MPA (Mineral Products Association). It rewarded its Commit to be Fit programme and its commitment to safety.

The first company to receive the prestigious award twice, EPC-UK has distinguished itself by the encouraging results of this programme which is aimed at improving the health and well-being of its personnel, both at work and at home. Especially intended to encourage more active and healthier lifestyles, Commit to be Fit has been one of the company's priorities since its launch in 2016. •

## Awarded Businesswoman of the Year!

Rokhaya Sall, director of our Senegalese subsidiary Mineex, has received the Businesswoman of the Year award at the Hub Africa Awards.

The seventh edition of this major international event awarded the

Managing Director and founder of Mineex, a subsidiary of EPC Groupe established in Senegal.

"I am making progress in a fairly unusual sector for a woman. This award shows that only knowledge and know-how are guarantees for success. Whether you are a businessman or a businesswoman, the problems you have to deal with are the same!" says Rokhaya. As well as the happiness and honour brought by this award, during her speech the young leader highlighted the challenges women in Africa have in accessing education, schools and literacy.

This award shows us that willpower and enthusiasm are real factors for making the difference, whether you are a man or a woman! •



→ One of Rokhaya's challenges for her business was obtaining the three certifications for managing quality, the environment and safety!



## Olivier Obst, new Chairman of SFEPA



On 26 September 2019, during the celebrations for its 100th birthday, the French Association of Explosives, Pyrotechnics and Fireworks Manufacturers (SFEPA) announced the election of Olivier Obst as their Chairman from 1 January 2020. He succeeded Jean Midoux who had been in the post for four years. An election that highlights EPC Groupe's involvement, an active member of the SFEPA for over 80 years, as well as the dynamism of the association. •

## Sport, work and well-being for women!

At the time of the last edition, ten female employees of the Paris headquarters took part in the Féés du Sport event organised for the International Women's Day by the French Federation for Corporate Sport (FFSE). And 1 and 2 and 3 and rest!

Well-being at work is one of the objectives of our health, safety and the environment policy. Annick Fournier-Guihard, who represents the headquarters at the HSE committee, was looking for a way to respond to this objective, inspired by EPC-UK's "Commit to be Fit" programme. "I had noticed that a lot of people at

the headquarters were taking part in a sporting activity. I was looking for a collective way of exploiting that", remembers Annick. The solution took the form of an induction afternoon organised by the FFSE, a Federation that has been approved by the French Ministry for Sports. Annick put the idea to fifteen women working at the headquarters. Eleven immediately agreed. "The women taking part were of various ages, with various jobs and from different departments. The feeling of dynamism and togetherness was immediate", says Annick.

### SPORT AND MUCH MORE

Bringing around fifty participants together in a gym in the 5th arrondissement, the event took place over six workshops of twenty minutes. "Zumba, laser shooting, badminton, touch rugby, self-defence and fencing, whatever the discipline and level, it is all done collectively", says Annick. A good experience for women under the title of sport and an enthusiasm which should not be shortlived. •

### When health at work joins up with team spirit





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