

# Le Minorange

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BOUYGUES GROUP INTERNAL MAGAZINE

BOUYGUES



## BOUYGUES' TOWERING PROJECTS IN MANILA

➔ BOUYGUES CONSTRUCTION

SPECIAL FEATURE

SPORTS AND MAJOR EVENTS

SPECIAL FEATURE  
PASSING THE BATON AT THE OLYMPIUM

➔ BOUYGUES IMMOBILIER

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**THE LATEST NEWS FROM THE GROUP AT YOUR FINGERTIPS!**

Read news about the Group and its business segments on *Challenger Express* via:

- **The app** on iPhone and Android. Download it from your company store.
- **The non-stop news site** (access via VPN) <https://challengerexpress.bouygues.com/>
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**THE MINORANGE BONUSES**



You can find the Minorange Bonuses on YouTube

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Unsurprisingly, in line with last year, the economic and geopolitical environment in which the Group operated in the first half remained complex and uncertain. Flaring tensions in the Middle East drove up the price of oil, while global sanctions on Russia sent prices of metals higher. Regardless of that, the IMF's global economic forecasts for 2024 are quite mixed, pointing to higher-than-expected growth in the US and China, but a slower pace in Europe and France.

Against this unstable backdrop, we released solid first-half results in late July and confirmed the 2024 guidance issued in February.

**Bouygues Construction** and **Colas** both have backlogs at a very high level, providing good visibility on future activity. The growth in backlogs was mainly driven by major projects both in France, such as Line 15 East-2 of the Grand Paris Express and the Victor Dupouy hospital expansion in Argenteuil, and internationally with the construction of a hospital in Rabat,

Morocco, and a solar farm in Culcairn, Australia.

At the other end of the spectrum, **Bouygues Immobilier**, which is having to contend with a challenging market environment in both residential and commercial property in France, reported a sharp decline in its backlog. In this context, Bouygues Immobilier implemented an employment protection plan, preceded by a voluntary redundancy period, to safeguard its competitiveness.



“

# *Bouygues' high-quality infrastructure offers firm foundation for successful Paris Games.*

**Equans** posted a solid order intake, up both in France and internationally. Significant orders were booked in France in the navy, nuclear, transport and building sectors, and internationally, in relation to data centre projects, solar farm construction and the smart factory sector. Equans continued the successful execution of its strategic Perform plan. Its margin from activities was 3.2%, up 0.5 points versus first-half 2023.

**TFI** strengthened audiences among its main target groups, especially among women under 50 who are purchasing-decision makers, as evidenced by a 1-point gain in audience share relative to first-half 2023. The continued roll-out of the free streaming platform, TFI+, met with encouraging results.

**Bouygues Telecom** continued to grow but with differing patterns between mobile and fixed. In a growing fixed market, 249,000 customers were added in the first half, while mobile market growth was more moderate, with 76,000 new adds.

The spirit of the Games left a huge imprint on the city of Paris this summer. By all accounts the Games were a runaway success, with a ripple effect around the globe. We were moved to see athletes from our countries collecting their medals. It was a singular moment in time – a time of jubilation, harmony and enthusiasm. This success story was driven by first-class

organisation and the tireless dedication of athletes and volunteers alike. But this successful outcome would not have been possible without the quality of the sports, transport and housing infrastructure – much of it built by Bouygues. We therefore wanted to keep this wonderful moment alive by highlighting the Bouygues group's achievements in a 28-page special feature in this issue of *Le Minorange* No. 103. Inside you'll find out more about the spectacular Saint-Denis aquatics centre, the Adidas Arena sports complex in the Porte de la Chapelle neighbourhood and a dozen other Group projects. You can take a closer look at Bouygues Telecom's innovative solution to prevent mobile network congestion. You'll also meet our extraordinary employees who are also sports/para-sports athletes, including Alexis Hanquiquant: a para-triathlon Gold medallist, flag-bearer for the French delegation and an employee of Bouygues Bâtiment Grand Ouest. The Group is honoured to have employees of such calibre who can proudly wear their nation's colours and embody our corporate values.

Although the coming months will be marked by political and economic uncertainty, both in France and internationally, the Group can nonetheless rely on a robust financial position and backlogs at a high level in the construction businesses and at Equans. More so than

ever, I know that I can count on what is at the heart of Bouygues and what shapes our identity: you — the dedicated and accomplished women and men who are driven by a spirit of excellence and a unique corporate culture. I would like to congratulate and thank each and every one of you. As you know, you can also count on me and on all the Group's senior executives. ●

**Olivier Roussat**  
4 SEPTEMBER 2024



FOLLOW OLIVIER ROUSSAT  
ON SOCIAL NETWORKS



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# AT A GLANCE



A Palace  
for PATHÉ



It's curtains for the Gaumont Capucines cinema in Paris. At the beginning of July 2024, a new cinema, the Pathé Palace, will take its place, only a stone's throw away from Paris' Palais Garnier opera house. The Pathé group awarded Bouygues Bâtiment Ile-de-France Rénovation Privée (Bouygues Construction) the contract for the major renovation of this 9,500-m<sup>2</sup> listed building, which includes the dome, rotunda and façades. Designed by architect Renzo Piano, the new site houses seven screens with state-of-the-art

technology, lounges, a coworking space and a host of service areas, as well as the head office of Cinémas Pathé. The works, which lasted 40 months, involved over 50 Bouygues site workers and, at peak times, up to 250 people in all trades (Bouygues site workers and subcontractor partners).

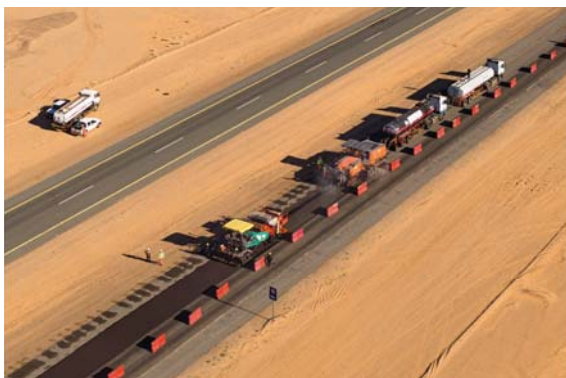
Take a video tour  
of the worksite



## ROAD RECYCLING in Saudi Arabia



The Recycol recycling process, developed forty years ago by Colas, has been used in Saudi Arabia for the first time. 20 km of road surface, 10 cm thick, was recycled in-place between the cities of Medina and Tabuk. Four Colas France site workers, specialists in the solution, and technicians from Colas Maroc's labs supported the local teams on this project.



## COLAS RAMPS UP *mobility in Brest*

Colas has been awarded two Brest metropolitan authority (BMA) contracts for a second tram line (Line B) and the area's first Bus Rapid Transit (BRT) line (Line D) as part of its network extension project. The total contract sum for the two systems is €83 million. The two systems, bringing together work from Colas France, Colas Rail and Aximum, will enter into service in 2026.





## COLAS IS ON TRACK in Finland

Destia, a Finnish subsidiary of Colas, has been awarded the contract for Zone 3 of the urban railway line in Espoo, Finland's second-largest city, by the country's transportation infrastructure agency. The project involves building 4.5 kilometres of new double-track line and three bridges, rehabilitating another four bridges, demolishing another structure, and refurbishing two stations. The new tracks will allow commuter trains and long-distance trains to run separately, thereby improving the frequency, regularity and availability of rail services.



## The Group to build LINE 15 EAST of the Grand Paris Express

The Iris consortium, in which Bouygues Travaux Publics is the lead firm, will design and build line 15 East of the Grand Paris Express rapid transport link from Bobigny to Saint-Ouen, for a total cost of €1.087 billion. The project comprises the construction of four new stations and the excavation of a 5.5-kilometre tunnel. The other Group entities involved are Bouygues Bâtiment France, Bouygues Energies & Services and Colas Rail.



## DEATH OF NONCE PAOLINI

It is with great sadness and much emotion that we learnt of the death of Nonce Paolini, the former Chairman and CEO of TF1.

After fifteen years at EDF, Nonce Paolini joined the Group in 1988 where he was successively Director of Human Resources Development and Group Corporate Communications Director at Bouygues, before joining TF1 in 1993, where he was appointed Human Resources Director and then Deputy CEO. In 2002, he joined Bouygues Telecom as Senior Vice-President before being appointed Deputy CEO. He was appointed Chief Executive Officer of TF1 in 2007 before becoming Chairman and Chief Executive Officer from 2008 to 2016.

Nonce Paolini was a charismatic, committed and determined manager, who forged strong ties with others and listened to his teams. He had a great sense of humour and encouraged openness in his relations and promoted fulfilling management practices. In close to thirty years with the Group, he has left his footprint in several business segments and leaves behind a strong legacy, inspiring the Group Induction Days, the Group Human Resources Charter, the Neo unlimited call plans at Bouygues Telecom and TF1's development in DTT. On a personal level, we both very much enjoyed working with him throughout his career at Bouygues. He will be sorely missed.

We would like to pay tribute to Nonce Paolini for everything he has contributed to the Bouygues group. We join his family, friends and former colleagues in their grief, and offer them our sincere condolences.

**Martin Bouygues and Olivier Roussat**

## Olivier Roussat SPEAKS ABOUT ETHICS

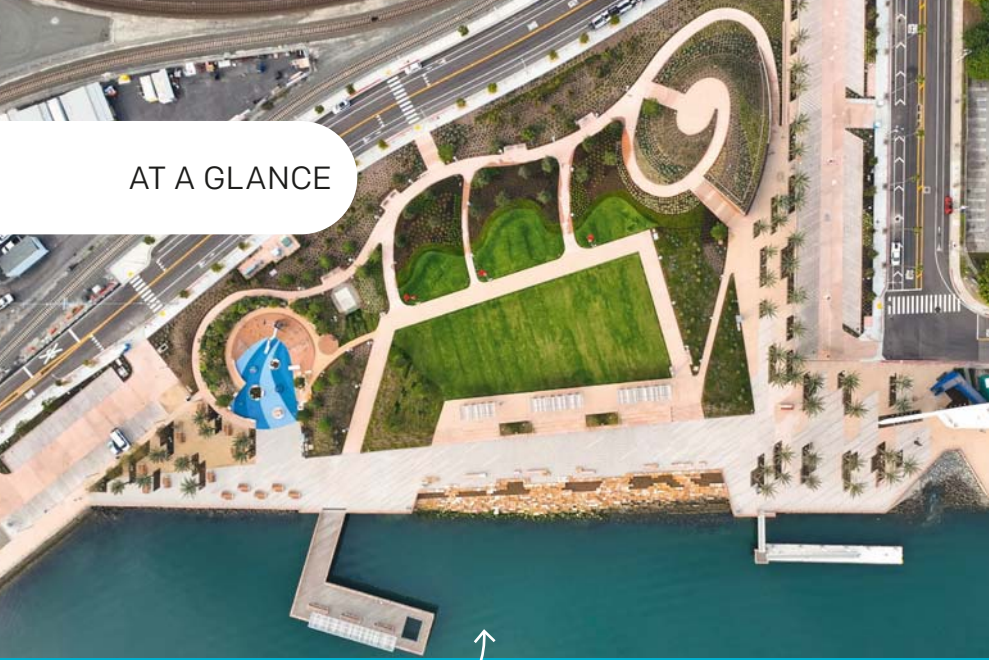
"Respect for ethical principles is a key concern, placed at the top of the agenda by Martin Bouygues for the past 30 years," says Olivier Roussat in a recent video. The Group's Chief Executive Officer reminds us that Bouygues has a zero-tolerance policy towards corruption and anti-competitive practices. A Code of Ethics, an Anti-Corruption Code of Conduct and four compliance programmes have been

produced to support employees in this process. An on-line whistleblowing platform is also available for the confidential reporting of situations that breach these codes. As a reminder, no disciplinary action may be taken against a whistleblower who has reported in good faith.




See what Olivier Roussat has to say on the subject in this video, translated into around twenty languages





AT A GLANCE


## Los Angeles WATERFRONT BEAUTIFIED

 Sully-Miller Contracting Co., a California subsidiary of Colas, has completed improvement works creating the Wilmington Waterfront Promenade in a neighbourhood close to the Port of Los Angeles. A floating dock, a pier and a play area were built, together with a public toilet whose green roof also reduces the environmental impact. The project built on a 12-hectare brownfield site called for major earthworks to create a mound, from which locals and tourists can enjoy an unobstructed view, and for relocation of a road that now bypasses the park. Scheduling took account of tides in order to prevent flooding of the underground works.

## A MEGA GIGAFACTORY

In March 2024, Pierre Hardouin, CEO of Equans France, and Yann Vincent, CEO of the Automotive Cells Company (ACC), signed a new contract to build the second block of ACC's battery manufacturing plant in Douvrin, northern France. In the first block, Equans France built the clean and dry rooms (HVAC and electrical engineering, ventilation and pipework, and distribution of the fluids needed for the equipment). ACC's aim is to double production capacity by 2026.

## LE MIRABEAU DOMINATES MARSEILLE

 On 27 June, Rodolphe Saadé, Chairman & CEO of the CMA CGM Group, Martin Bouygues and Emmanuel Desmaizères, CEO of Bouygues Immobilier, inaugurated the Le Mirabeau tower in Marseilles, a joint development by CMA CGM and Bouygues Immobilier. Designed by architect Hala Wardé, the 85-metre-high tower will house 21 floors of offices for a number of companies, such as two subsidiaries of CMA CGM and the regional headquarters of Bouygues Immobilier. It boasts high environmental performance thanks to the bioclimatic design of the building envelope, a thalassothermal energy system, the HQE "Sustainable building" certification at Excellent level and the Breeam label at Very Good level.



## A UNIT DEDICATED to industry

Bouygues Bâtiment France, a subsidiary of Bouygues Construction, launched "Bouygues Bâtiment Industrie" in May 2024. Its mission is to support the green reindustrialisation of France and promote decarbonisation. This new entity is organised around eight areas of expertise: sustainable mobility, data centres, manufacturing, logistics, hi-tech, life sciences (biotechnologies, cosmetics, pharmaceuticals, etc.), agri-food and energy.



## EQUANS DIGITALISES University of Liège CHP plant

Equans has a 30-year history of collaboration with Belgium's University of Liège where in 2012 the company installed a biomass combined-heat-and-power (CHP) plant whose operation is now being digitalised in order to optimise the heating system's performance. To do this, Equans has fitted latest-generation programmable logic controllers in the substations of each building in order to eliminate needless consumption by shutting off heat to buildings at predetermined times. The maintenance, operation and management contract for all the heating, ventilation and air-conditioning systems has been renewed for 10 years.



## NEW HEAD OFFICE FOR *SNCF VOYAGEURS*



 In April, Bouygues Immobilier and Axa IM Alts handed over the Hamø development in Saint-Denis, near Paris. Designed by Danish architects' firm Henning Larsen, the project comprises over 30,000 m<sup>2</sup> of office space, shops and activities, and includes the new headquarters of SNCF Voyageurs, which will accommodate over 3,500 staff, three reversible catering areas, an events area, a roof-top space and two restaurants. The building boasts high levels of environmental performance and is targeting the BBCA, HQE Excellent and BBC Effinergie (level E2C1) labels.



**TF1**

## CAT'S EYES: *the return of a cult series*

Adapted from the cult manga *Cat's Eyes* by Tsukasa Hōjō, this TV series follows the adventures of the three Chamade sisters as they must improvise as burglars in some of Paris's most beautiful and secure monuments. It is packed with action, romance and comedy. Co-produced by Big Band Story and TF1, the eight 52-minute episodes will be distributed internationally by Newen Studios.



## RESPONSIBLE TOURISM *with Ushuaia Villages*

Néocamp is launching a new range of vacation options under the Ushuaia Villages brand in collaboration with TF1 Licensing, which manages the rights to the Ushuaia brand launched in 1988. Aimed at vacationers in search of nature, discovery and authenticity, Ushuaia Villages are intended to fit unobtrusively into their environment. This will involve making customers and company personnel fully aware of CSR issues, reducing water and energy consumption, managing waste, protecting biodiversity, and ensuring responsible purchasing practices. The first 17 sites were opened in France in April 2024.

## Bouygues Telecom THE FIRST TELECOMS OPERATOR TO BOARD THE GRAND PARIS EXPRESS

 In December 2023, a first agreement was signed between Bouygues Telecom and Cellnex, the telecoms infrastructure operator, to provide the stations and tunnels between Saint-Denis Pleyel and Noisy-Champs (line 16) and Charles de Gaulle airport (line 17) with 3G, 4G and 5G coverage. Bouygues Telecom thus becomes the first telecoms operator to take part in the Grand Paris Express rapid transport link project.



INTERVIEW

COLAS





# “ COLAS IS COMMITTED TO THE GROUP’S DECARBONIZATION GOALS

**ONE ON ONE.** Pierre Vanstoflegatte was named chairman of Bouygues Energies & Services in 2019, then CEO of Colas in September 2023. Here he talks with *Le Minorange* about the issues facing a company at the crossroads of environmental and societal transformations.

*Interview by Laura Franchet on 28 May 2024*

**Since your arrival at Colas, you have met many employees around the world. What is your impression of the company and its people?**

It has been a real pleasure discovering how diverse Colas’ employees are. And I am far from having met everyone. Since we are present in 50 countries, it will keep me busy for almost a year. What is very interesting is the overlap of two worlds: on one side, the industries connected to quarries, bitumen, and emulsions, and on the other side, the construction work, which I am familiar with from my time at Bouygues Construction. I am impressed by the scale of this company and the diversity of its expertise.

**Colas operates in the road, materials, and rail sectors. How would you describe the company’s performance?**

Colas had a great year in 2023. Revenue rose to 16 billion euros, up 6 percent at a constant scope and exchange rates. The United States, Canada, and to some extent France saw a significant improvement in their results. These three countries account for about 70 percent of revenue. The bitumen business is

doing very well, with one notable event being the commissioning of two new bitumen tankers delivered to Continental Bitumen [see *Le Minorange* No. 102 – ed.]. The Rail activity had an excellent year in terms of new orders, winning several large projects such as the Aboukir metro in Egypt and the extension of a line in the Philippines.

**In your view, what are Colas’ strengths?**

First, our model is based on the vertical integration of our activities. These range from the production, trading, and recycling of materials to the maintenance of road, port, and airport infrastructure. Another strength is the commitment and expertise of our employees, who are proud to work for Colas. And third, our well-established local agencies and the diversity of our trades, which allow us to adapt according to opportunities.

**And places for improvement?**

We want to improve our procurement processes, the management of our equipment, and the performance of our industrial facilities. These are all means of increasing our overall performance. Also, there is still much to be done in

decarbonizing our activities. Although bitumen has a bad reputation, we have solutions and products that we can rely on to address sustainability challenges. We are making progress in the supply chain by identifying more responsible suppliers. The circular economy sector also presents real opportunities. The path remains challenging, especially concerning scope 3a<sup>1</sup>. The goal of a 30-percent reduction compared with 2019 is ambitious but the right one, as we have traced out the road to achieve it. Colas is fully committed to the Group’s decarbonization goals.

**In addition to its environmental commitment, Colas began implementing a CSR policy in 2020 based on eight commitments. Where have you made progress, and where is there more work to do?**

Colas is doing a good job in the areas of health and safety culture, ethics, and compliance. As for talent development and retention, one major challenge is the feminization of our workforce, ...

*1. An objective compatible with the Paris Agreement. Scope 3a pertains to upstream greenhouse gas emissions.*



During his trip to Morocco, Pierre Vanstoflegatte visited the expressway construction site at Casablanca.

**BIO EXPRESS**

- **1968:** Born in Salé, Morocco
- **1993:** Graduate of École Polytechnique and École des Mines de Paris
- **1995:** Project Engineer at Spie on international civil engineering projects
- **2005:** Managing Director, Spie Sud-Ouest
- **2012:** Chairman and Chief Executive Officer of the Schindler group
- **2016:** Chairman and CEO of the IPH group (industrial supplies distributor)
- **2019:** CEO of Bouygues Energies & Services
- **2022:** Led the transfer of Bouygues Energies & Services to Equans
- **2023:** CEO of Colas

... especially in the field. We must change the stereotypical view of our activities. For example, in the United States and Canada, we have all-female production teams. Beyond recruiting young managers, we need to do more regarding parenthood, as we lose talented people around the ages of 30 and 35. A final commitment I want to highlight is to reduce the impact of our activities so that they are accepted. We need to be careful because cities are spreading to the edges of our industrial sites, and residents are becoming more demanding concerning noise, odors, and dust.

**How do you plan to accelerate in the digital field, particularly in artificial intelligence?**

Digital has been overtaken by AI. In this area, we have about fifty tools

being tested. In recent years, a colossal amount of work has been done to collect data, especially on our equipment. These collected data allow us to develop promising solutions for the industries. AI's ability to generate images can be useful for the safety of industrial sites, truck loading, calculating quantities, and combatting fraud in the materials business. We are developing InfraCare, which enables our customers to target the work to be done on a road instead of undertaking a complete pavement renovation. We have also developed 2IN, digital twin software that visualizes buildings, infrastructure, related risks, and other things at multiple scales. Finally, AI helps during the tendering process by scanning large documents and selecting the parts that will be useful to our staff. Overall, AI is a good



automation tool for our trades but one that does not replace our people. With this technology comes the need to better understand and improve our processes.

**One of your missions is to improve synergies with other Group businesses, particularly Bouygues Construction and Equans. How do you plan to do this?**

In terms of purchasing, we are placing joint orders for large volumes, and we are beginning to see savings. Colas' strong international presence allows us to support other Group businesses that want to undertake projects or get established themselves where Colas has operations. In terms of human resources, Colas' geographic locations offer great opportunities for Bouygues Construction and Equans employees to move to new jobs. Last, in the area of tendering, we work together quite a lot depending on the type of project and the sector. For large logistics infrastructures such as airports, ports, or data centers, it makes sense to submit joint bids when appropriate. Competitors do it, so why deprive ourselves of this competitive advantage?

“

*We have basic work to do in our organization on parenthood and the career development of women.*

**How would you define your management style?**

I have always believed that engaging directly with employees is beneficial. It is essential to remain humble and accessible. Reminding myself of how things work in the field is also very important for me so that I keep a balanced perspective.

**After 30 years of involvement in contemporary art, the Colas Foundation has shifted its focus. Can you tell us about it?**

This decision, which was made by my predecessor, is a good one. The Colas Foundation has refocused its actions on social and workforce integration issues. This change brings us closer to the public's concerns. The long-standing support of Canadian and American subsidiaries for Indigenous communities has inspired us in Europe [see article, p. 17 – ed.]. In France, we support the network of nonprofits through partnerships with *Apprentis d'Auteuil* and *Rév'Elles*. We have also launched a label that allows our international entities to highlight their actions. It is a good way to show our employees who work on them daily and the young people who want to join Colas how these actions are meaningful. ●

FOLLOW PIERRE VANSTOFLEGATTE ON THE SOCIAL NETWORKS



 **LinkedIn**

[linkedin.com/in/pierre-vanstoflegatte/](https://www.linkedin.com/in/pierre-vanstoflegatte/)

## + INTERVIEW PERSO



**What is your secret for fighting jet lag?**

I have the good luck of being able to go to sleep anywhere, anytime. My daughter says it's a superpower.



**You have said that your name is "a weird thing." Why?**

It is a name that frightens the French with its 14 letters! It is of Flemish origin. My family comes from northern France, near the Belgian border, though during my career, I have worked in Belgium and the Netherlands and have been told it doesn't originate there.



**What is the difference between a good hunter and a bad hunter?**

There is none, just like in the comedy sketch of *Les Inconnus*! Joking aside, I hunt small game alone with a pointer. My father instilled this passion in me. Five years ago, I bought land in Sologne and discovered that I enjoyed developing it. Along with hunting, being close to nature is essential for my personal equilibrium.



**Did you name a strategic Bouygues Energies & Services project after your dog?**

That's true. During the first seminar with Equans, I gave a presentation on what had been done at Bouygues Energies & Services to improve performance. I used a photo of my dog to make an impression. He is a bloodhound named Haka who pursues his goal to the end.



**What thriller would you recommend reading?**

I read a lot of Scandinavian and Icelandic thrillers. But other books too, like recently, *Anarchy*, by William Dalrymple, which tells how in the 18th century a private company took control of India and found itself commanding an army of 600,000 men. This story recalls other forms of aggressive capitalism.



# HEROES ON THE ROAD



*At Toronto, Miller is resurfacing  
10 kilometers of Highway 401.*



**TORONTO.** In the province of Ontario, teams from Miller ensure the safety and reliability of road infrastructure all year long. To carry out this mission, the Colas subsidiary is there at every step, from the sourcing and production of materials to development, construction, and maintenance.

*By Laura Franchet*



## REPORT



↓  
Compacting a layer of asphalt on Highway 401.



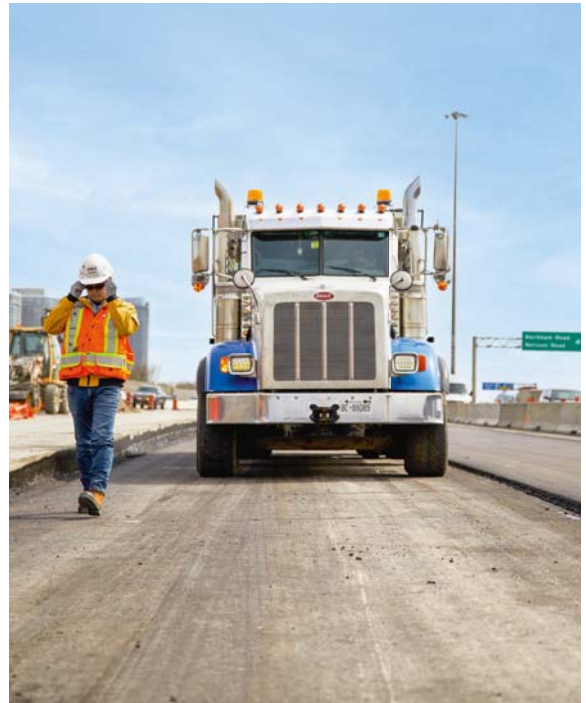
Robert Carello, Project Manager (left) and Chris Newman, General Superintendent.

On Highway 401, which bypasses Toronto, workers from Miller are applying high-temperature asphalt, unfazed by the steady flow of traffic. As many as 500,000 cars and semi-trailer trucks travel on this 16-lane highway each day. “It’s the busiest highway in North America,” says project manager Robert Carello. “We are resurfacing ten kilometers of it under a six-year contract signed with the Ontario Ministry of Transportation in 2019. It’s Miller’s largest project.” The 150-km eastern section of Highway 401, which connects Toronto to the Canadian Forces Base in Trenton, has been renamed the Highway of Heroes. “The work resumed in April and will be completed in October,” says Chris Newman, general superintendent. “During this period, when temperatures are milder, teams work in shifts day and night to stay

on schedule,” adds paving superintendent Keith Newman. This father and son have worked for Miller for over 20 years. The company maintains bridges, roads and highways like Highway 401 in the Toronto area, a dynamic metropolis of almost three million people, and in the provinces of New Brunswick and Nova Scotia. It also coordinates work done by subcontractors such as installing lighting and noise barriers.

In spring 2022, Miller began work on a contract that includes the design and construction of three bridges on a road adjacent to Highway 401. When the project is completed in 2026, it will help divert some traffic during construction season. “Thanks to our expertise, we were able to propose design improvements to the customer that saved them two million Canadian dollars [about





↓  
Miller is constructing three bridges on a road adjacent to Highway 401.

↑  
Miller ensures the safety and reliability of infrastructures and upgrades the road network.



**NAGATY BANAYOTY**  
Project Manager



**MYTHILY SUNDARAI SWARAN**  
Quality Control Manager

1.35 million euros – ed.],” notes project manager Nagaty Banayoty. Yet another example of the proactive and value-added approach that Miller has taken with the Ministry of Transportation for 25 years.

**ROCK, AGGREGATES, BITUMEN**

In Brechin, a small town near Lake Simcoe roughly two hours by car from the bustling center of Toronto, Miller has been operating a 330-hectare quarry since the 1980’s. “We extract rock and transform it into aggregates right here on site,” ...





## REPORT

... says operations manager Robert Lindsay. Generators have been installed to supply power to the rock crushers. Some of the aggregates are then transported to the Tapscott asphalt plant in a Toronto suburb, where they are mixed with a bituminous binder to produce asphalt for paving roads. “We deliver our bitumen products to more than 250 private and business customers,” notes Oliver Pegg, manager of the Tapscott plant. Pegg, who began working here in 2001, oversees operations to transform the materials during the summer and then look after plant maintenance in winter. “We took advantage of the winter season to install a more efficient machine for heating the bitumen,” adds Pegg. Bitumen storage capacity at Tapscott increases every year, reaching 1,000 tons in 2024. When

the harsh Canadian winter ends, the plant operates six days a week, 24 hours a day to supply projects such as Highway 401. Miller produces the essential materials for its projects, thus securing the entire value chain in Canada’s most populous region, where infrastructure construction never stops.

### QUALITY AND RECYCLING

This Colas subsidiary owns 16 asphalt plants like Tapscott in the province of Ontario and ready-mix plants like the one in Aurora, which includes a logistics center, a workshop for vehicle maintenance and repair, and a laboratory. “We test the robustness of our materials, which must stand up to heavy traffic and severe weather conditions on the roads,” says Mythily Sundaraiswaran, quality control manager at Miller.

“  
*Our research on materials is aimed at lengthening the lifespan of roads in the context of the adaptation to climate change.*  
MYTHILY SUNDARAI SWARAN  
Quality Control Manager



↓  
Miller operates the Brechin Quarry, located about two hours by road from Toronto.





↓  
*Evan Locke and Miriam Maziarz take rock samples for analysis in the laboratory.*



**MINORANGE BONUS**

Learn more about Miller's projects



↑  
*Operations at the Tapscott asphalt plant resumed in April after a harsh Canadian winter.*

**COMMITMENT TO CANADA**

Miller has a long history of working in collaboration with First Nation communities and fostering positive relationships, in particular on ancestral territories. In 2003, a commercial partnership was signed with Nippissing First Nation that led to the construction of a bridge in North Bay using workers and subcontractors from the community (see the article in *Le Minorange* Special Edition CSR). Another example of its commitment: for every ton of cement and concrete sold, Miller donates to Autism Speaks, an organization supporting autism research and awareness initiatives. They also sponsor the RideSmart program, which teaches children bicycle safety, and organizes events for young people where they are introduced to heavy equipment and

learn more about occupations in the construction and infrastructure sector. In the environmental sphere, land rehabilitation projects have been undertaken at former pits and quarries to restore them to their original use. Miller has been recognized 22 times in the last three years with Aggregate industry awards for their rehabilitation and property enhancement work, as well as Environmental Achievement awards with respect to transportation services. And in May 2024, Colas Canada Inc and the Colas Foundation concluded a partnership with the First Nations Child & Family Caring Society, with a donation of CAD 100,000 in the first year. Colas companies maintain ongoing relationships with First Nations, Métis, and Inuit organizations in Canada.

“Our research is aimed at designing products that will last between 20 and 25 years and lengthen the life span of roads at a time when there is a need to adapt to climate change.” Miller is known for the quality of its products, which is both a commercial asset and a guarantee of customer trust.

At the Aurora location, concrete and cement mixtures are sold year-round. Trucks haul in concrete from building demolition sites for transformation into aggregates that are then used in making new products. “We want to increase the share of this recycled concrete in the coming years and provide our customers with detailed information on the ●●



REPORT

→ Miller has a fleet of 18 trucks to transport cement throughout the entire region.



↑ Justin Baxter, Resources and Technical Services Manager at Miller.

... carbon footprint of our products,” says Cindy McCarthy, transportation and compliance manager, who has been with the company for 10 years.

**STRATEGIC COVERAGE**

Angelo Leva heads Miller’s Cement division, where twenty-two people and eighteen trucks are employed to transport and supply this material throughout the region. “Thanks to our port terminal on Lake Ontario, we are connected to the other Great Lakes bordered by the United States, which gives us strategic coverage over a wide area,” says Leva. A logistics system has been implemented at the Aurora plant to track deliveries in real-time. Adds Leva: “We apply the principles of yield management, which is a strategy for optimizing revenue by adjusting the prices of our services based on demand and our available capacities.” Over the years since its founding in 1917, the legacy,

expertise, and commitment of its employees has enabled the company to adapt to the Canadian market. Through its continual pursuit of excellence and commitment to reducing the environmental impact of its activities, Miller has confirmed its status as a leader in the road building sector. ●



↑ The materials and products sold by Miller undergo testing in the laboratory.

→ A Miller team at the ready-mix plant in Aurora, in the greater Toronto area.



“ Our employees and the innovations we bring to the industry contribute to Miller’s success. We are proud to preserve our heritage. RYAN ESSEX President of Miller



**MINORANGE BONUS**  
See an interview with Cindy McCarthy





**ROBERT LINDSAY**  
*Operations Manager at  
the Brechin quarry*



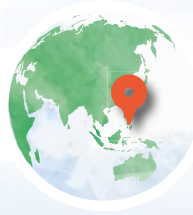
**ANGELO LEVA**  
*Head of Miller Cement*



### **ROOTED IN CANADA**

Colas employs over 8,000 people in ten of Canada's thirteen provinces and territories. To maintain and modernize the country's infrastructure, it has assembled a solid network of companies: Miller, Standard General, NPA, Canadian Road Builders, Terus, McAsphalt, and Sintra. Present for 50 years in Quebec with Sintra, Colas has grouped its 25 local brands under a single name, Colas Quebec, since 1 April.





# BOUYGUES' TOWERING PROJECTS IN MANILA

**DEVELOPMENT.** In the Philippines, Bouygues Bâtiment International is carrying out five major projects in a joint venture with its local partner Makati Development Corporation. Overview of the work now underway.

*By Céline de Buttet*



*View of Makati City, one of the 17 municipalities that make up Greater Manila. At the center of the photo, the Park Central Towers. Bouygues Bâtiment International and its partner MDC did the structural works and the façades.*





## REPORT



**B**road, straight avenues, clusters of skyscrapers, and one huge mall after another: welcome to Makati City, one of the 17 municipalities comprising Greater Manila as well as the country's premier business center. At the origin of its post-war development is the Zóbel de Ayala family, whose conglomerate, Ayala Corporation, is active in property development with Ayala Land, banking services with Bank of the Philippine Islands, telecommunications with Globe Telecom, and energy with AC Energy.

In 2016, this giant in the Philippine economy and Bouygues Construction became partners in MDBI, a joint venture between Bouygues Bâtiment International Philippines (33 percent) and Makati Development Corporation (MDC), the construction arm of Ayala Land (67 percent). MDBI, which has a staff of about a dozen expatriates and twenty Filipinos, under the leadership of Joris Thomas, CEO of Bouygues Bâtiment International Philippines and vice president of MDBI, delivered Ayala Triangle Garden<sup>1</sup>, its first mixed-use complex in Makati City, in 2021. Four other projects are currently underway: One Ayala Avenue (four mixed-use towers); Park Central Towers (two luxury residential towers); the headquarters of

1. See report in *Le Minorange* no. 97 (2021).



Makati City is the country's leading business center.



**JORIS THOMAS**

CEO, Bouygues Bâtiment International Philippines, and vice president, MDBI

Bank of the Philippine Islands (BPI); and Park Villas (a luxury residential tower). In this island nation, which is recording the highest economic growth rate among the ASEAN<sup>2</sup> countries, Bouygues Bâtiment International is helping to support this expansion through the construction of infrastructures. Proof that the Philippines is a rapidly growing market, MDBI has signed its first contract outside Manila with a new client for the construction of a data center. Complex high-rise buildings and data centers are two growth sectors central to Bouygues Construction's Green Light strategy.

2. The Association of Southeast Asian Nations (ASEAN) has ten members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, the Philippines, and Vietnam.







←  
The four towers of the mixed-used project, One Ayala Avenue.

↑  
A jeepney, an iconic mode of public transport in the country.



**CHARMAINE TRIUMFANTE**  
Production Manager, MDBI



**BOUBKER BELHADJ**  
Project Director, MDBI



A padel match in the exhibition hall of the One Ayala Avenue shopping mall.

## ONE AYALA AVENUE, A COMPACT VERSION OF MANILA

March 2024. One Ayala Avenue will soon be fully delivered. Four new towers now stand on the former site of the InterContinental Hotel. This mixed-use project developed by Ayala Land at a cost of 317 million euros consists of three office towers of 29, 26, and 23 floors, a shopping center housed in the podium, a hotel with a swimming pool and 3,000-sq.-m ballroom, and a two-level bus terminal. Seven hundred and fifty tonnes of metal framework, ten cranes, four concrete placing booms, 3,000 workers at peak times (all of them temporary workers, as is customary here). “While the project is quite classic, it is very impressive because of its size,” comments Boubker Belhadj, project director at MDBI. “In 2022, it was the largest construction site of Bouygues Bâtiment International.” Although prefabrication is used only to a limited extent in the country, MDBI has relied on it as much as possible,

manufacturing pre-slabs, beams, stairs, and facade panels at a site a 30-minute drive away to simplify the construction process and shorten delivery times. The difficulties lay elsewhere. Many design changes were made during the project due to Covid-related economic uncertainties, and many parties were involved: no fewer than 26 subcontractors were used for the façades alone, resulting in a veritable patchwork of different systems.

### CAUGHT IN TRAFFIC

There were also local restrictions to contend with. “Greater Manila, often ranked among the world’s most congested cities, imposes a traffic ban,” says Charmaine Triumfante, production manager at MDBI. “Trucks weighing over 30 tonnes are prohibited from circulating between 5 a.m. and 9 p.m.” Thus, concrete must be delivered and poured at night, meaning workers ●●●



**PARK VILLAS:  
TOP-DOWN  
CONSTRUCTION**

In January 2024, MDBI began construction of a new skyscraper, the 203-meter, 51-story Park Villas. Containing 45 high-end apartments, one per floor and each with an area of 740 sq. meters and a terrace, it will join Park Central Towers in offering some of the most expensive apartments in the neighborhood. In the podium will be parking, a spa, a gym, and a pool. Turnkey delivery is slated for 2029. For this project, MDBI proposed top-down construction, a rarely used method that consists in constructing the superstructure and the underground levels simultaneously thanks to special foundations.

While more expensive, this technique significantly reduces construction times. “To support us on this project, we have called on the expertise of Intrafor, a subsidiary of VSL, itself a subsidiary of Bouygues Construction, that specializes in the construction of underground support structures and deep foundations,” says Olivier Juarez, project director at MDBI.

... are on the job around the clock. “In this very dense urban environment, vehicles could only get into the construction site via a single lane,” adds Jean-Louis Guincetre, quality control manager at MDBI. This lane, located at the ground level of the building complex, has become a continually busy bus terminal through which more than 170,000 people transit daily, stopping along the way at one of the many food stalls serving tasty *meriendas* (snacks). On the first underground level there is a terminal for minibuses and jeepneys (vehicles resembling a stretched version of a military jeep that are an iconic mode of public transport in the country). One Ayala Avenue, a compact version of Manila on 380,000 sq. meters, is a great training experience for Charmaine Triumfante. Fresh out of school, the young architect began her career in 2014 at MDC, where she was spotted by the team at MDBI. Hired in 2019, she was rapidly given more responsibilities as production manager on this project and as Lean manager on the data center. ●



*Park Central Towers, at the corner of Makati Avenue and Paseo de Roxas. Atop each of the towers is a three-floor penthouse.*



*Sherilyn Padual (foreground) and Jaee Devina work from a gondola at the Park Central Towers construction site.*



→  
 In this project, MDBI is doing  
 only the structural works and  
 the façades.



**ALLAN ABOY**  
 Construction Manager,  
 MDBI



**LIONEL BRISWALTER**  
 Façades Manager,  
 MDBI

## PARK CENTRAL TOWERS: DEFINED BY SUPERLATIVES



### MINORANGE BONUS

See a video about  
 the project



The south tower, 70 floors (248 meters in height) and 281 apartments, to be delivered in 2025; the north tower, 57 floors (203 meters in height) and 259 apartments, to be delivered in 2026: this condominium will be one of the tallest in Manila. And one of the most expensive, with an average square-meter price of 8,900 euros. At the top of each tower is a three-floor penthouse, one with a floor area of 1,354 sq. meters. At their base, a podium with shops, restaurants, a swimming pool, and a gym. In this project, MDBI is supplying only the structure and façades, for about 126 million euros, with MDC as both a partner and customer. At peak periods, around 2,000 workers have been on the job building these towers, which were begun in July 2018 and are nearly completed today. “On four floors of the south tower, between levels 61 and 64, and four floors of the north tower, between levels 52 and 55, we

installed viscoelastic seismic dampers,” explains Allan Aboy, senior construction manager at MDBI. “These are placed in strategic locations to absorb movements during earthquakes and to provide better resistance to the strong winds in typhoons.” As for the façades – 135,000 sq. meters of aluminum and glass cladding for the most part – special lifting tools had to be designed. “Twelve different systems were devised to perform the operations required by the project and the architect’s design,” says Lionel Briswalter, façades director at MDBI. In addition to meeting the performance standards for thermal efficiency and insulation in the Philippine Green Building Code, the glass panels are designed to withstand water pressure and winds of up to 250 km per hour. Those installed from ground level up to a height of 18 meters must also be laminated to reduce risks in the event of a typhoon. ●



# LOW-CARBON CONCRETE FOR BPI'S NEW HEADQUARTERS

A very big hole... soon to be filled by seven levels of underground parking. The MDBI teams are busy constructing the new headquarters of the Bank of the Philippine Islands (BPI) for 200 million euros. Upon completion in November 2028, a tower with a complex concave and convex design will rise 224 meters into the sky above Makati. In addition to 38 floors of offices, the 47-story tower will have a podium with six levels of retail spaces. One unique feature: a raft foundation, i.e., a concrete slab made of 10,000 cu. meters of low-carbon concrete that will constitute the base of the future structure.

To achieve its objective – validated by the Science Based Targets initiative<sup>1</sup> – of reducing its greenhouse gas emissions by 30 percent by 2030, Bouygues Construction is making an effort to curb CO<sub>2</sub> emissions from concrete at all its construction sites. Although concrete contains natural materials (sand, gravel, etc.), it is composed largely of cement. “Eight percent of CO<sub>2</sub> emissions worldwide come from the production of cement,” points out Christine Courtel, an independent specialist in concrete formulation who regularly works with Bouygues Construction. Depending on local conditions, available materials, and project requirements, it is possible to formulate innovative low-carbon concretes with a minimal amount of clinker. The main component of cement, clinker is produced by heating at very high temperatures a mixture consisting of about 80 percent limestone, and its production generates significant quantities of CO<sub>2</sub>, not only due to calcination, but above all because of decarbonization<sup>2</sup>. “The solution is to replace clinker with substances that emit very little CO<sub>2</sub>, such as fly ash, blast furnace slag, or calcined clay,” explains Courtel. “Depending on the dosage, significant reductions in the carbon footprint can be achieved.” ●

1. Created in 2015, Science Based Targets initiative encourages companies to set objectives based on scientific data for the reduction of greenhouse gas emissions
2. Decarbonization of limestone involves reacting CaCO<sub>3</sub> (calcium carbonate present in limestone), which produced CaO (clinker) and CO<sub>2</sub>

↓  
Some 2,300 construction workers are on the job night and day, seven days a week at the data center site.



Lunch break on the worksite.



**NICOLAS DANO**  
Technical Trades Manager, MDBI

A seven-level underground carpark will be underneath the future headquarters of the Bank of the Philippine Islands.







→ Construction of the main building, which will be 325 meters long and 55 meters wide.



“  
The worksite is gigantic. We’ve never built a facility with these dimensions before.  
PIERRE-ÉRIC SAINT-ANDRÉ  
Deputy CEO, Bouygues Construction

## THE PHILIPPINES’ LARGEST DATA CENTER

One of the main thoroughfares in the town of Santa Rosa, an hour’s drive from Makati, is bustling with activity. Panasonic, Coca-Cola, and Toyota are among the numerous big companies that have built factories here. It is an ideal location for a data center, made even more strategic by being at the crossroads of three telecommunication networks and the main electricity grids. In September 2023, ePLDT, a subsidiary of PLDT, one of the country’s largest telecommunications operators, issued a tender for the construction of a hyperscale data center<sup>1</sup> with a storage capacity of 36 megawatts, the largest ever built in the Philippines. In the emerging data center market here, a total of 300 megawatts is targeted for 2025<sup>2</sup>. To win the contract, MDBI was able to point to Bouygues Bâtiment International’s experience in

constructing data centers. Worth a total of 175 million euros, it is the first contract outside of Makati and won through bidding. “We are constructing a main building with two floors measuring 325 meters long by 55 meters wide on a five-hectare plot of land. Those dimensions are unprecedented. It will house 18 server rooms and 4,500 computer cabinets,” says Bernard Yepes, senior construction manager at MDC. Also included in the project are an administrative building, a cold production building, a power supply substation, and a few ancillary buildings for the fire pump and wastewater treatment. “The construction site is gigantic. We’ve never built a facility with these dimensions before,” says Pierre-Éric Saint-André, deputy CEO of Bouygues Construction. Some 2,300 workers are hard at it day and night, seven days a week, to see that the project progresses as quickly as possible, in line with the customer’s wishes.

### REDUNDANCY AND SECURITY

In the event of a power outage, the data center will have 74 hours of autonomy thanks to the installation of 31 generators and electric batteries. To prevent overheating, cold water produced by refrigeration units will circulate through a network on the roof and then flow down into each server room. “To ensure continuous service, all equipment is duplicated. And if there is a leak? We close one network and open another,” says Nicolas Dano, head of the technical trades department at MDBI. “The technical trades are the cornerstone of the project; everything is structured around them.” The data center is being delivered in phases between summer 2024 and May 2025. As for security, with 770 cameras installed on-site and access controlled by badges and facial recognition, it will be extraordinarily tight. ●

1. Hyperscale data centers are specially designed to house thousands of servers and other equipment.  
2. The combined capacity of all data centers in the Philippines.



SPECIAL FEATURE  
FRANCE



BOUYGUES

SPORTS AND MAJOR EVENTS

# NEW PLAYING FIELDS





**FRANCE.** In the runup to the international sports events that will take place in Paris and elsewhere in France this summer, companies in the Group have been constructing, renovating, and maintaining several sports and transport facilities. An overview.

By Céline de Buttet, with Inès Gastelu

**01 ORANGE VÉLODROME STADIUM, MARSEILLE (BOUCHES-DU-RHÔNE)**

Bouygues Bâtiment Sud-Est and Equans

The principal sports facility in Marseille and the second-largest stadium in France, with a seating capacity of 67,000, the Orange Vélodrome has been used by the Olympique de Marseille football club since its inauguration in 1937. Between 2011 and 2014, Bouygues Bâtiment Sud-Est (GFC Construction at the time) reconfigured the stadium for Arema, holder of the public-private partnership contract with the city of Marseille. Bouygues Energies & Services, a subsidiary of Equans France, is responsible for the stadium's upkeep, maintenance, and major renovations until 2045.

**02 ROUCAS-BLANC NAUTICAL CENTER, MARSEILLE (BOUCHES-DU-RHÔNE)**

Spac (Colas)

The complete renovation of the Roucas-Blanc nautical center in Marseille was completed in June 2023. The project included the construction of approximately 7,000 sq. meters of buildings and the reorganization of 17,000 square meters of outdoor areas as well as redevelopment of the basin. The work was done by teams from Spac Port-de-Bouc. A 50-meter breakwater made of prefabricated elements was constructed to protect the basin from swells from the south. Two culverts were installed to restore water circulation in the basin, which has suffered from silting, thus improving

water quality. Nautical activities have taken place here since the 19th century.

**03 SPORT SHOOTING CENTER, ARGENTAN (ORNE)**

Colas A new sport shooting center has been built in the Normandy city of Argentan. Located on a six-hectare site, it has a 300-meter shooting range with electronic targets and several Olympic shooting ranges. All disciplines of the French Shooting Federation can be practiced there. Construction began in January 2023 and was completed in spring 2024. Colas carried out roadworks and installed utility networks.

**04 WHITEWATER STADIUM, ÉPINAL (VOSGES)**

Colas The Épinal whitewater stadium – a site for canoeing and related sports (playboating, whitewater swimming, rafting, tubing, surfing) as well as the national training facility for firefighters – was inaugurated in May 2022. Its 200-meter slalom basin is fed by the Moselle River. Accessible year-round, it meets current national and international standards for the sport. Colas contributed its expertise in earthworks, decontamination, and rock armoring. It also constructed pathways paved with its permeable light asphalt, Urbalith.

**05 OLYMPIUM RESIDENCE, VILLENEUVE-D'ASCQ (NORD)**

Bouygues Immobilier

See article page 38.





## SPECIAL FEATURE

### 01 CLEAN-UP OF THE SEINE FOR SWIMMING, PARIS Colas

Officially banned since 1923 due to poor water quality, swimming in the Seine has been possible again since the summer of 2024 thanks to the depollution of the river. Colas has contributed to this effort. In 2025, three swimming zones will open to the public in the 4th, 12th, and 15th arrondissements.

### 02 PORTE MAILLOT STATION, PARIS Bouygues Travaux Publics

A consortium led by Bouygues Travaux Publics supplied the civil engineering for the Porte Maillot station. This facility at the intersection of several public transport lines simplified access for the public to the Games venues. Featuring a five-level, open-air hall topped with a large glass roof, the station is 225 meters long, with 155 meters open to the sky. Its construction required the installation of diaphragm walls to depths ranging from 35 to 53 meters. The consortium is also constructing 6.1 km of tunnel between the Haussmann Saint-Lazare and La Défense stations as part of the Eole project, thus extending the RER E regional express line to Mantes-la-Jolie, 55 km west of Paris.

### 03 COURT OF ARBITRATION FOR SPORT AT THE PARIS LAW COURTS Bouygues Bâtiment Ile-de-France and Equans

The Court of Arbitration for Sport (CAS), an independent international institution set up to resolve legal disputes in the sports world, installed offices at the Paris Law Courts in mid-July for three weeks to promptly handle cases related to sports competitions. Each day, some 9,000 people come to the 160-meter-high building delivered by Bouygues Bâtiment Ile-de-France in 2017. Bouygues Energies & Services, a subsidiary of Equans France, is providing maintenance and various services to its users for 27 years.

### 04 AQUATICS CENTER AND ITS OVERPASS, SAINT-DENIS (SEINE-SAINT-DENIS) Bouygues Bâtiment Ile-de-France

See article page 44.

### 05 ADIDAS ARENA, PARIS Bouygues Bâtiment Ile-de-France

See article page 44.

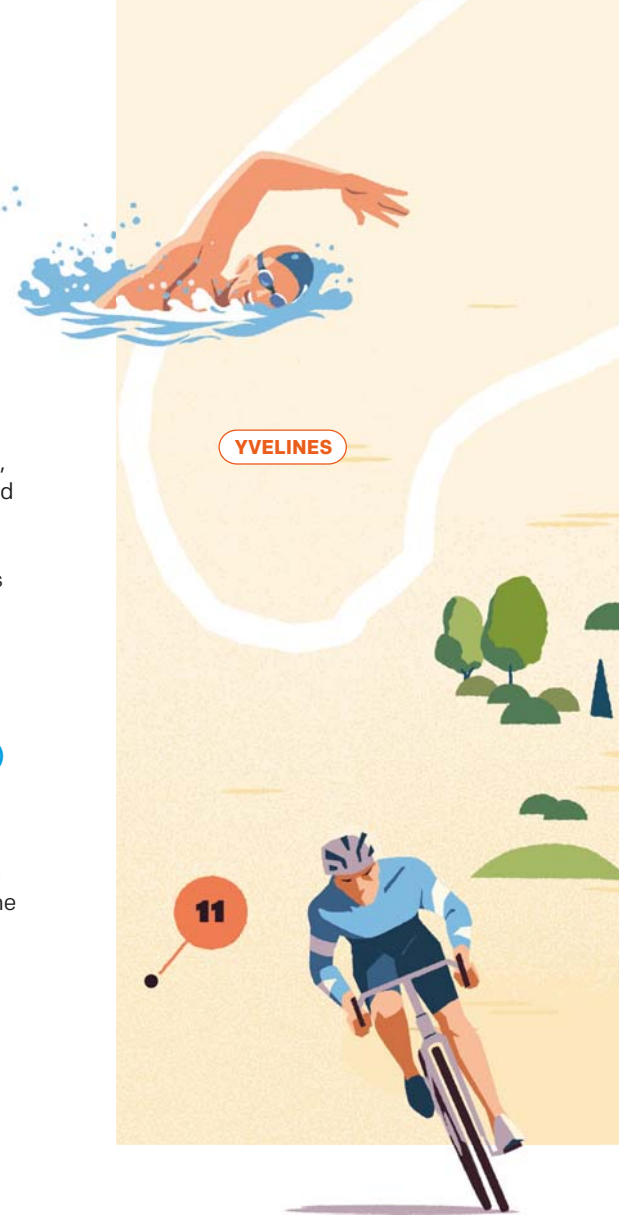
### 06 MULTISPORTS COMPLEX, LE BOURGET (SEINE-SAINT-DENIS) Colas Bâtiment

Colas Bâtiment constructed an eco-friendly multisports complex for the Olympic Delivery Authority (Solideo). Important social and environmental issues such as professional integration, thermal comfort, reuse of materials, and carbon footprint tracking were addressed in this project. Initially used as a training facility for climbing events during the summer of 2024, the gymnasium will be available later to local sports clubs and schools.

### 07 ATHLETES' VILLAGE, SAINT-DENIS (SEINE-SAINT-DENIS) Bouygues Bâtiment Ile-de-France, Equans and Colas

Three hundred and fifty site workers from Bouygues Bâtiment Ile-de-France constructed one of the four blocks of the Universeine project, a sustainable district where the Athletes' Village was located during the games before becoming a residential and business area. The Bouygues Construction subsidiary worked on 12 buildings totaling more than 500 housing units with a total area of 32,000 sq. meters. Thirty percent of the wood used in the structures was sourced from France, and 75 percent of the buildings were constructed using low-carbon concrete. Bouygues Energies & Services, a subsidiary of Equans France, supplied the public lighting, installing 164 light poles and 540 recessed lights. The color temperature<sup>1</sup> of the lighting can be adjusted according to the seasons and power reduced at night, both by remote control. Colas deployed its Qievo software on the site to regulate the "last mile" logistics flows (trucks, barges), thus reducing disturbances and nuisances for the neighborhood and avoiding the emission of 115 tons equivalent of CO<sub>2</sub>. This software won the award for Organization and Logistics at the 2024 Public Works Awards. Two Colas subsidiaries also participated in the project: Spac moved four 225,000-volt overhead lines underground to free up more than 80 hectares on the site,

1. Expressed in degrees Kelvin (K), the color temperature describes the appearance of light provided by a light source, ranging from warm yellow to cool blue.



and Tersen carried out earthworks and backfilling.

### 08 PLEYEL OVERPASS, SAINT-DENIS (SEINE-SAINT-DENIS) Bouygues Travaux Publics, Régions France

This Y-shaped structure is 700 meters long, with 300 meters crossing over 48 railway tracks, and 28 to 42 meters wide. It includes a pedestrian bridge, a road bridge with bus lanes, two bicycle paths, and general traffic lanes, as well as two inhabited areas. The pedestrian bridge was delivered for the Games to connect the Athletes' Village to the Stade de France to the west and to the Aquatics Center to the east. The road bridge will be delivered in 2026.





**09 FOOTBRIDGE BETWEEN LE BOURGET AND DUGNY (SEINE-SAINT-DENIS)**

**Colas and Colas Génie Civil**  
Colas completed the installation of the deck of the footbridge crossing over the A1 motorway between Le Bourget and Dugny. This structure made entirely of French wood is reserved for active mobility. It connects the sports and school park in Le Bourget to the Media Village, which will be converted into housing after the Games, and the Georges Valbon Park.

**10 STADE DE FRANCE, SAINT-DENIS (SEINE-SAINT-DENIS)**

**Bouygues Construction and Equans**  
Built for the 1998 FIFA World Cup hosted by France, the Stade de France was inaugurated on January 28 of that year. An elliptical, disc-shaped roof suspended 42 meters above the pitch is one of the 80,000-seat stadium's most distinctive

features. After financing, designing, and building the stadium, Bouygues Construction, working in a consortium, will continue maintaining and operating the facility until August 2025. In 2024, Bouygues Energies & Services, a subsidiary of Equans France, was contracted to supply the maintenance for the entire video surveillance system.

**11 VÉLODROME NATIONAL, SAINT-QUENTIN-EN-YVELINES (YVELINES)**

**Bouygues Bâtiment Ile-de-France and Equans**  
Constructed by Bouygues Bâtiment Ile-de-France, the world's largest velodrome opened in 2014. Bouygues Energies & Services, a subsidiary of Equans France, is operating and maintaining the facility for 27 years, ensuring that the Siberian wood track, whose sanding was supervised by its teams, retains its high-performance characteristics.

**12 THE GAMES ON TF1, PARIS TF1**

TF1 negotiated a sublicense with the American media company Warner Bros Discovery, holder of the rights for the Games, allowing it to access additional footage beyond the standard news rights, and to obtain accreditations for its journalists to interviews athletes. The Games were covered in the one o'clock and evening newscasts on TF1 and LCI as well as in the show *Bonjour! La Matinale* on TF1 and on the TF1 Info website.



SPECIAL FEATURE  
FRANCE



*Setting up the B.Truck in the safety zone at Dunlop curve no. 5 at the 24 Hours of Le Mans circuit.*



SPORTS AND MAJOR EVENTS

# FAST CARS, FASTER DATA

**TELECOMMUNICATIONS.** To avoid mobile network saturation during major sporting and cultural events, Bouygues Telecom has rolled out an innovative solution: a truck equipped with 4G and 5G antennas called the B.Truck. A demonstration at the legendary 24 Hours of Le Mans racetrack.

*By Julie Lang*





## SPECIAL FEATURE



*Thomas Sionnière and Alban Louvancourt, two technicians getting on-the-job training on the B.Truck.*



*Thomas Sionnière orients the antennas under the supervision of Vincent Toullelan.*



**O**n this cool April morning, the 24 Hours of Le Mans racetrack is deserted. The calm before the roar. In a few weeks, as many as 300,000 spectators will attend each of the motorsport events held here. To prevent saturation of the telecommunications network – for the public as well as for emergency services (police, firefighters, etc.) – the Organizing Committee partnered with Bouygues Telecom to find a solution. Their goal: to strengthen network coverage until 16 June, the date the famous 24 Hours of Le Mans race ends. The task of installing and configuring the B.Truck, a vehicle equipped with 4G and 5G antennas, is in the hands of the network operations team from the Greater West region. The work must be completed within 48 hours because the truck is parked in the safety





For greater safety, the mechanical mast has been replaced by a hydraulic mast that is adjusted remotely.



The B.Truck was deployed at the circuit for car and motorcycle races held there until mid-June.



11

B.Trucks operating in France

329,000

spectators at the 24 Hours of Le Mans in 2024

30%

more data transmitted on the network during big events

“

Setting up the B.Trucks is always a ‘commando’ operation since there is little time to adapt to the different conditions at each site.

MATHIEU GOURY

Manager, Mobile and Fixed Network Operations, Secteur Bretagne and Pays de la Loire, Bouygues Telecom

zone of Dunlop curve no. 5, and practice runs are scheduled on the circuit. A race against time begins.

#### 48 HOURS BY THE CLOCK

The first day is spent on the physical installations. The 15-ton truck is stabilized using four feet, with care taken to avoid soft or wet ground. Then, under the supervision of Vincent Toullelan, two technicians, Alban Louvancourt and Thomas Sionnière, who are still in training on the truck, put on their helmets and, after checking that all safety measures have been taken, climb onto the roof and find the azimuth<sup>1</sup> of the antennas mounted on a metal mast using a compass. Two 4G antennas and two 5G antennas, the former weighing 90 kilos

each and the latter 30 kilos, are pointed towards the stands.

“The mechanical mast on this truck has been replaced by a hydraulic mast that can be adjusted by remote control, making it safer,” says Mathieu Goury, manager of mobile and fixed network operations in the Secteur Bretagne et Pays de la Loire at Bouygues Telecom. Sionnière raises the mast to a height of 17 meters. Twenty-four thick cables, called feeders<sup>2</sup>, are then connected between the antennas and the truck: a radio frequency signal is created and amplified by RRU<sup>3</sup> boxes before being broadcast by the antennas. Fiber optics supplied by the organizers eliminate the ...

2. Electrical power cables.

3. The Remote Radio Unit connects mobile devices (smartphones, tablets, etc.) to the operator’s network.

1. The direction in which an antenna is pointed.





## SPECIAL FEATURE

... need to add a microwave link<sup>4</sup>, saving the technicians valuable time by directly connecting the truck to Bouygues Telecom's existing network. Another new feature of this vehicle: radio modules specifically for SFR have been added for use in the Crozon zone<sup>5</sup>. After a few final adjustments to stabilize the truck using four yellow guy-lines, the whole setup has the festive appearance of a maypole.

The following morning, it's the final stretch. Configuration of the truck's software is managed remotely by Bouygues Telecom's Support teams. The last communications tests are completed a little before one o'clock, just in time for Mathieu Goury and his team to catch a glimpse of the first cars taking to the circuit. After the event ends on 16 June, Benoît Niobey, a mobile radio design engineer at Bouygues Telecom, will conduct a performance review and meet with the organizers to

4. A system for transmitting digital signals grouped into frequency bands.

5. Zone comprising less densely populated regions where Bouygues Telecom and SFR pool their networks to improve the quality of 2G/3G/4G mobile services.



A practice run on the 24 Hours of Le Mans racetrack.

discuss modifications to the equipment and their implementation in future years.

### 5G AND GREEN HYDROGEN

Available on B.Trucks since 2020, 5G is an essential means of adding capacity to boost data speeds. It has become especially useful with the increase in live streaming and the sharing of HD photos. Michael Valcke, performance manager at Bouygues

Telecom, notes: "Our network is registering up to 30 percent more data traffic each year at events, with a big increase in uplink traffic," that is, the data sent by users.

Another innovation on the B.Trucks: in cases where the customer cannot provide electrical power, Bouygues Telecom, in partnership with Bouygues Energies & Services (a subsidiary of Equans) and the company EoDev, has developed a system



← Checking to see that the B.Truck antennas are connected to the network.

↑ Connecting feeder cables to the RRUs, which will produce and amplify radio frequency signals that will be broadcast by the antennas.

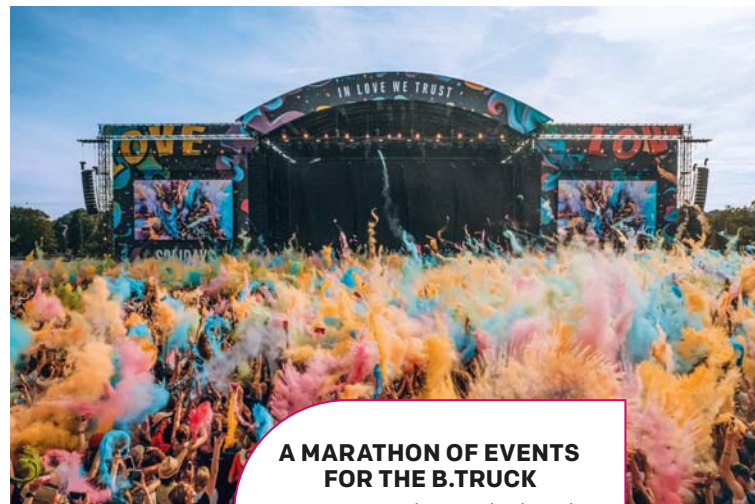




↑  
A Bouygues Telecom antenna tower at the center of the circuit displaying the colors of the 24 Hours of Le Mans.



←  
Alexandre Le Dorse, director, Regional and Heritage Relations, West Region.



**A MARATHON OF EVENTS FOR THE B.TRUCK**

Bouygues Telecom deployed its B.Trucks for the Games this summer. Each year, they are on hand at more than twenty sports and cultural events, including music festivals (We Love Green, Solidays (photo), Rock en Seine, and Vieilles Charrues), the Qatar Prix de l’Arc de Triomphe horse race, the Vendée Globe sailing race, the Gap-Tallard Air Show, and the maritime festivals in Brest and Sète, among others.

to supply electricity using green hydrogen<sup>6</sup>. Besides reducing CO<sub>2</sub> emissions by 80 percent, this solution produces one-thirtieth as much noise (-15 decibels) as a diesel generator.

**A FLEET OF 11 B.TRUCKS**

A total of eleven B.Trucks travel around France each year to provide the best network coverage possible. “They have performed so well that four new ones were

added to the fleet at the beginning of 2024,” notes Victor Delca, national B.Truck advisor. Bouygues Telecom also offers to install temporary masts in coastal areas in summer and the mountains in winter when the influx of tourists leads to sharp seasonal increases in traffic.

However, as Alexandre le Dorse, director of Regional Relations and Heritage at Bouygues Telecom, explains, “while municipalities prefer these temporary facilities to meet seasonal needs, the crowds attending certain regularly held events sometimes call for the installation

of permanent antennas.” This is the case at the 24 Hours of Le Mans circuit, where long-term collaboration with organizers has resulted in the installation of three permanent antenna towers. Network quality, always in pole position at Le Mans. ●

6. Renewable (green) hydrogen is produced by electrolysis of water using electricity coming exclusively from renewable energy sources.



SPECIAL FEATURE  
FRANCE

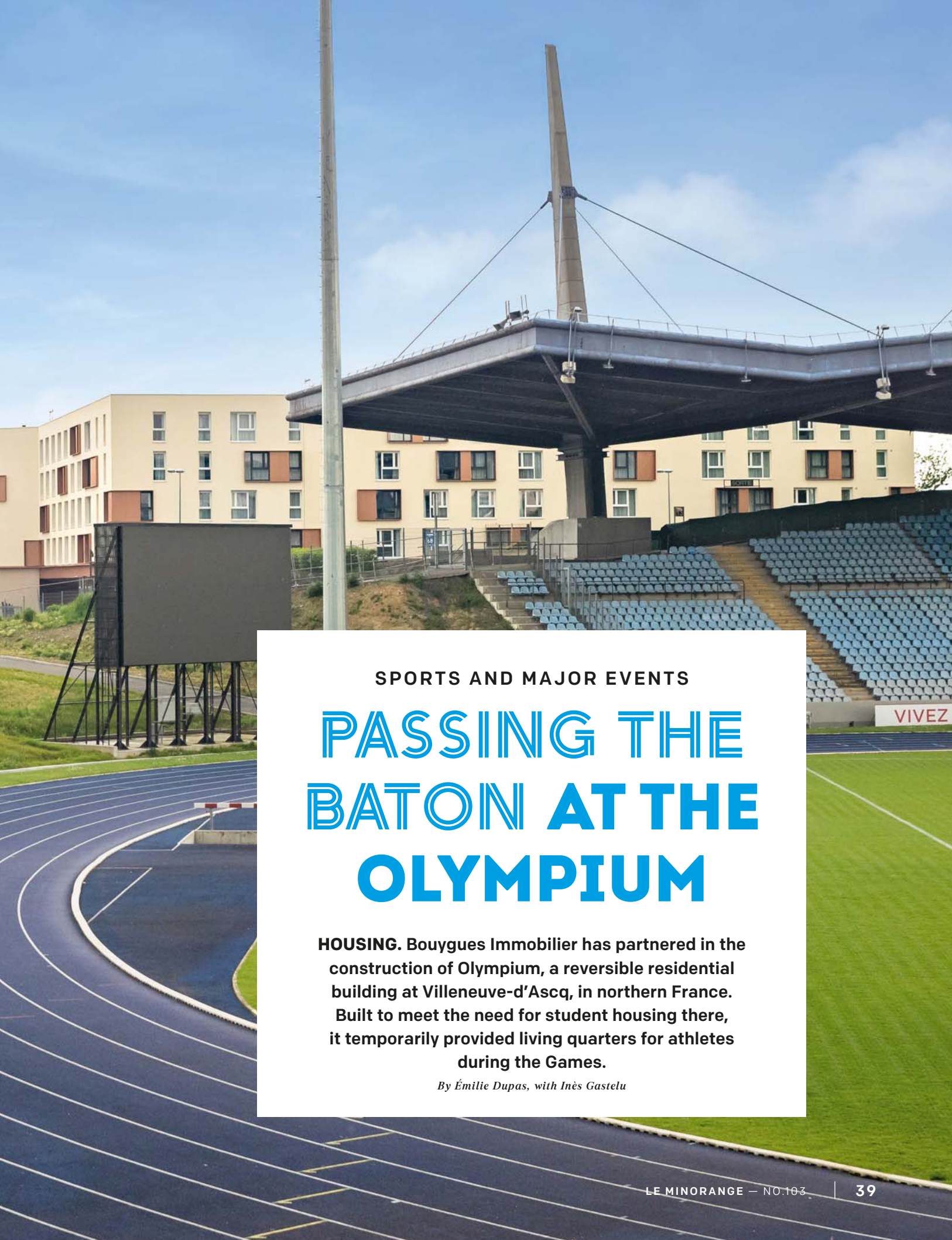


**Bouygues  
Immobilier**   
LA VIE COMMENCE ICI



*The Olympium residence at  
Villeneuve-d'Ascq overlooks the  
Stadium's signature blue track.*





SPORTS AND MAJOR EVENTS

# PASSING THE BATON AT THE OLYMPIUM

**HOUSING.** Bouygues Immobilier has partnered in the construction of Olympium, a reversible residential building at Villeneuve-d'Ascq, in northern France. Built to meet the need for student housing there, it temporarily provided living quarters for athletes during the Games.

*By Émilie Dupas, with Inès Gastelu*



## SPECIAL FEATURE

**O**n this May evening, the supporters of LOSC, the local football club, are feeling down after seeing their team lose to Olympique Lyonnais at Stade Pierre Mauroy. A few months from now, basketball and handball players from around the world will be competing in the Games at this impressive sports venue. To house these athletes during the Games and later on, students and young professionals working in the area, the Lille Europe Metropolitan Area (MEL) asked the SCCV Campus Stadium group, composed of Bouygues Immobilier and Adim (a Vinci subsidiary), to construct the Olympium, a residence with 495 one-to-three-bedroom units, including 115 coliving spaces, located in Villeneuve-d'Ascq. The co-developers on this winning team each had a specific role: Adim oversaw the construction,

while Bouygues Immobilier marketed the housing to individual buyers. They relied on the architectural firm AVANTPROPOS for the design and on Sergic for project management.

Construction began in June 2022 and was completed in May 2024. About twenty companies were involved, most of them local. "The schedule was very tight," says Carine Raj, director of Bouygues Immobilier's Hauts-de-France regional agency. "We and our partners responded to the call for tenders in two months. After the project was awarded, the building permit was issued two months after the application was submitted." Also impressive, the 495 housing units were built in just 420 days. Assia Becar, who oversees sports facilities at MEL, adds: "This is a very successful public-private partnership. When everyone is focused,



“  
The project was conceived for the post-Games to address the need for student housing in the region.

GILLES DEGOUTTE  
Director of Operations,  
Bouygues Immobilier

### THE PROJECT AT A GLANCE

- **495 one-to-three-room** units (380 for students and 115 coliving)
- **Shared amenities:** a laundry room, restaurant, gym, game room, and music room
- **14,526 m<sup>2</sup>** of floor area
- **Delivery** in May 2024



Located on the former site of a city car park, the residence has a serpentine shape to obtain the maximum surface area on this rectangular plot of land.



Acoustic insulation was important for the rooms facing the boulevard.





←  
Olympium has pleasant areas where residents can meet and chat like this terrace overlooking a landscaped garden.

←  
Quirky signs like this one in the gym create a playful atmosphere in the residence.



**ASSIA BECAR**  
Sports Facilities  
Manager, Lille Europe  
Metropolitan Area



**GWENDOLINE GOMES**  
Project Manager,  
Sergic



things get done quickly.” Some parts of the building were prefabricated. “For example, the bathrooms in the coliving spaces were delivered ready to install, which saved time,” explains Larbi Iderdar, technical manager at Bouygues Immobilier.

#### A REGIONAL HERITAGE

Some events scheduled for the French capital will be moved to Lille. Around 1.4 million visitors are expected there. Five hundred athletes from 54 delegations will be housed in the new residence starting in June. They will be just 15 minutes by car from Stade Pierre Mauroy, the competition venue, and able to train at nearby facilities such as the Palacium gymnasium and the Stadium sports complex. “All that’s left is to

enclose Olympium and the Stadium complex to create a village of about 15 hectares during the competition,” points out Becar. Restaurants will be created on-site, and inside the residence, some common areas will be temporarily converted into rooms where athletes can rest or get massages. Temporary signage will also be installed. “Thirty-four Sergic employees certified for the Games will be on hand during the competition to ensure service in case of power outages or leaks. This will give us the chance to check out the building before the students arrive in September,” explains Gwendoline Gomez, the project manager at Sergic. “After the competition ends on August 15th, we will have 15 days to get everything in shape.” ●●



## SPECIAL FEATURE

•••

At that point, the scene will change: students will move into the rooms, and the 115 coliving units will be available to young professionals working nearby and to athletes from local clubs. “With two universities in the area, more student housing is needed,” notes Becar. “The residence is close to public transport, with the campuses just 15 minutes away by metro. The coliving units meet the need for short-term rentals for people on business trips – there are numerous companies headquartered in the city – and for athletes training with local clubs. The project is part of a broader infrastructure plan for the area that includes the modernization of the Stadium (renovation of stands, locker

rooms, and lighting) and the creation of a sport-health campus, a development involving Bouygues Immobilier that will include offices and sports training schools.

### A FUNCTIONAL AND REVERSIBLE RESIDENCE

The white and ocher Olympium blends in perfectly with its surroundings. “We wanted to fit in with the neighborhood but still give the residence a distinctive personality to assert its presence,” explains architect Ghislain Pairon. “The dynamic design of the facade is echoed in the rooms and common areas to create a lively atmosphere without adding color everywhere.” Built on a narrow triangular plot, the

residence has a serpentine shape to make optimal use of the land. It also includes a landscaped area with bleachers, a nod to the stadium on the ancient site. Curved benches are another allusion to the Games. This won’t be the only trace of the athletes’ presence. The 2.20-meter beds and all the furniture in the rooms will remain. “This is a student residence that will be used for sports competitions, not the other way around,” notes Gilles Degoutte, director of operations at Bouygues Immobilier. The furniture was purchased by the individual investors, who will become the owners of the rooms rented to students.

In the common areas on the ground floor, residents will benefit from a restaurant,



←  
*Some rooms have a view of the track at the Stadium.*

→  
*Larbi Iderdar, Technical Manager, and Gilles Degoutte, Director of Operations, at Bouygues Immobilier.*



←  
*The rooms are functional, with a kitchen area and bathroom (shown here, a one-room unit).*







The cafeteria area in the residence looks out on the Stadium.



Adjoining the residence is a 300-space bike parking.



**VILLENEUVE  
D'ASCQ**  
A SCHOOL  
AND SPORTS  
TOWN

**NO.1**

university center  
in the region, with  
2 campuses

**45,000**  
students

**23**

gyms, including  
the Palacium

**4**

stadiums, including  
the Stade Pierre  
Mauroy and  
the Stadium

**57**

practice facilities

**2**

swimming pools



The curved benches are an allusion to the symbol of the Games.



The white and ocher Olympium blends in perfectly with its surroundings.

laundry room, gym, game room with a pool table, connected mailboxes for receiving packages, and even a music room. Olympium also has parking spaces and a 300-space bike parking with charging stations for electric bikes. On the side of the building facing the boulevard, the rooms are soundproofed, with air vents placed next to the windows instead of above to

reduce noise. Some rooms offer a view of the Stadium track, where Marie-José Pérec set the French 400-meter record at the European Championships in 1995. An inspiring sight that might motivate future residents to excel in their fields! •



SPECIAL FEATURE  
FRANCE

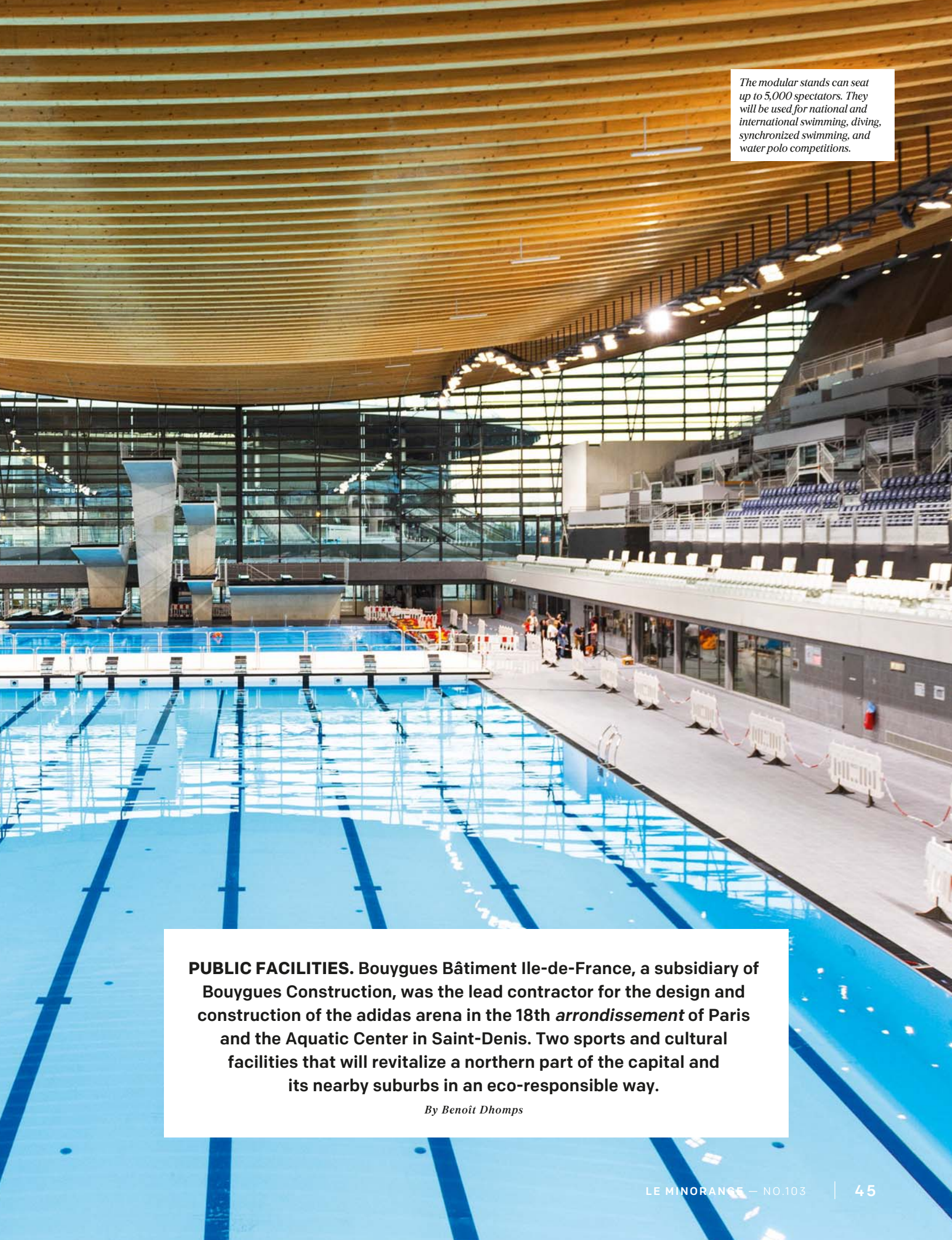


BOUYGUES

SPORTS AND MAJOR EVENTS

**TWO NEW  
SPORTS SHOWCASES  
IN PARIS AND ITS  
SUBURBS**





The modular stands can seat up to 5,000 spectators. They will be used for national and international swimming, diving, synchronized swimming, and water polo competitions.

**PUBLIC FACILITIES.** Bouygues Bâtiment Ile-de-France, a subsidiary of Bouygues Construction, was the lead contractor for the design and construction of the adidas arena in the 18th *arrondissement* of Paris and the Aquatic Center in Saint-Denis. Two sports and cultural facilities that will revitalize a northern part of the capital and its nearby suburbs in an eco-responsible way.

*By Benoît Dhomps*





The Aquatic Center is connected to the Stade de France by a footbridge reserved for soft mobility.

## A NEW WAVE AQUATIC CENTER

### THE PROJECT AT A GLANCE

- **4,680 sq. m** of photovoltaic panels
- **136,000 hours** of workforce integration
- **1,200 tonnes of bio-based materials**
- **90% of waste** from the site recycled
- **100% of the earth reused** at the site
- **90% of energy** consumed is renewable or recovered

**MATHIEU TOMMY-MARTIN**  
Project Director



Seen from above, it looks like a huge wave on which the Stade de France is getting ready to surf. With its striking architecture, the Aquatic Center in the Paris suburb of Saint-Denis is already as iconic as its impressive neighbor. “We designed this roof to reduce the area that would need to be heated and ventilated,” explains Clémence Le Moyne, project manager at Bouygues Bâtiment Ile-de-France, leader of the consortium chosen to design and build the Aquatic Center. “It has 91 beams, making it the largest concave wooden structure in the world. This design saves energy on one third of the volume of the hall, which is 30 meters high, 106 meters wide, and 114 meters long.” Spread across this concave roof is one of the largest urban solar farms in France. Its 4,680 sq. meters of photovoltaic panels will supply 25 percent of the total electricity consumption of the facility.

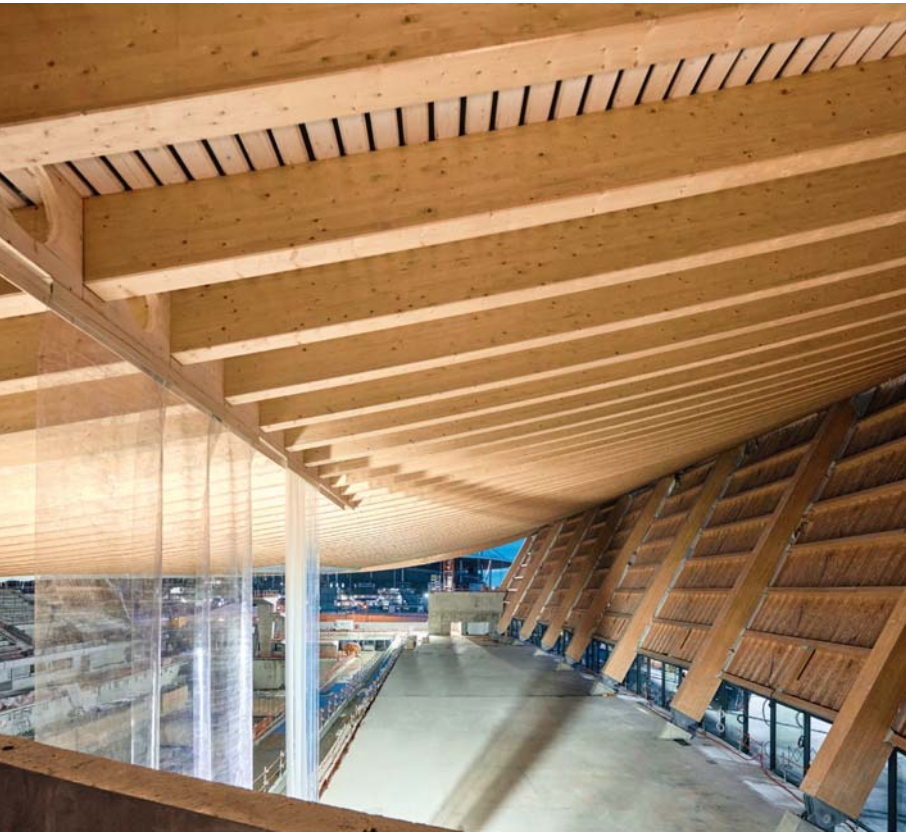
An underground data center will provide basic heating for the 70-meter main pool, while a rainwater recovery system will be used for cleaning roadways and watering outdoor green spaces. Thanks to these installations, 90 percent of the energy consumed by the site will be either recovered or renewable energy. This performance has earned the facility “NF HQE Equipements Sportifs<sup>1</sup>” certification.

### SWIMMING BABIES AND CHAMPION SWIMMERS

In January 2024, two months before the project’s completion, Yves Arnoux, who oversees the finishing works at Bouygues Bâtiment Ile-de-France, meticulously inspects the doors, the paint, the floor covering... everything. He stops and gazes at

1. The NF HQE™ Equipements Sportifs certification applies to the eco-construction, eco-management, comfort, and health performance of a construction project.





↑  
Renewable or recovered energy will supply 90 percent of the center's consumption (artist's rendering).



↑  
The roof has 91 beams, making it the largest concave wood in the world.

←  
Of the total 900,000 hours worked, 136,000 hours were done in workforce integration.

↓  
The 4,680 sq. m of photovoltaic panels will supply 25 percent of the facility's electricity consumption.



the already-filled swimming pools. "I didn't learn to swim until I was twelve years old, but then I really loved it. It makes me proud that the young people in the neighborhood will have this brand-new facility available to them.

Giving people an opportunity to learn to swim is an important goal for the project's initiator, the Greater Paris Metropolis, which includes about one hundred municipalities around the capital. "Seine-Saint-Denis is one of the departments where there are the most children who cannot swim when they enter middle school," says Le Moynes. "At the Aquatic Center, very young children and families will have a recreational area with a multipurpose pool and a solarium in the garden. For older children, we built a shallow pool where they can safely learn to swim."

The center also has a 70-m-long pool for more experienced swimmers and a diving pool. Surrounded by modular stands that can seat up to 5,000 spectators, these pools will also be used for national and international competitions in swimming, diving, artistic swimming, water polo, and other events. The French Swimming Federation and the Plongeon France center will ...



## SPECIAL FEATURE

... also be based here. The floor of the main pool is movable, allowing the depth to be adjusted for a variety of uses (swimming lessons for babies, for older children...). The site will also feature a fitness area, climbing walls, a five-a-side football pitch, padel tennis courts, a dining area, and a sports equipment recycling center.

### GIVING A BOOST TO EMPLOYMENT

The Aquatic Center is connected to the Stade de France forecourt by a bridge reserved for soft mobility. It is 100 meters long, 20 meters wide, and passes over the 13 lanes of the A1 motorway and a major boulevard. It was constructed by Bouygues Travaux Publics<sup>2</sup> in a complex operation that involved 120 workers and took more than 54 hours in August 2022.

As many as 250 people worked on the construction site at one time. "Of the total 900,000 work hours, 136,000 were done as part of a reintegration program," points out Arnoux. "We hired people re-entering

the workforce after long periods of unemployment or who have had to deal with accidents in their life."

Bouygues Telecom provides 4G and 5G service for all operators (Free, Orange, and SFR) on site through a pooled network for which it supplies the maintenance. The Network teams set up 25 antennas to cover the areas assigned to the public, athletes, official delegations, and technicians during sporting events. An admirable project firmly rooted in the community. ●

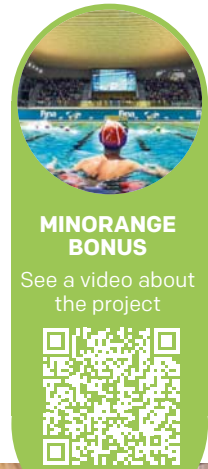
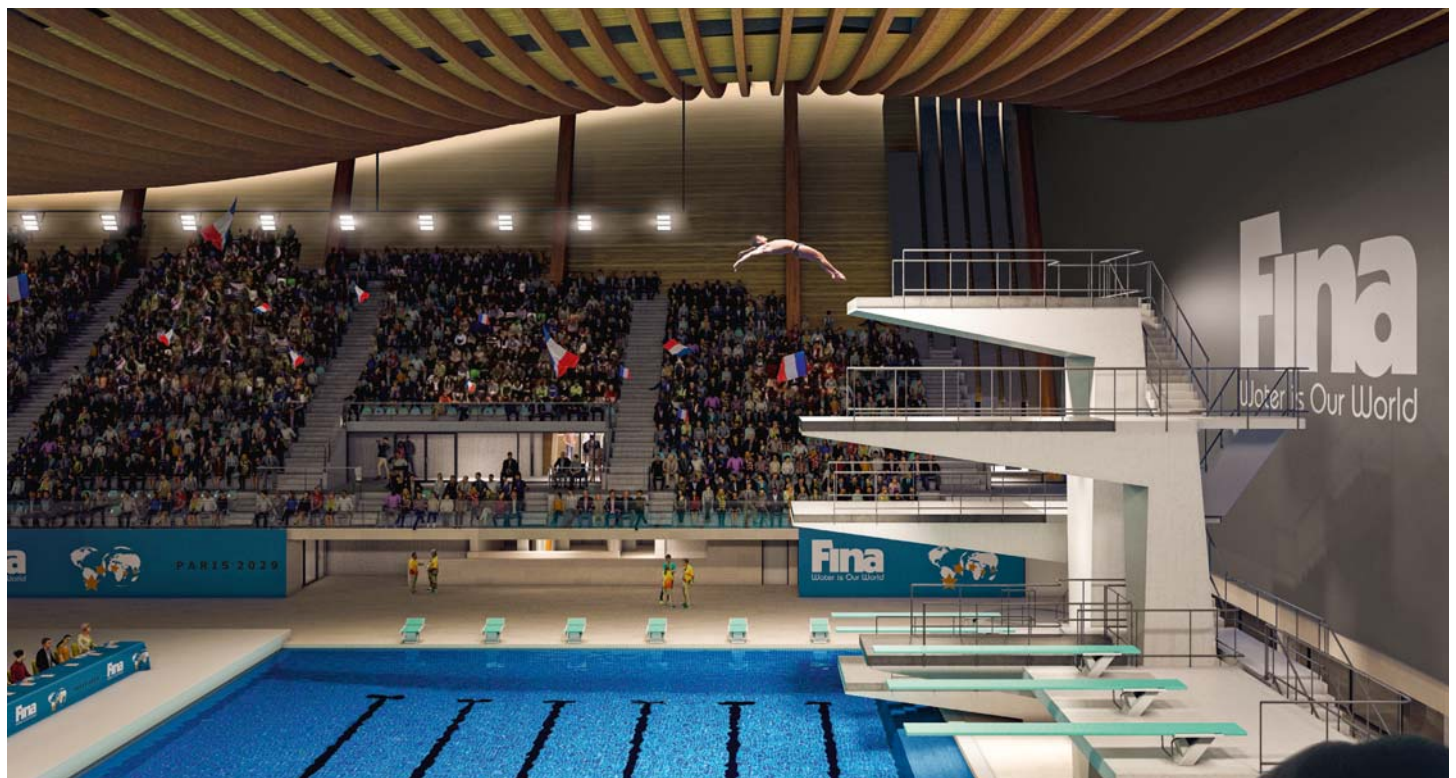


*The center will also house a fitness area, climbing walls, a five-a-side football pitch, padel tennis courts, a restaurant area, and a sports equipment recycling center (artist's rendering).*



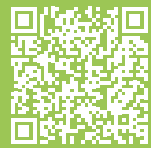
*The French Swimming Federation and the Plongeon France center will also be based here (artist's rendering).*

2. In a consortium including Eiffage Métal, Mammoet, and Aximum (Colas).



MINORANGE  
BONUS

See a video about  
the project





The 6,300-sq.m vegetalized roof, the largest in Paris, provides migrating birds with a stopover spot (artist's rendering).



“

For the adidas arena, we had to propose 31 different configurations and comply with 10 sports-related certifications.

MEHDI MOEKET  
Construction Manager,  
Bouygues Bâtiment  
Ile-de-France

## THE PROJECT AT A GLANCE

- **6,300 sq. meters of vegetalized roof**
- **30% of the concrete used was low-carbon** (12,000 cu. m)
- **850 sq. m of raw-earth bricks**
- **96% of waste** from the site recycled

**MEHDI MOEKET**  
Construction  
manager



## PARIS GETS A NEW ARENA

Less than four kilometers south of the Aquatic Center and six kilometers north of the Roman arenas of Lutetia, Bouygues Bâtiment Ile-de-France has constructed the adidas arena under a design, build, and maintenance contract awarded by the City of Paris. The facility will be the home of the Paris Basketball Club and also serve as a concert hall. Along with two gyms for local associations, schools, and clubs in the La Chapelle neighborhood, the arena will also feature a panoramic terrace with a dining area, a “sensory room” to seat people with behavioral or autistic disorders during events, and retail spaces. Some 130 events will be held here annually. “What the City of Paris asked us for was not just a structure, but functionality and multiple uses,” says Mehdi Moeket, construction manager at Bouygues Bâtiment Ile-de-France. “We had to propose thirty-one different configurations and comply with

ten sports-related certifications.” To provide this modularity, telescopic bleachers were installed in the lower stands. When slid out, they increase the seating capacity from 8,000 for basketball games to 9,000 for concerts. Designed to facilitate access for people with reduced mobility, the adidas arena is the first in France to meet “Universal Accessibility level AA” standards.

Above the basketball court is a black cube. “It’s like a giant LED television with 360-degree screens, like what’s typically found in basketball arenas in the US,” notes Juliette Foissaud, construction engineer at Bouygues Bâtiment Ile-de-France. “It allows all the spectators to see the action and replays.” It was designed by Bouygues Energies & Services (a subsidiary of Equans), which is responsible for audiovisual equipment, technical systems (heating, ventilation, plumbing, high- and low-voltage wiring), and technical maintenance of the site for ten years. For this ...



## SPECIAL FEATURE



All-timber roof framework in the gyms, combined wood-concrete floors... everywhere the same goal: to use bio-based materials whenever possible.



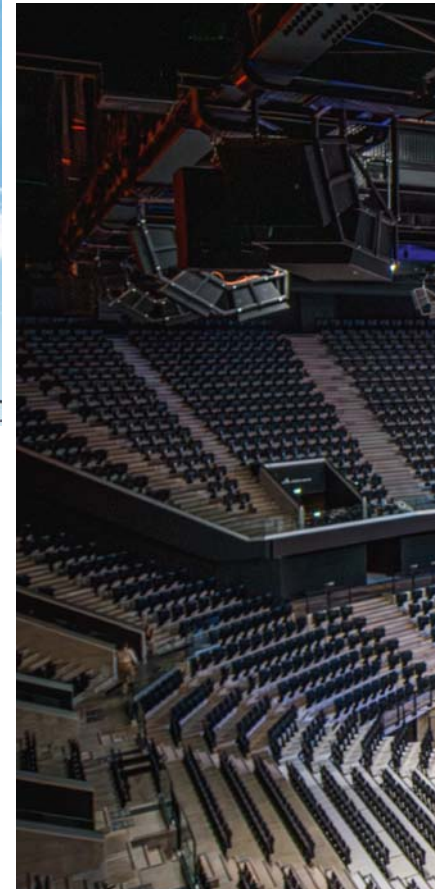
The adidas arena was built on the former site of a 26,000-sq.-m, six-story building that housed a bowling alley and carpark.



During 30 months, as many as 450 site workers were on the job at peak times.



The arena will be the home of the Paris Basketball Club as well as a concert venue.



... project, Bouygues Energies & Services will also perform major maintenance of the building envelope during ten years of operation. It was a collaborative project, with three other Group subsidiaries also involved in the construction. The adidas arena was built on the former site of a 26,000-sq.-meter, six-story building that housed a bowling alley and carpark and that was demolished by Premys, a Colas subsidiary specializing in clean-up, asbestos removal, and deconstruction. Elan provided advice on planning, biodiversity, and carbon footprint issues during the design and construction phases, while Brézillon dealt with earthworks, networks, and decontamination during the construction phase.

### BUILDING SUSTAINABLY

There were up to 450 workers on the construction site at peak times over a 30-month period. Of the more than 900,000 hours

worked, 133,000 were performed by people who had previously been unemployed for a long period. In a symbolic gesture, the first brick laid in October 2023 was made of raw earth and manufactured by a local cooperative from recycled debris from the Grand Paris Express construction sites and elsewhere. All-timber roof framework in the gyms, combined wood-concrete floors... everywhere the goal was the same: to use bio-based materials whenever possible. "In one of the two gyms, we built 750 wood bleacher seats," says Foissaud. "On this site, 30 percent of the concrete is low-carbon<sup>1</sup>, and for the first time in France, we poured ultra-low-carbon concrete produced by an on-site concrete plant." A geothermal plant installed at the adidas arena will meet the

1. Low-carbon concrete consists of industrial cement mixed with mineral compounds such as calcined clay, fly ash, or blast furnace slag. Depending on the mix, it is possible to reduce the carbon footprint of the concrete by 70 percent.

facility's heating needs as well as supply heat to the municipal networks. Energy consumption will thus be one-third lower than at a "classic" arena. Rainwater will be collected to cover all sanitary needs.

"For the roof, we chose a waterproofing system made of bio-based materials such as coconut fiber insulation and wood panels," explains Foissaud. "And on top of the roof, we added vegetated soil similar to tundra or scrubland. Its 6,300 square meters make it the largest green roof in Paris. It will serve as a stopping place for migrating birds too." In addition to providing good thermal insulation, these multiple natural layers will improve acoustics during concerts.

The adidas arena was delivered on 31 January 2024, with the first spectators arriving on 11 February 2024. The Aquatic Center will open to the public in June 2025. Two winners when it comes to sports projects in Paris! ●





### SEATS MADE FROM 100% RECYCLED PLASTIC

The seats in the stands of the adidas arena and the Aquatic Center, which were supplied by the French startup Le Pavé, are made from 100 percent recycled plastic. This represents a reduction in greenhouse gas emissions of 70 percent per square meter, compared with equivalent products. At the Aquatic Center, 8.5 tonnes of locally produced plastic waste (caps collected from construction sites or nearby schools) were recycled, and the emission of 12.5 tonnes of CO<sub>2</sub> equivalent was avoided. At the adidas arena, nine kilograms of plastic waste was used to make the recycled plastic for each seat, or a total of 68 tonnes of plastic waste. Altogether, approximately 100 tonnes of plastic were recycled to produce nearly 11,000 seats: 3,000 at the Aquatic Center and 7,800 at the adidas arena!







SPORTS AND MAJOR EVENTS

# GAME PLANS OF CHAMPIONS

**ATHLETES.** In stadiums and gymnasiums, the passion of these five athletes for their sport – and the values of Bouygues – are on full display. Here they tell us about their careers, in sport and in the businesses of the Bouygues group.

*By Céline de Buttet, Benoît Dhoms, Émilie Dupas, Laura Franchet and Inès Gastelu*

“

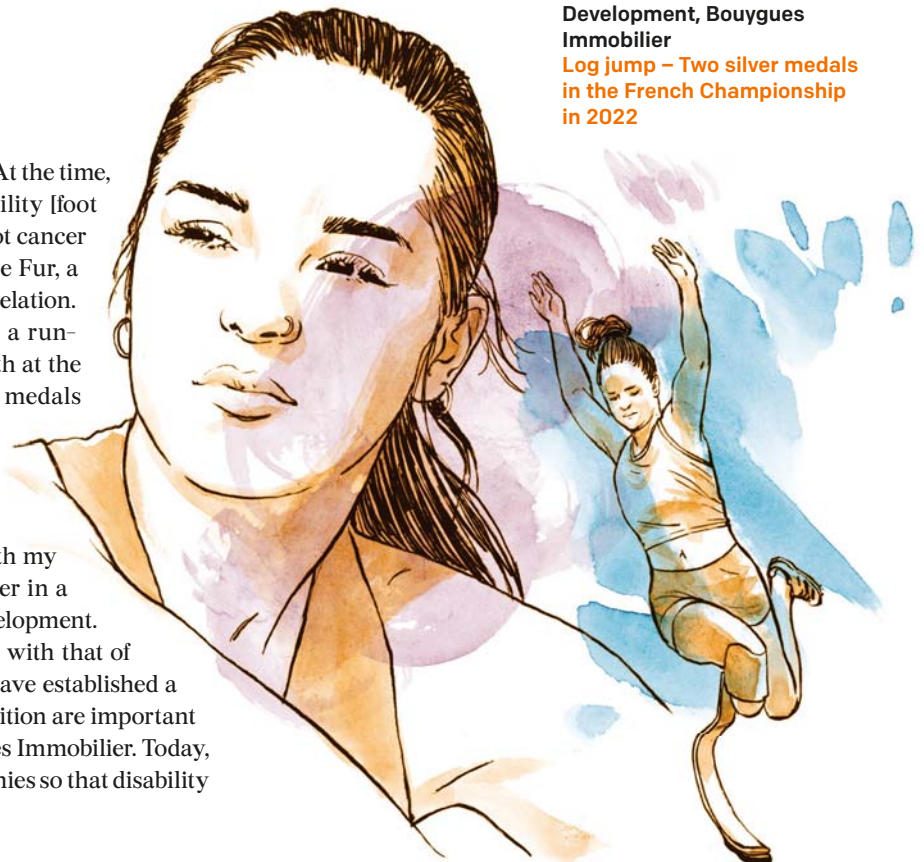
Disability must not remain a taboo in companies.

**T**he first sport I played was handball. At the time, I had difficulty accepting my disability [foot amputation at the age of 11 due to foot cancer – ed.]. In 2017, I met Marie-Amélie Le Fur, a nine-time Paralympic medalist. It was a revelation. I found my path by trying long jump with a running prosthesis. Since then, I have placed fifth at the European Championships, won two silver medals at the French Championships, and placed ninth at the Tokyo Games in 2022. That experience in Japan remains my greatest memory. When I saw my name on the stadium screens, I cried with joy. In parallel with my sports career, I work at Bouygues Immobilier in a work-study job in the area of property development. I train six times a week. Balancing work life with that of a high-level athlete is not always easy, so I have established a rigorous routine. For me, respect and competition are important values, and they align with those of Bouygues Immobilier. Today, I am trying to raise awareness among companies so that disability is no longer a taboo. •*B.D.*

## TYPHAINE SOLDÉ

Work-Study, Property Development, Bouygues Immobilier

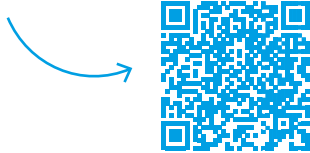
Log jump – Two silver medals in the French Championship in 2022





## The Ambassadors STARTING B.

As part of Starting B., a program that organizes actions to raise awareness of disabilities, the Group provides financial support to the high-level Paralympic athletes Nantenin Keita (track and field), Gwladys Lemoussu (triathlon), Typhaine Soldé (track and field), and Claire Supiot (swimming). Hear them as well as Audrey Cayol, Alexis Hanquingquant, and Jean-Christophe Rambeau talk about their sports careers in a series of podcasts.



“  
By arranging  
my work  
schedule,  
I can play  
basketball  
almost  
every day.

I grew up in a family of basketball players and started playing the sport at the age of four. Two years after my accident, in the 2000s, I began wheelchair basketball. My love of sports is what kept me going. I have been playing with the French team since the Athens Games in 2004. A teammate asked if I would be interested in working at Bouygues Telecom. Thanks to an occupational integration contract between Bouygues Telecom and the French Basketball Federation, I joined the company in April 2013. I have fixed working hours in the store, and my work schedule can be adjusted

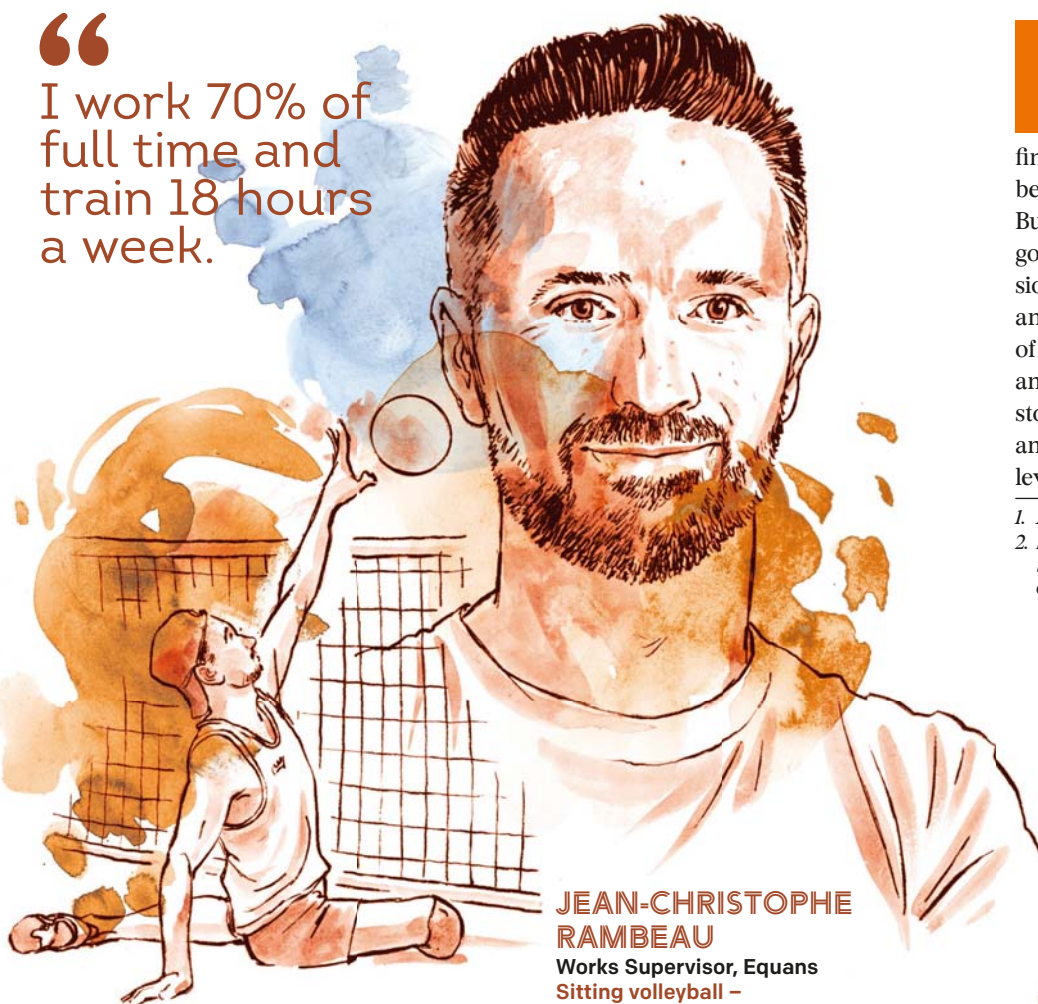
for competitions and training, which allows me to play basketball almost every day. I have won five French Championships titles and a silver medal at the 2010 World Championships in Birmingham, UK. It was the highlight of my sports career. Although we started the competition poorly, we have lost to Australia in the final by only seven points. Today, at 42, I can continue working and playing basketball just as I want. With a good lifestyle and proper preparation, it's not uncommon for wheelchair basketball players to continue competing well into their fifties. • L.F.

**AUDREY CAYOL**  
Store Sales Advisor,  
Bouygues Telecom  
Wheelchair basketball –  
World vice champion  
with the French team in 2010





“  
I work 70% of full time and train 18 hours a week.



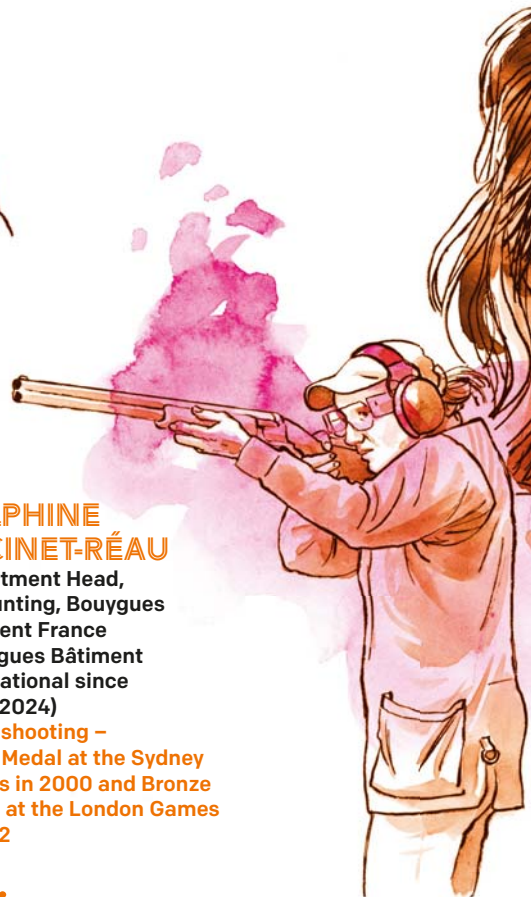
**JEAN-CHRISTOPHE RAMBEAU**  
Works Supervisor, Equans  
Sitting volleyball –  
French champions in 2023  
Selected for the Paris Games  
in 2024\*

**F**ollowing a motorcycle accident in 2016, I ended up having my leg amputated below the knee. At the time I was a site manager at the Equans agency in Lattes, Hérault. The company was very supportive during this ordeal and took the initiative to buy me a blade [running prosthesis - ed.] so that I could get back to sports and recover a taste for life: an invaluable gift. I had been very athletic previously, and I took up running to get back into good physical condition. In June 2019, I learned that the French Paralympic and Sports Committee was organizing a detection program, the process by which athletes with disabilities are directed to the sports in which they will perform best. It was the Sitting Volleyball Federation that spotted me. A sport that I had never played. I was skeptical at first, but I fell in love with this exciting, very physical, and highly technical discipline. I work a 70-percent schedule – my disability pension covers for the remaining 30 percent – and I train 18 hours a week. After the French Cup, the European Cup, the World Cup, and other competitions, I am embarking on the adventure of the Games thanks to a sabbatical leave and the financial support of Equans. • *C.d.B.*

\* When Le Minorange went to press, these results were not known.

joined Bouygues Construction in 2005. With the professional integration agreement, I was able to balance sports and work. It was sometimes difficult to find the right balance without a transition between competition and professional life. But I had a job, and the chance to work in good conditions. An athlete is like a precision machine, like a Ferrari: a grain of sand and everything goes haywire. So, peace of mind plays a big role in performance, and I can never thank Bouygues enough. I stopped competing internationally in 2017 and am involved now in integrating high-level athletes at Bouygues Bâtiment France.

1. Association for Managerial Employment.
2. Delphine Racinet-Réau carried the symbol of the Games during its journey across France and commented on the shooting events for French television.



**DELPHINE RACINET-RÉAU**  
Department Head,  
Accounting, Bouygues  
Bâtiment France  
(Bouygues Bâtiment  
International since  
1 May 2024)  
Sport shooting –  
Silver Medal at the Sydney  
Games in 2000 and Bronze  
Medal at the London Games  
in 2012

“  
We allow athletes to retrain in good conditions.



In early 2023, we launched an initiative with the National Sports Agency to select athletes to whom we could offer a professional integration agreement. It's a win-win situation: we allow athletes to retrain in good conditions, knowing they will unite employees around them through sports. We have met more than twenty athletes. After Alexis Hanquiquant [portrait right], we recently brought on board Clémence Beretta, a race walker. With APEC<sup>1</sup>, we also offer immersion internships. Badminton champion Thomas Rouxel did one before being hired on a fixed-term contract. And we hope to persuade other champions to join us!<sup>2</sup> • É.D.



**ALSO AT THE PARIS GAMES**  
**Clémence Beretta**, a Bouygues Bâtiment France employee, came 15th in the 20-kilometre race walk and 11th (French record) with Aurélien Quinion in the marathon-walk mixed relay.  
**Alexis Sanchez**, an engineer at Equans France, finished 5th in the para-rowing single sculls event.  
 Supported by the Group via Starting B., **Gwladys Lemoussu** came sixth in the women's para triathlon whereas para-athlete **Nantenin Keita** was selected for the Games in the 100 metres and 400 metres events (when *Le Minorange* went to press, these results were not known).



“  
 I represent  
 Bouygues in  
 the competitions.”

**ALEXIS HANQUINQUANT**  
 Health and Safety Advisor, Bouygues Bâtiment Grand Ouest  
 Para-triathlon – Six-time World Champion and European Champion  
 Gold Medal at the Tokyo Games in 2021 and at the Paris Games in 2024

I've always been passionate about sports. After playing basketball for ten years and then becoming the French full-contact boxing champion, I had an accident at the age of 24 that cost me a leg. I then discovered the triathlon, which sparked a desire to live and succeed. A few years ago, lying on my hospital bed, I told my wife that I was going to compete in the Paralympics even though I had not even tried a prosthesis yet. Today, nothing stops me. I am the world champion six times in a row, a six-time European champion, and gold medalist at the Tokyo Games. I want to inspire those who feel different and prove to them that nothing is impossible. I have been working at Bouygues Bâtiment Grand Ouest since 2018, right now in the Prevention, Health, and Safety department. It is really difficult to find the right balance being a high-level athlete, a father, and an employee, but I manage to do it pretty well. Being a para-triathlon champion is a full-time job. I train between 25 and 30 hours a week. I represent Bouygues when I am cycling, swimming, running, and competing. It is important that I can count on the Group to enjoy this freedom!<sup>1</sup> • I.G.

1. Alexis Hanquiquant carried the symbol of the Games during its journey across France. Nantenin Keita, a Paralympic athlete sponsored by Starting B., and he also carried the flag of the French delegation.





# TF1+ A DIGITAL REVOLUTION



**MEDIA.** On 8 January, TF1 launched TF1+, the first French free streaming platform. Staying in step with new digital habits, it offers a single destination for news and entertainment with a range of premium, family-friendly programs with broad appeal. Plus a few innovations.

*By Céline de Buttet*







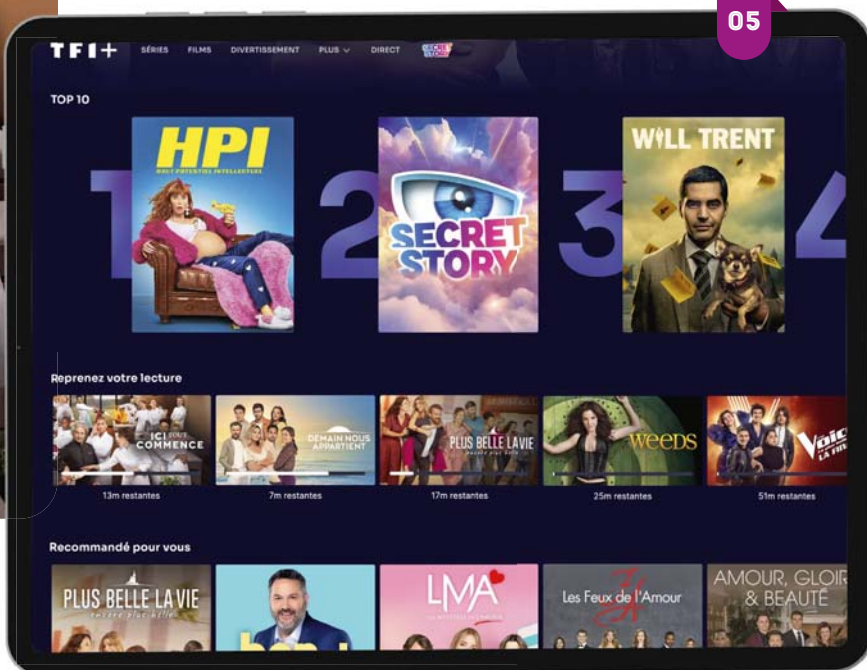
03



04



05



01. The documentary *Ma'o Mana, l'esprit du requin (Ma'o Mana, spirit of the shark)*, with Bixente Lizarazu.

02. All the programs in the Ushuaïa TV for Change collection are found on TF1+.

03. The series *Plus belle la vie, Encore plus belle (A Beautiful, Even More Beautiful Life)* made its grand return to TF1 on 8 January 2024.

04. The police series *HPI* began its fourth season on TF1 and TF1+ on 16 May.

05. TF1+ is a platform where all the channels of the TF1 Group can be viewed live.

06. The TV series *Ici tout commence* has been aired since 2 November 2020.

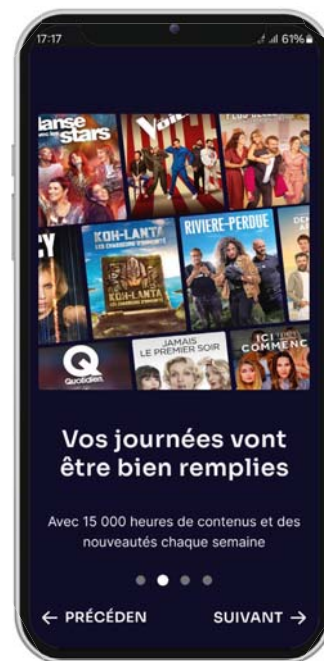


## STAYING IN STEP WITH NEW VIEWING HABITS

The goal of TFI+ is to become the French leader in the rapidly growing free streaming market<sup>1</sup>. Rodolphe Belmer, CEO of TFI, has even made the platform, which was launched on 8 January 2024, a strategic focus of the media group. Hyper accessible, available everywhere, at any time, and with extended rights, TFI+ delivers on a simple promise: to offer users premium quality content for free. In addition to the programming on linear (traditional) television, viewers can now choose what they want to watch and when. People under the age of 24 primarily watch TV by streaming, while it accounts for just 35 percent of the viewing of the 25-to-49-year-old age group, a trend driven by the boom in connected TV.

1. The digital video advertising market is 2 billion euros a year, and it is expected to double to 4 billion euros by 2027.
2. Unlike video on demand (VOD), FAST channels often present their content in grid format, similar to traditional ad-supported cable and satellite TV services, that is, live and according to a schedule.

Launched in 2011, MYTF1 was a catch-up platform that allowed users to watch programs already aired on television. TFI+ is different. It is designed as a destination platform (a place to find appealing programs), where users can watch all TFI Group channels (TF1, TMC, TFX, TFI Séries Films, and LCI) live as well as about fifty FAST channels (Free Ad-Supported TV)<sup>2</sup>. TFI+ also offers more comprehensive news coverage through Top Info, a feature providing in-depth reports on the day's main news stories with five daily segments of three to six minutes each.



↑  
Hyper easy to access, available everywhere and at any time, TFI+ offers viewers premium quality content for free.

### DIGITAL SPIN-OFFS OF DANCING WITH THE STARS

Before the new season's launch in February 2024, loyal fans could watch *Who Will Dance with the Stars*, which shows how the casting and recruitment of professional dancers are done. Another spin-off, *Dancing with the Stars of the Internet*, featured influencers led by YouTuber Michou. Initially broadcast on Twitch, a live video streaming service, the show is now available on TFI+.

↓  
All the seasons of *Mask Singer* are in the TFI+ program lineup.



←  
*Dancing with the Stars of the Internet* is a spin-off of *Dancing with the Stars* featuring influencers.







## SOMETHING FOR EVERYONE

From westerns and science fiction to action movies, comedies, and cartoons, the TFI+ catalog spans all genres, offering over 15,000 hours of content (the equivalent of Disney+) available at any time. While MYTF1 provided a few episodes for replay within a limited period of seven to 30 days, TFI+ offers complete series that can be viewed for up to 48 months. This includes four seasons of *HPI* and *Ici tout commence*, 13 seasons of *Clem*, and 15 seasons of *Camping Paradis*. The same goes for shows like *Koh-Lanta* and *Secret Story*, letting fans see the ones they missed. In addition to what is aired on TV, the platform also features a wide range of content for all audiences, including more than 200 movies available for six months, with new titles added monthly, and more than 250 French and foreign series acquired specifically for TFI+.

For those who dislike ads, Xavier Gandon, director of Broadcasting and Digital at TFI, points out that “there is a premium



subscription – the ‘must have it’ of streaming services – for €5.99 per month, which includes additional services and previews.” TFI is also developing offerings around its major entertainment franchises with exclusive programs. Two examples are *Dancing with the Stars* (see sidebar left) and *Star Academy*. In addition to the show aired on TFI, subscribers to the premium service could watch a channel showing everything happening in the Academy 16 hours a day. “TFI+ also enables us to create new programs, digital spin-offs, and innovations,” says Gandon. “These are opportunities to develop more comprehensive and attractive ecosystems for broader audiences by combining the strengths of both the broadcast channel and TFI+.”

Television and digital: two avenues to capitalize on a shared programming lineup.



Xavier Gandon, Director of Broadcasting and Digital, TFI.

### LES SUSPECTS, THE FAKE SERIES OF TFI+

Hundreds of movies and series are available for unlimited and free viewing on TFI+. To promote this offering, TFI unveiled *Les Suspects* in March. This advertisement presented as an original series features the main characters from the series *HPI*, played by Audrey Fleurot and Gilles Sanches, with the participation of host Nikos Aliagas. Directed by Djibril Glissant, who was also behind the camera for several episodes in seasons 2 and 3 of *HPI*, this clever advertisement was launched as though it were a TFI+ original production, with fake trailers and teasers shown on the media. Watch the three episodes of *Les Suspects* on TFI+:







←  
The innovative Top Chrono feature generates customized recaps of sporting events.

→  
The American actor James Denton participated in the last season of Dancing with the Stars.



## TECHNOLOGICAL INNOVATIONS ON THE PROGRAM

How can users find the right content as quickly as possible? “Beyond the content, what streaming users want is control over their time,” observes Claire Basini, executive vice president of BtoC Activities at TFI. To address this desire, TFI+ has introduced two innovations.

The first, *Top Chrono*, is designed for sports fans. This new feature uses artificial intelligence to generate customized summaries of sports matches based on the time users have available. Currently the summaries are five, ten, or fifteen minutes long, but in the future, the plan is to allow users to determine their length. Initially launched in a beta version during last year’s Rugby World Cup, when it was available only on the



←  
Claire Basini, Executive Vice President of BtoC Activities, TFI.

web and mobile phones, it attracted three million users. The 2024 UEFA European Championship allowed a much broader rollout.

The second innovation, *Synchro*, is a world first that addresses one of the main challenges for users of streaming platforms: choosing what to watch. This content recommendation engine promotes co-viewing (also called joint viewing). Each household member creates their profile. Then, based on these profiles, the algorithm suggests a selection of programs that would appeal to those sitting in front of the screen at the moment. “This innovation, which encourages families to enjoy programs together, is very much what we are about,” says Basini. ●

### RECORD-BREAKING PERFORMANCE

TF1 has established itself as the leading free streaming platform in France, with an average of 33 million monthly streamers in the first quarter and 35 million in March 2024, a new record, compared with 28 million monthly streamers for MYTF1 in 2023. In the first quarter of 2024, the platform recorded 285 million hours streamed (up 13 percent from the first quarter of 2023), according to Médiamétrie. Included are areas where MYTF1 still exists until TF1+ is fully rolled out. In areas where the new platform is available, consumption has increased by a substantial 79 percent. The advertising revenue of TF1+ also grew by 43 percent in the first quarter to €29 million.



## TF1+ IN FIGURES

OVER  
**15,000**  
hours of programs  
available

OVER **250**  
complete  
series

OVER **200**  
French and foreign  
films

OVER  
**60**  
live channels

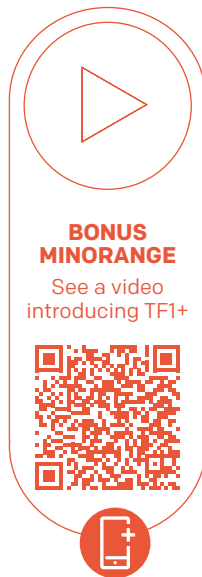
## 33 MILLION STREAMERS EVERY MONTH

on average in the first quarter of 2024,  
compared with 28 million monthly  
streamers for MYTF1 in 2023.

“  
*Beyond the content,  
what streaming viewers  
want is control over  
their time.*

CLAIRE BASINI  
Vice President of BtoC  
Activities, TF1

**8**  
**JANUARY**  
**2024**  
Launch of TF1+



**BONUS  
MINORANGE**  
See a video  
introducing TF1+



## DIGITAL SPIN-OFFS

### OF DANCING WITH THE STARS

*Dancing with the Stars of the Internet* features  
influencers led by YouTuber Michou. Shown first on  
Twitch, the live video streaming service,  
the program is now available on TF1+.

PEOPLE  
UNDER **24**



primarily watch TV by **STREAMING**

“  
*TF1+ offers opportunities to  
develop more comprehensive  
and attractive ecosystems for  
broader audiences.*

XAVIER GANDON  
Director of Broadcasting and Digital, TF1

BONUS



Check out the TF1+ site





# REJENEO

## A TRUSTED PARTNER FOR THE CLIMATE AND BIODIVERSITY

**DECARBONIZATION.** Rejeneo, a new offering from the Bouygues group, is intended for the Group's business segments and customers who want to preserve or restore natural carbon sinks. A few months after its launch in December 2023, it has funded its first projects. Here's how it works.

*By Émilie Dupas*



## REJENEO IN FIGURES

(at end-February 2024)

**2**  
employees

**20**  
partners

**7**  
customers

**5**  
projects finalized

**28,000**  
tonnes of CO<sub>2</sub>  
sequestered



### A NEW BUSINESS TAKES ROOT

Through Rejeneo, Bouygues Bâtiment France has financed several projects that have received a low-carbon label, including:

- The planting of agricultural hedges at La-Touche-Gohier, in northwestern France, thus sequestering 800 metric tonnes of CO<sub>2</sub> equivalent.
- The reforestation of woodlands damaged by droughts and bark beetle infestations in the Haute-Saône, in eastern France. The project involves replanting the forest with diverse species adapted to climate change as well as restoring and preserving biodiversity-rich peat bogs. It will result in the sequestration of 1,335 metric tonnes of CO<sub>2</sub> equivalent.

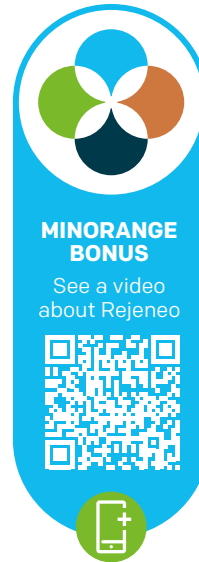
Natural carbon sinks, which have a key role to play in reaching global carbon neutrality, are suffering the effects of climate change. Companies can help preserve and regenerate natural ecosystems by reducing their environmental impacts, but what else can they do to contribute to achieving carbon neutrality by 2050? Rejeneo was launched in December 2023 to assist its customers in identifying projects for natural CO<sub>2</sub> sequestration in the voluntary carbon market. There are many initiatives, and it is estimated that their average cost could increase tenfold by 2035 due to high demand. But given the wide range of possibilities, it is not always easy to navigate and select the ones that will be beneficial in the long term for both the climate and biodiversity. “We are the single entry point for

the Bouygues group’s business segments when they want advice on financing natural carbon sequestration projects,” says Arthur Pasquier, director of Rejeneo. “This company, which is a Bouygues corporate entity, also relies on the expertise of ecologists at Elan [a Bouygues Construction subsidiary – ed.]”

### A GUIDE TO THE VOLUNTARY CARBON MARKET

The voluntary carbon market allows private and public organizations to finance carbon sinks in exchange for certificates that can be saved over time. “The actions taken by Rejeneo should not be deducted from companies’ carbon footprint but regarded solely as an addition to a prior plan for drastic emissions reduction. Rejeneo guarantees the solidity and transparency of the funded projects,” explains Pasquier. Rejeneo connects companies, which can be in the Group or external customers, with project developers. “Thanks to our ecosystem of partners, we are able to help our customers finance reforestation of wooded areas, promote new agricultural

practices, or restore wetlands and peat bogs,” adds Pasquier. Bouygues is the only construction company in France to have launched this type of initiative as an addition to both its climate strategy and the range of services offered to its customers.



#### MINORANGE BONUS

See a video  
about Rejeneo



### PROJECTS AND METHODS

At present, Rejeneo has around twenty partners who provide access to a portfolio of 400 projects in France and nearly 2,000 internationally. These partners are responsible for their implementation and monitoring to ensure they meet recognized standards. Several clients have turned to Bouygues for this new service: TFI Pub, Bouygues Bâtiment France, Bouygues UK, and externally, the companies Carmila and Virtuo Industrial Property. In response to a tender or at a customer’s request, Rejeneo will propose to identify a local project from its partners’

portfolio and assist in the contracting and financing. For example, Bouygues Bâtiment France has funded five projects that will result in the sequestration of 4,400 tonnes of CO<sub>2</sub>. The initiatives are then audited by an independent organization to certify the volumes of sequestered carbon (Bas Carbone Label, Verra, Gold Standard, etc.) and the biodiversity benefits. “We are developing a monitoring platform that records information about the nature of operations, their progress, and photos as well as their carbon and biodiversity benefits,” says Alan Bragado, technical director at Rejeneo. These things will contribute to transparent communication, which is important for the new non-financial reporting required of companies by the CSRD<sup>1</sup> starting in 2024. Since its launch, Rejeneo has enabled the capture of the equivalent of 28,000 tonnes of CO<sub>2</sub>. •

1. The main objective of the Corporate Sustainability Reporting Directive (CSRD) is to standardize corporate sustainability reporting and improve the availability and quality of published ESG (Environmental, Social, and Governance) data. See p. 94





# A 100% DECARBONIZED CAMPUS

**NETHERLANDS.** The Brainport Industries Campus (BIC) operated by Equans in Eindhoven is entirely dedicated to high-tech. This building, which is 100-percent powered by decarbonized energy, is an illustration of Carbon Shift, the offer launched by Equans in March 2024. A guided tour.

*By Émilie Dupas*





←  
 Located northeast of Eindhoven, the Brainport Industries Campus brings together cutting-edge companies and schools with the aim of improving industrial performance and productivity.

→  
 A leader in design and innovation, Eindhoven was formerly an industrial center, where the Philips group built its first factory in 1891.



100,000  
 m<sup>2</sup>

More than  
 50  
 companies

3  
 schools

**E**indhoven, like Paris, is a “City of Light.” Because of its light art festival. And because of the mark left by the Philips group, which built a light bulb production plant here in 1891. Since then, the company has diversified and relocated its activities, while its factories in Eindhoven have been transformed into living spaces. Today, the city is a center of technological innovation where the fourth industrial revolution based on artificial intelligence, robotics, and decarbonized energy is unfolding.

**DECARBONIZED ENERGY FOR THE FACTORY OF THE FUTURE**

The Brainport Industries Campus (BIC) is home to more than fifty companies such as ASML, Meta, and Siemens as well as three schools. The aim of the Campus is to accelerate the digital transformation of industry by promoting open innovation<sup>1</sup>. The occupants are provided with workshops, offices, and common areas. “Cutting-edge companies develop highly technical products in small volumes. This campus was created

to keep Eindhoven in the race against rival cities in Germany and China,” explains its director, Erik Veurink. The problem? New technologies demand lots of electricity, and the Netherlands is seeking to decarbonize its economy<sup>2</sup> by transitioning from fossil gas to renewable energies, chiefly solar and wind, which do not produce electricity continuously. As a consequence, the electricity grid is congested at certain times due to an imbalance between supply and demand. In some parts of the country, industrial firms cannot request new connections.

That’s where Equans stepped in with a solution for the BIC. “We designed and are now operating a 100-percent decarbonized infrastructure that supplies electricity, heating, air conditioning, and ventilation to the building as well as compressed air and demineralized water for the companies’ activities. It allows us to avoid overloading the grid,” says Ruud Vleugels, Director of Energy & Utility Partners at Equans and one of the directors of Carbon Shift (see p. 68) in the Netherlands. “Initially, Equans was only supposed to be ...

1. An approach to innovation that draws on ideas and expertise from outside the company.

2. The Netherlands is targeting a 49% reduction in its CO<sub>2</sub> emissions, compared with 1990.



## SOCIAL RESPONSIBILITY

... involved in the design of the installations,” says Veurink. “But in 2017, we asked them to build and operate them as well because of the emerging grid congestion issues. The building became operational in 2019.” This €20-million project is partly financed by Rabobank. A company to oversee the energy management of the building, BIC Utility BV, was founded by the development agency of the North Brabant province (BOM) and Equans, with each having a 50-percent stake. Occupants rent space on the campus for five to fifteen years. They sign a contract with BIC Utility and pay fees for the utilities used by their facilities. BIC Utility covers 80 percent of the building’s energy needs by purchasing decarbonized electricity and bills the occupants based on

an annual fixed fee and their consumption. Photovoltaic panels produce the remaining 20 percent of energy. “By being grouped together on the same campus, companies optimize their costs,” points out Vleugels. “Ten times more power would have been demanded from the grid if they had been connecting individually.”

### “A SMART COMBINATION OF TECHNOLOGIES”

On the campus, 3D printers and welding robots are more visible than Equans’ installations, yet it is thanks to the latter, under the supervision of two operators, that everything functions. Some 6,500 photovoltaic panels on the roof supply approximately 3 million kWh of electricity per



“  
By being grouped together on the same campus, companies optimize their costs. Ten times more electricity would have been demanded from the grid if they had been operating separately.”

**RUUD VLEUGELS**

Director of Energy & Utility Partners at Equans and a director of Carbon Shift at Equans in the Netherlands

↓  
Places to eat and meet at the campus facilitate discussion and cooperation.



→  
Yaskawa, one of the largest manufacturers of industrial robots (welding, palletizing, painting, handling), has a showroom here.



↑  
Conferences are held in the 300-seat auditorium at the Brainport Industries Campus. Equans also installed the WiFi system for the entire building.





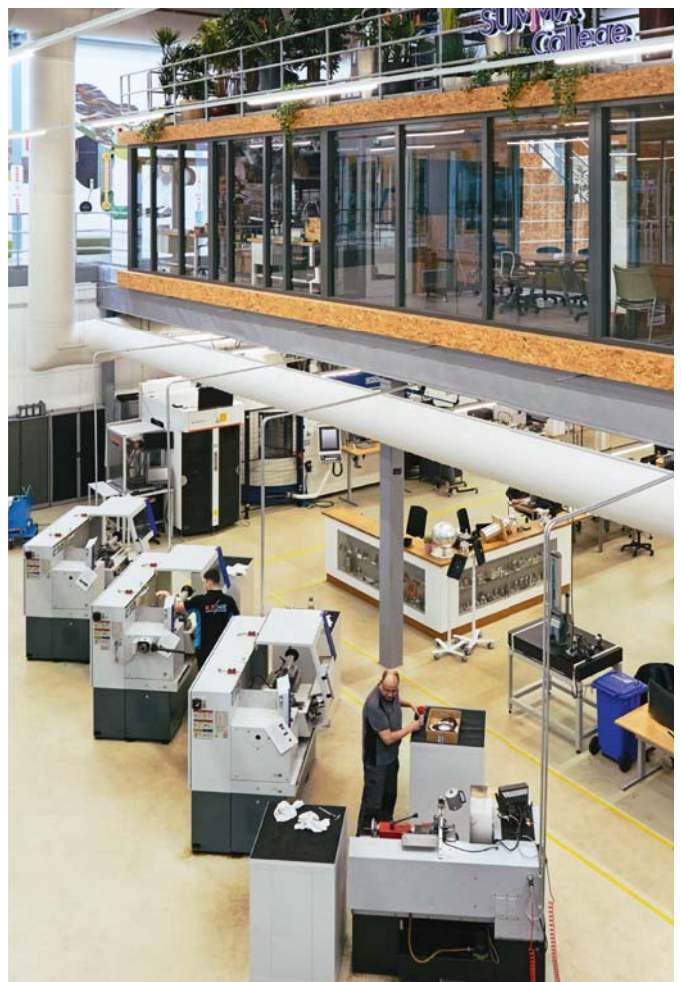
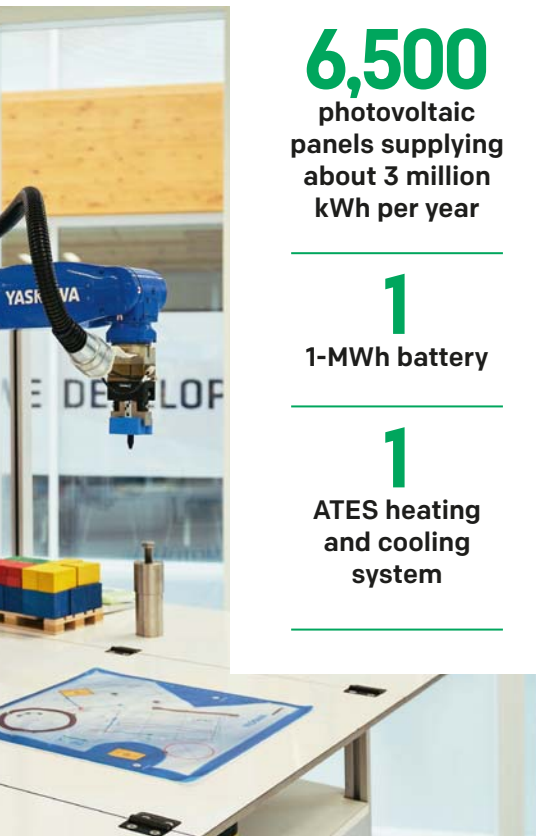


**2,000**  
to 2,500 people on  
the campus each day

**6,500**  
photovoltaic  
panels supplying  
about 3 million  
kWh per year

**1**  
1-MWh battery

**1**  
ATES heating  
and cooling  
system



↑  
Installations supplied by Equans provide the 50 companies at the campus with electricity, heating, ventilation, and fluids needed for their activities.

year. They are oriented east and west to generate electricity in the morning and evening when demand on the grid is high. Additionally, one 1-million-MWh battery stores unconsumed electricity for later use. Utilities are produced in a technical room in the building. The heating and air conditioning systems rely on ATES (Aquifer Thermal Energy Storage) technology, which works by storing thermal energy of aquifers (ground containing water) between seasons. In winter, water is pumped from underground, and heat is extracted from it with heat pumps. After passing through the building, the cooled water is reinjected into the aquifer until

summer, when it will be used for ventilation. “We meet the occupants’ needs. The waste heat<sup>3</sup> from the installations that produce compressed air is also used for heating” says Vleugels. This installation is modular, evolving over time according to the occupancy of the building, which is now at full capacity; and it may also serve to inspire an expansion of the campus so that even more bright ideas blossom in Eindhoven. ●

3. Excess heat given off in the form of water, steam, vapor, gas, or smoke condensate.





**CARBON SHIFT,  
A TAILORED  
DECARBONIZATION  
OFFERING**

To hope to achieve carbon neutrality by 2050, economic actors must decarbonize their activities by focusing on energy efficiency and electrification through non-fossil energy sources. This urgent need is having a strong impact on their business models. To support their efforts, Equans has created the Carbon Shift brand, bringing together all its solutions, from consulting to the implementation of climate strategies, deployed in over one hundred projects: modification of heat production in factories, digitalization of building controls, storage of thermal energy, installation of photovoltaic and storage systems. Five hundred experts spread across France, the Netherlands, the United Kingdom, Belgium, and Canada leverage Equans' expertise to propose a comprehensive and tailored decarbonization offering that includes data analysis and solution formulation, financing assistance, implementation, energy and carbon performance monitoring, and performance guarantees.

**500**  
consultants  
Carbon Shift



*Bestronics, a maker of printed circuit boards, is one of the companies at the campus.*



*The 6,500 photovoltaic panels installed on the roof of the building supply about 3 million kWh of electricity per year.*



*Equans monitors consumption and buys decarbonized electricity on the network. It then rebills occupants according to their consumption.*



*Two Equans employees oversee the building installations.*



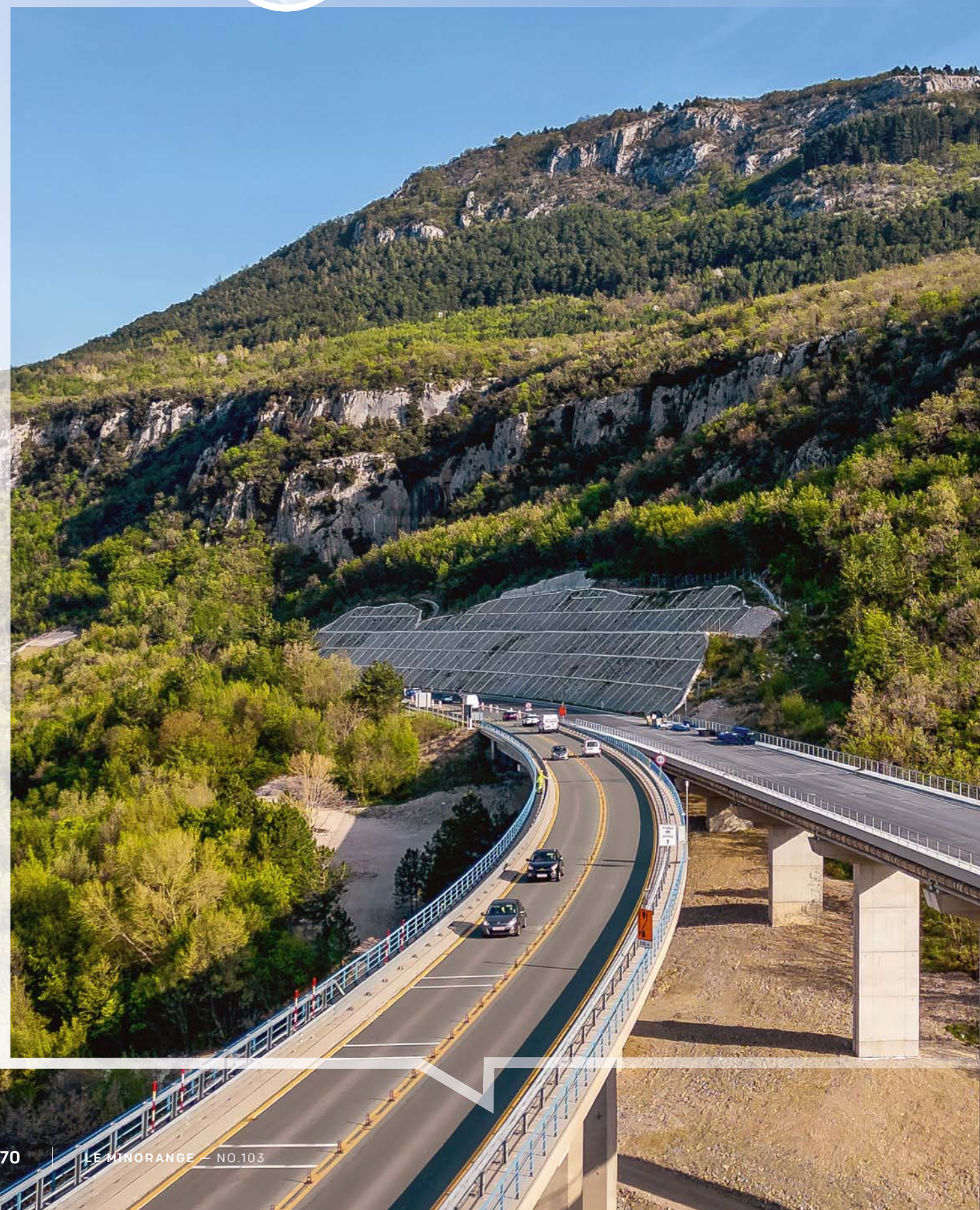




“  
*The creation of Carbon Shift signals our commitment to building crucial strategic energy plans for our clients and contributing to their long-term economic performance.*  
JÉRÔME STUBLER  
CEO of Equans









In the 2B2-1 project on the Istria motorway, the teams from Bouygues Travaux Publics are constructing a 270-m-long viaduct.

# A 30-YEAR SAGA IN CROATIA

**INFRASTRUCTURE.** The Y-shaped E751 motorway on the Istrian peninsula is crucial to the economic development of the region. Operated for 30 years by Bina Istra, the concessionaire owned by Bouygues Construction, it continues to be upgraded phase by phase.

By *Émilie Dupas*



**LUC-MICHEL DUJMOVIC**  
Project Director at  
the Croatian branch of  
Bouygues Travaux Publics



**JÉRÉMY LAPORTE**  
Administrative and Finance  
Director at the Croatian  
branch of Bouygues  
Travaux Publics



**DARIO SILIĆ**  
CEO,  
Bina Istra



**CHRISTIAN SANTALEZA**  
Technical Director,  
Bina Istra Operating  
Maintenance



## IMMERSION



↑  
The teams have begun the excavation for the doubling of 10.3 km of motorway between the Učka tunnel and the town of Matulji.

Istria's enchanting crystalline coasts, picturesque villages, and unique blend of Mediterranean and European traditions captivate the hearts of all travelers seeking beauty and adventure. They are a boon for tourism, which Croatia has sought to develop since its independence in 1991. Bouygues Construction came there in 1995, after the Balkan War, to extend the E751<sup>1</sup> motorway and operate it through the concessionaire Bina Istra, a company 49.97 percent-owned by Bouygues Construction. Each year, some four million visitors travel the road to enjoy the region's landscapes.

### FRENCH-CROATIAN JOINT EFFORT

In this postcard-perfect setting, a large contingent from Bouygues Travaux Publics are working hard to finish phase 2B2-1. It includes doubling the 5.6-km-long

Učka tunnel<sup>2</sup> and a 1.7-kilometer section of highway as well as the construction of a 270-meter viaduct, a highway interchange, and a rest area offering a magnificent view of Kvarner Bay. This work, valued at 197 million euros, got underway in December 2020 and will be completed this year, with the new tunnel opening by the summer of 2024. "It's a successful project. We're on schedule," says project manager Luc-Michel Dujmovic.

More than 170 employees were hired by the Croatian branch of Bouygues Travaux Publics to carry out the work. "At the peak period, there were as many as 500 workers of 36 nationalities from Bouygues and the subcontractors," notes Jérémy Laporte, administrative and finance director. "Despite the labor shortage, we've made an effort at Bouygues Travaux Publics to develop local employment by hiring and

training Croatian workers, some of whom had occupations very different from tunnel construction." The project director along with Ante Toljan, assistant site manager and guardian of the Minorange Guild spirit, are French-Croatians who have facilitated the transmission of Bouygues Travaux Publics' know-how: "Everything goes more smoothly when you speak the language of the country. It makes it easier to learn new techniques," Soljan points out.

### A TUNNELING SCHOOL

In early April, the workers are finishing the tunnel: pouring the last concrete, installing the last equipment, and completing the road surfacing. The excavation was completed in September 2023. "It was done using the traditional method, that is, with explosives," explains Tomislav Vinski, who oversees tunneling operations. A lot of

1. Construction of this motorway began in 1981.

2. The first tube was opened to traffic in 1981.





←  
Formworks used  
in shotcreting  
inside the tunnel.

↑  
The holes beside this worker can  
be used to mine the tunnel as part  
of the country's strategic defense.



**MINORANGE  
BONUS**

See a video about  
the project



↓  
A team working on the roadway.



↓  
A Jumbo does the drilling in  
the excavation of the Učka tunnel.



karst<sup>3</sup> and marl made the work difficult at times. The discovery of an 80-meter-deep karst crossing the tunnel path required the assistance of a speleologist and the installation of a concrete slab to bridge it. Located 50 meters below the new tunnel tube is subterranean spring<sup>4</sup> that supplies water to the seaside resort of Opatija. It was monitored daily to ensure that the works did not cause any pollution. Another major challenge was excavating the new tube<sup>5</sup> next to the one in use. “We created 24 cross passages [small secondary tunnels – ed.] to pass between the tunnels. Three of them will be completed after the new tunnel is operational. The old tunnel will be temporarily closed for renovation,” explains Vinski. Despite all these difficulties, performance has been good in the project: over the entire excavation, there were only ...

3. Underground cavities created by the presence of water and limestone.  
4. Discovered during the construction of the first tube.  
5. 50 meters between the axes of the tubes.



## IMMERSION



↑  
170 employees were hired by the French-Croatian branch of Bouygues Travaux Publics.

→  
The Limska Draga Bridge, with its 110-m piers, will soon be twice as wide.



### MINORANGE BONUS

Meet the engineer  
Izabela Krnjus



... 26 centimeters of out-of-profile (i.e., the volume excavated outside the theoretical contour), which saved time and reduced costs. “The tunnel has been excavated using conventional methods, but we have introduced some technologies that are new to Croatia,” says Dujmovic. “This project served as a kind of tunneling school for the teams.” Among the innovations: an on-site explosives production unit; the installation of reversible ventilation (to facilitate the extraction of gases and dust while pulling in clean air); and a 3.5-kilometer crusher-conveyor system (a conveyor belt that removes excavated materials). Low-carbon concrete was used for the first time in Croatia in this project, with 85,000 cu. meters poured in the construction of the tunnel. The 515,000 cu. meters of excavated materials were reused to produce the concrete for the tunnel’s roof and the embankment at the Kvarner rest area. The saga doesn’t end there. September 2023 saw the start of Phases 2B2-2 and 2B2-3: the Mirna and Limska Draga viaducts as well as 10.3 kilometers of motorway between

the Učka tunnel and the town of Matulji will soon be twice as wide. Completion of the second phase of work is slated for 2026.

### A WIN-WIN CONCESSION MODEL

“To double 1.7 kilometers of road along the mountainside, we blast with explosives every day,” says earthworks supervisor Jean-Pierre de la Rosa. Bina Istra secures the area and closes the road to traffic during the blasting. “We also develop a good relationship with the local population,” says Christian Santaleza, the French-Croatian technical director at Bina Istra Operating Maintenance. “We go out and speak with people who live within a 500-meter radius of the site and then inform them by SMS about upcoming work.” The 250 employees of the concessionaire do the maintenance and upkeep of the highway as well as provide security and toll collection. Bina Istra has been a partner of the Croatian state for nearly 30 years. “Since Croatia was a young country, borrowing rates were between 15 and 18 percent back in 1995,” says Dario Silić, CEO of Bina Istra. “Transferring the

infrastructure in certain parts of the country to a private partner seemed like a good solution for the government, and that was when Bouygues Travaux Publics arrived. Bouygues’ solidity helped secure financing. Thanks to our good management, we generate two million euros in surplus per year, which allows us to finance the new phases of work. And we bear the risks associated with the infrastructure. The state benefits at all levels, so our relations are very good.” Ahead of each phase of work (there have been seven since 1995), the company secures financing, conducts impact





↑  
A Bina Istra employee monitors traffic in the tunnel.

↓  
A view of the entrance to the tube under construction and the work area.

## OVER 30 YEARS OF EXPERIENCE IN CONCESSIONS

Through three segments (Bouygues Construction, Colas, and Equans), the Group has participated in 120 public-private partnerships or concessions over the past 30 years in 19 countries. Thirty percent of these projects have involved at least two of the Group's entities.

### • Mobility Infrastructures:

Highways or toll infrastructures (France, Croatia, United Kingdom, Hungary, Germany, USA, Jamaica, Ivory Coast, South Africa, South Korea); railways (France, South Africa); urban transport (trams in Reims, Dijon, Liège; metros in Melbourne, Edmonton); airports (Canada, Cyprus, Croatia, Madagascar); a port; and electric vehicle charging stations.

### • Buildings for Health,

**Education, Justice, Culture, and Leisure:** 9 hospital projects and 14 projects in the education sector in France and the United Kingdom; student housing; impressive cultural and leisure facilities (Aquatics Center, Seine Musicale, Sports Hub in Singapore, Stade de France, Orange Vélodrome stadium); government buildings in France, United Kingdom, and Canada (Ministry of Defense and Law Court complex in Paris, police headquarters, penitentiaries).

### • Public Lighting and Fiber

**Optics:** several projects in France.

studies, does the designing, and acquires land. No fewer than 200 criteria must be satisfied before construction can begin. Eighty-five percent of the project's economic benefits are local. Charitable actions are also supported. "The concession model enables Bouygues Travaux Publics to be competitive in the country because, thanks to our expertise in risk management, our adherence to deadlines, our good project management, and our optimal operation of the infrastructure, the Croatian state finds in Bouygues Travaux Publics a good and reliable long-term partner," continues Silić. "This also made it easier for Bouygues Bâtiment International, which built Zagreb Airport, to get established here." Bina Istra will operate the highway until 2042, and "a new project is under consideration," says Santaleza. So, a chance to add to new chapters to this saga in the future. ●

“  
*The tunnel has been excavated using conventional methods, but we have introduced some technologies that are new to Croatia.*

LUC-MICHEL DUJMOVIC  
Project Director







# EQUANS: THE HEART OF THE HOSPITAL

**CANADA.** In Toronto, Equans Services operates and maintains the country's largest mental health and addiction teaching hospital. Its core missions? Energy optimization and the reliability of the facility.

*By Laura Franchet*



The team from Equans Services oversees the operation of the air treatment system at the Centre for Addiction and Mental Health (CAMH) in Toronto.



**OMAR FARUQUE**  
General Maintenance  
Technician



**DAVID VACCARO**  
Maintenance Technician



**KIRK MARKLE**  
CAMH Facility Manager  
from Equans Services



## IMMERSION

*Equans Services makes sure heating needs are met in a region where temperatures can plunge to -40 degrees Celsius.*



**T**he many corridors in the basement connect the various areas of the Centre for Addiction and Mental Health (CAMH) in Toronto. At the heart of this labyrinth is a control room where Equans Services staff, sitting in front of their screens, monitor the operations of equipment and technical installations in real time. “We are entering our fifth year of maintaining and operating CAMH under a 30-year contract with the Ontario Ministry of Health,” explains Kirk Markle, the facility manager from Equans Services. “Twelve of our employees perform the maintenance on two new buildings completed in 2020.” These buildings are part of an investment plan launched in 2015 by the Canadian government to develop a group of psychiatric hospitals and centers specializing in the

treatment of addictions. The objectives of this initiative are to offer appropriate care to patients while creating an institution that will help eliminate their stigmatization. In addition to providing clinical care, CAMH is the country’s largest mental health teaching hospital and one of the world’s leading research centers in this field.

### VITAL NEEDS

Bottles of oxygen are kept in a storage room. This vital purified gas is produced day and night to meet medical needs. Equans personnel operate the suction equipment in patients’ rooms and the operating rooms. These devices help clear airways in case of congestion or obstruction while care is being administered. “At this hospital, Equans Services also



**COVERING THE ENTIRE VALUE CHAIN**

Plan Group, an Equans subsidiary operating in Canada since 1955, installs electrical, mechanical, IT and communications equipment.

Thanks to Plan Group and Equans Services, Equans is present across the value chain, from design and installation to operation, maintenance, and optimization.



**EQUANS SERVICES AT CAMH**

**2020-2050**

**maintenance and operating contract**

**60,000**  
m<sup>2</sup> of surface area

**12**  
employees

↑  
*David Vaccaro (left) and Brian Nunes, maintenance technicians at Equans Services.*

←  
*CAMH has workspaces for students, a library, and an auditorium.*

↓  
*On the roof of the hospital are machines to supply energy to the equipment.*



manages the heating, ventilation, and air conditioning systems as well as smaller equipment like elevators, personal lockers, clocks, and the sinks installed at the doors to rooms for emergency cleanups,” says general maintenance technician Omar Faruque. An almost invisible but essential presence to provide patients and doctors with well-functioning facilities. Something else crucial in this sector is security. “At this complex facility where the unexpected can occur, our primary mission is to work for the common good

by ensuring a secure space for everyone,” says Markle. All hospital staff carry a badge that can be activated if their personal safety is threatened. “We are also in charge of access controls throughout the building, video surveillance, the nurse emergency call system, and similar things,” notes Brian Nunes, an IT and communications technology specialist. CAMH has workspaces for students, a library, and an auditorium where events such as talks and film screenings for patients are held. “The lights, sound, and operation of ...





## IMMERSION



“

*At this complex facility, our primary mission is to work for the common good by ensuring a secure space for everyone.*

**KIRK MARKLE**  
CAMH Facility Manager  
from Equans Services



←  
*Equans Services manages the heating, ventilation, and air conditioning systems.*

... IT systems are also the responsibility of Equans Services,” adds Nunes.

### ENERGY OPTIMIZATION

From the hospital roof there is a clear view of Toronto’s skyscrapers. Large machines are installed up here to supply energy to the hospital’s equipment. The needs are substantial in a city where temperature fluctuations can be extreme,

with the thermometer plunging to as low as -40° Celsius in winter. “Our job is to maintain comfortable temperatures in all areas for patients and staff,” says maintenance technician David Vaccaro. The installations run on natural gas, but emergency batteries are available in case of a power outage. The modern design of the installations saves energy. Thanks to a building

automation system, technicians can monitor and control the energy consumption of the entire hospital complex, which extends over an area of approximately 60,000 sq. meters. A new phase of expansion is underway at CAMH. Delivery is scheduled for 2028, promising new opportunities for Equans Services. ●





↑  
Two new buildings  
will be added to the  
extension of CAMH  
in 2028.

← ↓  
Technicians monitor  
the hospital's energy  
consumption using a  
building automation system.



“

*We provide solutions to achieve energy savings,  
but that's not all.*



**CLAUDIA BERGER**  
*Sustainability Director, Equans Services*

**What are the missions of the Sustainability Department?**

In North America, 1,100 employees work for Equans Services, mainly in and around major cities like Toronto, Vancouver, Montreal, and Ottawa. In the Sustainability Department, we offer our customers decarbonization plans that include assessments, studies, and monitoring of energy consumption. Our goal is to provide them with solutions to achieve energy savings, but that's not all. We also act on other factors such as water management, air quality improvement, and compliance with regulatory standards on pollution and biodiversity protection.

**What are your main projects?**

Our offerings in energy and sustainability have expanded along with the needs expressed by our customers. We work mainly in the operation and maintenance of commercial buildings and industrial sites. In Ottawa, for example, we operate the energy plant on Parliament Hill. Government agencies are our

biggest customers. In Quebec, the government has launched a 3.8-billion-dollar [3.5-billion-euro] program to achieve its goal of decarbonizing the healthcare system by 2040. Heat recovery within buildings, installation of LED lighting, and the replacement of fossil fuels with cleaner energy are the main ways to achieve this.

**What are the other challenges in the hospital sector?**

Energy intensity is very high. In Quebec, the healthcare sector represents 3.6 percent of the province's greenhouse gas emissions. We must also ensure that installations are totally reliable. A power outage in a clean operating room is unimaginable. We are in a public healthcare system where funds continue to be limited. Moreover, some technologies need further development and still run on fossil fuels. The key to decarbonizing hospitals is to carry out studies to understand what is consumed and how.





# A NEW AVIATION HUB PREPARES FOR TAKEOFF



*The third runway at Bangkok's Suvarnabhumi International Airport is 4 kilometers long and 80 meters wide.*



**THAILAND.** Thanomwongse Service (TWS), a subsidiary of Tipco Asphalt, and its local partners are building a third runway and two taxiways at Bangkok's Suvarnabhumi International Airport to help make it a new aviation hub for all Southeast Asia.

*By Benoit Dhomps*



**JULIEN SEVESTRE**  
*Project Director*



**SUMET LUETRAKUL**  
*Contracts Manager*



**ALIDA SERTTHIN**  
*Purchasing and  
Logistics Manager*





AREA

800,000 sq. m



### THE PROJECT AT A GLANCE

- **4 km: length**  
of the 3rd runway
- **40,000 tonnes of bitumen**
- **830,000 tonnes of asphalt**
- more than **1,000 workers**  
on site at peak periods
- **240 million euros:**  
contract value

**JULIEN SEVESTRE**  
Project Director

↑  
Covering over 800,000 sq. m,  
this is the largest airport  
construction project in the world  
where the suction technique has  
been employed.

**C**onstruction of the 4-km-long, 80-m-wide third runway at Bangkok's Suvarnabhumi Airport entered its final stages in March 2024. "You have to imagine that when we started work here three years ago, this was all marshland," points out Julien Sevestre, project director at Tipco Asphalt Group, a Thai company in which Colas is the majority shareholder (see sidebar, p. 87). "Before applying the asphalt, we had to use a suction technique to harden the soft clay typical at Bangkok so the runway would not sink after we handed it over." This pumping solution accelerates the settling and consolidation of clayey soils. Nine million linear meters of drains and pumps were installed to extract water from compressible layers. This airport

construction project spanning an area of 800,000 sq. meters is the largest in the world in which this drainage method has been used.

#### FRENCH-THAI COOPERATION

The Tasco Phoenix, a 78-meter vessel chartered by Tipco Asphalt Group, has docked on the banks of the Chao Phraya River south of Bangkok to deliver 1,500 tonnes of bitumen. "Tipco Asphalt Group is the market leader in bitumen in the Asia-Pacific region. We have eight bitumen carriers to supply terminals in Vietnam, Indonesia, China, Cambodia, Malaysia, and the Philippines as well as to deliver to our customers in Australia and New Zealand. We operate two other ships for Colas in the Europe, Africa, Middle East,





Tipco Asphalt Group's supply chain is delivering the 40,000 tonnes of bitumen required for the project.



The bitumen is analyzed in a laboratory after it is taken out of the storage tanks.



The workers hold a celebration each time one million hours have been worked without an accident causing a work stoppage.

and Latin America regions,” says Alida Sertthin, head of purchasing and logistics at the Tipco Asphalt group. The company is responsible for the entire supply chain for the 40,000 tonnes of bitumen required for this project. The construction work is being done by its subsidiary, Thanomwongse Service, while Colas’ Major Projects division is providing expertise in engineering and project management.

Working alongside Sevestre is contracts manager Sumet Luetrakul. “Julien doesn’t speak Thai, so I serve as the intermediary with our subcontractors,” says Luetrakul. “I’m sort of his eyes and ears. There is a lot of strategy involved in managing customer

relations. In Asia, it is essential to maintain excellent relations. The objective is always to have a win-win situation.”

### PRODUCING 830,000 TONNES OF ASPHALT MIX

After the bitumen is taken out of the storage tanks, it is analyzed in the laboratory. “We analyze the bitumen in relation to the specifications and standards for the project,” explains Xavier Guyot, technical director at Colas Asia-Pacific. “We have to find the perfect composition for the asphalt so that it will be able to withstand the take-offs and landings of the aircraft. It’s like a cooking recipe!”

Three asphalt plants have been set up at the airport. The bitumen is delivered there and mixed with sand and aggregates to produce between 2,000 and 4,000 tonnes of asphalt a day for the runways. More than 800,000 tonnes will be produced over the course of the project. To optimize the process, Colas’ Grand Projects division, working with the Colas IT teams in Paris and Tipco Asphalt’s in Bangkok, has developed an application for tracking stocks, planning orders, and managing production costs and stocks in real time.

### 1,000 SITE WORKERS AND THREE SISTERS

As the sun rises and the first planes take off, a hundred-odd workers do warm-up exercises before getting their assignments for the day. “Today, we’re doing a workshop to make them more aware of the risks created by blind spots during the operation of construction equipment,” says Sirisak Boonjaruek, health and safety manager at Thanomwongse Co Ltd. “We regularly take photos and videos at the construction site to spot risks, and we publish a weekly newsletter to remind the teams of where they need to be extra careful.” These measures are essential to coordinate the 1,000 people who work in the project at peak periods. As a result, four months before the runway opens, 8.5 million hours of work have ●●



## IMMERSION

Some 2,800 lights connected by 700 km of electrical cables have been installed.



“

*In Asia, and especially Thailand, it is essential to understand customers' expectations and how they work. The relationship must always be win-win.*

**SUMET LUETRAKUL**  
Contracts Manager,  
Tipco Asphalt Group



...  
been done without any accidents resulting in a work stoppage. In the middle of the future runway, a crew unlike any other. On the finisher, a machine that applies the final layer of asphalt, are three sisters: Suwannee, Chanchira, and Suwana Hmodee. “It’s not every day you have siblings working on the same site!” laughs Suwannee, an asphalt finisher operator at Thai Slurry Seal. “At the beginning, we had to prove ourselves on a very male-dominated team. But our blood ties bring something extra: we understand each other without speaking. Today, everyone knows we can do the job, and we’re the only ones who know how to operate this machine.” This inseparable trio arrives and leaves the site together every day. It’s a family story that goes back a long way, as their father also works for the company, which he joined 21 years ago. A little way off, teams are installing the runway lights. “There are 2,800 lights

connected by 700 kilometers of electrical cables,” says Sevestre. “We are also installing the control system that coordinates the lighting between the new runway and the two existing ones.” The end of the day. It’s one in the morning, and the night-shift workers from Thanomwongse have taken over. They are busy with the final phase of the project: the construction of the adjacent taxiways, which will connect the new runway to the rest of the airport. “The last planes take off at about twelve-thirty at night, and the first departures are at around five in the morning, so we have very little time to work,” notes Sevestre. “It calls for daily preparation of our teams, who have 10 years of experience in airport maintenance projects.” Before the construction of this third runway, the airport could handle 45 million passengers a year. When it opens at the end of 2024, that number will increase to 60 million, with a plane taking off as frequently as every 65 seconds. ●

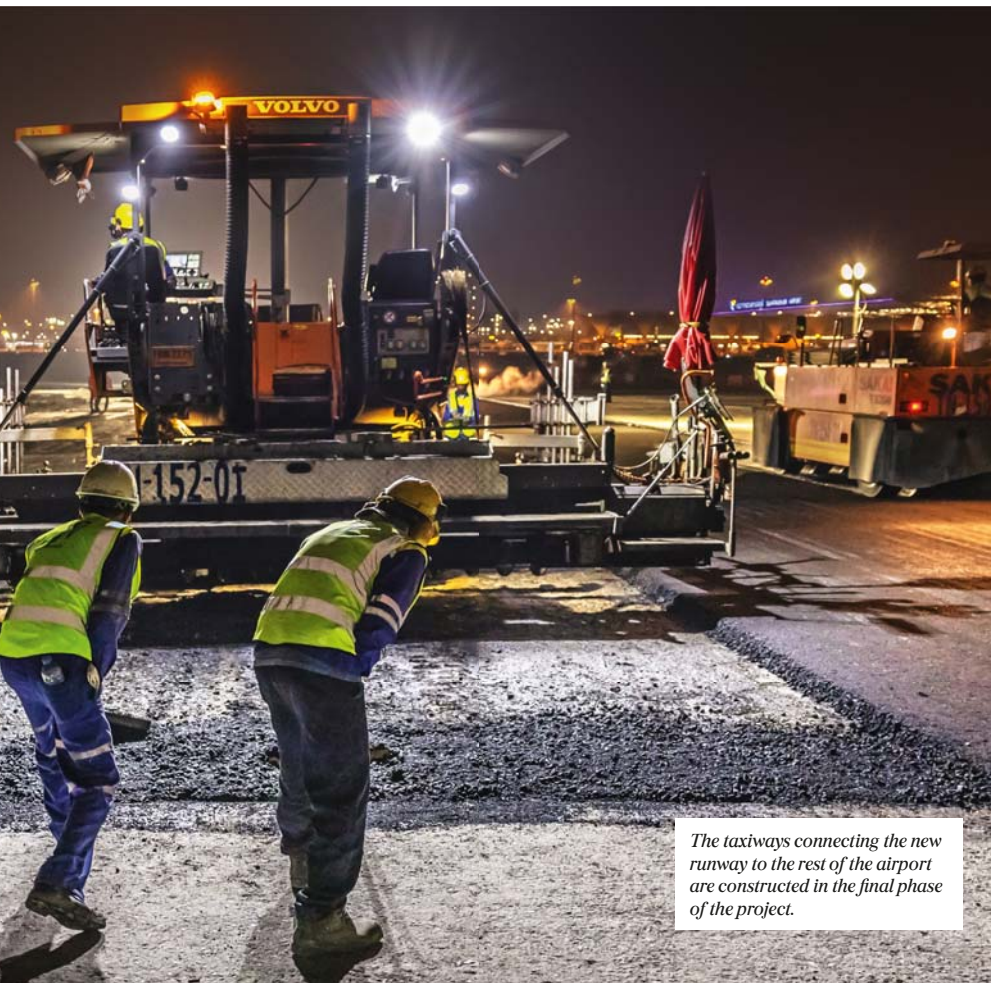






←  
*Three asphalt plants have been set up at the site.*

↓  
*Suwannee, Chanchira, and Suwanna Hmodee are three sisters working at the site.*



*The taxiways connecting the new runway to the rest of the airport are constructed in the final phase of the project.*

**TIPCO ASPHALT GROUP, A GIANT IN ASIA**

Founded by the Supsakorn family in 1979, Tipco Asphalt Group is owned 31.09 percent by Colas, which has been the majority shareholder since 2000. Its 44 production sites spread across nine Southeast Asian countries manufacture and distribute asphalt products for the construction, maintenance, and paving of roads.

The company also operates a refinery in Kemaman, Malaysia. It has refining capacity of up to 30,000 barrels of heavy crude oil per day, equivalent to 9 million barrels per year. Tipco Asphalt Group has 1,500 employees, a fleet of eight asphalt tankers with a total capacity of 42,800 tonnes, and more than 300 trucks. The subsidiary Thanomwongse Service (TWS) is a leader in road construction and maintenance in Thailand.



INNOVATION  
FRANCE SWITZERLAND



**EQUANS**



*The IT equipment is housed in six rooms of the 2,500-sq.-m building.*





# A DATA CENTER FOR THE BENEFIT OF SCIENCE

**IT SYSTEM.** The European Laboratory for Particle Physics (CERN), which sits astride the Franco-Swiss border, has asked Equans to design, construct, operate, and maintain its new data center. One more tool to accelerate science.

*By Benoît Dhomps*

**H**ere at the CERN Control Center at Prévessin-Moëns, on the French-Swiss border, about twenty computer scientists sit in front of a bank of screens monitoring the activity of installations at the world's largest and most prestigious scientific laboratory. CERN is *THE* reference in fundamental particle physics (see sidebar, p. 90). Its expertise and technologies have found many applications, ranging from medical diagnostics and electronic chip manufacturing to pollution sensors and the restoration of artworks.

The main objective of this organization made up of 23 member states is to discover new particles that will enable scientists to understand the structure of matter and the origins of the universe. In pursuit of this goal, CERN has built particle accelerators. The largest of these is the Large Hadron Collider (LHC). Explains Wayne Salter, group lead in CERN's IT department: "In this 27-kilometer circular tunnel buried 100 meters underground on the border between Switzerland and France, two beams of particles traveling at the speed of light ...



## INNOVATION



### A VILLAGE OF SCIENTISTS

The European Laboratory for Particle Physics grew out of the European Council for Nuclear Research (*Conseil européen pour la recherche nucléaire – CERN*), an organization established in 1954 whose acronym is still used today. This cutting-edge research center that unites thousands of scientists from over 100 countries has become a model of international cooperation. The main field of research is particle physics, which is the study of the fundamental constituents of matter and the forces to which they are subject.



...

are made to collide. The idea is to recreate the conditions of the Big Bang, which occurred 13.7 billion years ago.” Among its achievements so far, the LHC confirmed the existence of the Higgs boson, a major breakthrough in the understanding of matter. The thousands of sensors installed in the LHC collect several gigabytes of data every day—an enormous amount of information to interpret, calculate, and store that has prompted CERN to build a new data center. This project was awarded in 2021 to Equans France, whose tasks include designing and constructing the building as well as operating and maintaining it for ten years.

### MANAGING ENERGY PERFORMANCE

Built on 2,500 sq. meters of land, the building has six rooms to house the IT equipment. On entering, one is greeted by the hum of fans and the flicker of diodes from over 2,000 servers that store the billions of bits of data generated by the particle accelerators. “The photos and videos that people store on their computers are generally several kilobytes,” points out Vincent Itier, director of Data Center Projects at Equans France. “Here, the amount of information is so huge that the unit of measure is the petabyte. To give you an idea, a petabyte equals one billion kilobytes. It’s colossal.”

To keep the servers running properly, there are dry coolers, pumps, and enormous fans on the roof of the building, which faces the Jura

The consumption of

**44,000**

**MWh of electricity will be avoided each year**







*Equans France has been contracted to design and construct the building as well as to operate and maintain it for ten years.*



**MINORANGE BONUS**

See a video about the project



*The CERN data center is one of the top-performing facilities of its kind in the world.*



*More than 2,000 servers store the billions of pieces of data generated by the particle accelerators.*

Mountains. “We have installed a closed-loop system. Air is drawn in from the outside by the fans and passed through heat exchangers. The cooled air is then used to control the temperature of the servers,” explains Toufik Mokhnache, climate systems manager at Equans France. “The hot air produced by the servers is then used to heat other CERN buildings.” Four megawatts of residual heat – that is, the heat released by the servers – is reused on site in this way. This system will reduce electricity consumption by 44,000 megawatt-hours each year, equivalent to the annual consumption of a city of 20,000 people. “CERN gave us the general specifications for the building: ground area, storage capacity, energy performance, and so on,” says Itier. “But one of the crucial points was energy efficiency. In the contract, we committed to delivering a PUE<sup>1</sup> equal to or less than 1.15. That makes this data center one of the most efficient in the world.”

Red, yellow, and green wires run along the corridors of the data center – a highway of cables that carry electricity and fiber optics throughout the building. “We have installed a dual power supply system. If one fails, we have a second to rely on; this is called ‘redundancy,’” explains Daien Febvret, technical director at Equans France. “In the event ...

*1. Power Usage Effectiveness (PUE) is an indicator used to rate the energy efficiency of data centers.*





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*The data center market is booming.*  
VINCENT ITIER  
Director of Data Center Projects, Equans France





**DID YOU KNOW?**

CERN is where the World Wide Web, the hypertext protocol that allows us to view web pages via a browser, was born. It was created in 1989 by Tim Berners-Lee to allow scientists to share information with each other.



**WAYNE SALTER**  
Group Lead,  
IT Department, CERN



**VINCENT ITIER**  
Director of Data Center  
Projects, Equans France



*CERN Control Center at Prévessin-Moëns, on the border between France and Switzerland.*



*Four megawatts of residual heat, i.e., the heat given off by the servers, are reused at the site.*



*CERN sets the standard in fundamental particle physics.*



*To keep the servers running properly, dry coolers, pumps, and enormous fans are installed on the roof of the building.*

...

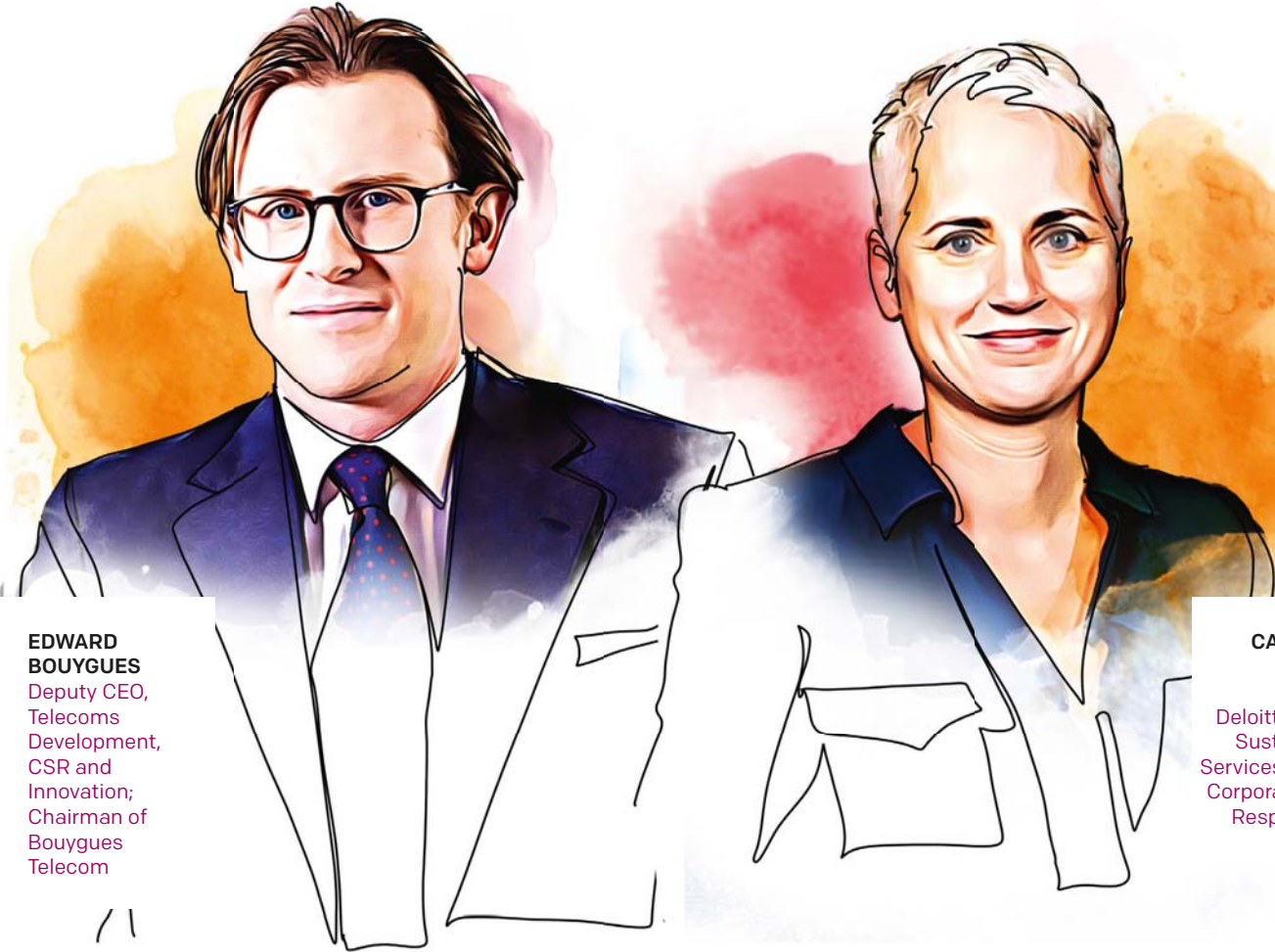
of a general power failure, we also have 1,500 kilowatts of batteries that can take over, which gives the laboratory's staff an additional ten minutes to save all data."

**SUPPORTING THE DIGITAL TRANSITION**

"The data center market is booming," notes Itier. "The demand for data processing continues to grow with the expanding use of artificial intelligence and the increasing number of local data centers." In January 2022, Equans created an industry data centers agency, which is positioned as a general contractor able to support customers in the development of their projects. The strategy is to have the capabilities to work across the entire value chain, from design and construction to maintenance.

A perfect illustration of the exponential growth in data storage needs is CERN's data center, where three phases of expansion are planned to enable the building to house new servers. Its capacity will increase from four megawatts in 2023 to twelve megawatts in 2033. A big plus for research. ●





**EDWARD BOUYGUES**  
Deputy CEO,  
Telecoms  
Development,  
CSR and  
Innovation;  
Chairman of  
Bouygues  
Telecom

**CATHERINE SAIRE**  
Partner,  
Deloitte France,  
Sustainability  
Services, Auditor,  
Corporate Social  
Responsibility

**CLIMATE AND SOCIETY**

“The CSRD, a new tool to support our strategy,”



**LEGISLATION. The European Union is implementing the Green Deal with the dual aims of achieving carbon neutrality on the continent by 2050 and preserving resources. The CSRD, or Corporate Sustainability Reporting Directive, is part of this initiative. Le Minorange invited Edward Bouygues, deputy CEO of the Group, and Catherine Saïre, a partner at Deloitte France, to explain to readers what this new directive is all about.**

*Interview by Laura Franchet*

#### **What is the CSRD?**

**Edward Bouygues:** It is a European regulation that came into effect on 1 January 2024 requiring companies to be transparent about their sustainability strategy and their results. This means a new report will be replacing the Group's non-financial performance statement.

**Catherine Saïre:** I would add that this new regulatory framework encompasses climate, environmental, social, and governance issues [see the 12 standards on p. 97 – *ed*]. The CSRD will apply to large companies starting in 2024, listed SMEs in 2026, and non-European groups in 2028. About 50,000 companies in all will be subject to the directive.

#### **Why was this directive enacted?**

**C.S.:** Since 2020, the European Union has been implementing the Green Deal, which has the aim of carbon neutrality on the continent by 2050. The CSRD is one of a series of policy proposals on climate, energy, transport, and taxation. One of the main purposes of the CSRD is to standardize the information published regarding sustainable development and its impact on society.

**E.B.:** At Bouygues, we have initiated a broad consultation with our stakeholders to better understand civil society's

perceptions and expectations of our sustainability efforts. The board members on the Audit Committee and the Ethics, CSR and Patronage Committee are aware of the goals of these new regulations in the Green Deal framework. Our operational teams, who recognize the urgency of ecological issues, have begun taking steps to meet these new obligations.

#### **Does the CSRD have other objectives that you have noted?**

**C.S.:** Yes. Until now, companies were not required to have a robust transition plan to limit the increase in global average temperature to 1.5 degrees above pre-industrial levels<sup>1</sup>. The CSRD requires EU-based companies to communicate their short-, medium-, and long-term commitments and show how they are linked to their business models.

**E.B.:** The CSRD is a further step to ensure that we are integrating both financial and non-financial elements into our strategies. This sustainability report is meant to be audited at the same level as the Group's financial statements.

<sup>1</sup> A goal set by the Paris Agreements signed in 2015.

#### **Concretely, what subjects will be included in the CSRD report?**

**C.S.:** We are talking about environmental factors such as climate change mitigation and adaptation, the preservation of biodiversity, resource use, and the circular economy. From a societal perspective, they include information related to equal opportunity, working conditions, respect for human rights and basic freedoms.

Finally, concerning governance, we look at the role of administrative bodies, lobbying activities, and the management of relations with business partners.

**E.B.:** The areas just mentioned are ones we know very well and in which we are already active. Bouygues' strength is to be a group with multiple businesses and to have the means to act in each of them. We are not starting from zero. The climate strategy pursued since 2020 in our subsidiaries is a good example. Five of the six business segments have had their decarbonization trajectory validated by the SBTi – the Science Based Targets initiative – and Equans has applied to obtain validation before the end of 2024. This recognition ...

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Edward Bouygues



BIO EXPRESS

EDWARD BOUYGUES



A graduate of Essca, Angers, with an MBA from London Business School, he began his career in 2007 at Bouygues Construction as a works supervisor. He joined Bouygues Telecom in 2014 and held several positions there. In 2021, he was appointed Deputy CEO, Telecoms Development, CSR and Innovation of the Group, and the following year, Chairman of Bouygues Telecom.

CATHERINE SAIRE



An auditor in the field of Corporate Social Responsibility with more than twelve years of experience in Southeast Asia and South Africa, Catherine Saire assists her international clients at Deloitte France in transforming the new ESG obligations into vehicles of opportunity and innovation, including through the application of the CSRD.



 **LinkedIn**  
[www.linkedin.com/in/saire-catherine/](https://www.linkedin.com/in/saire-catherine/)

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Catherine Saire

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by an outside organization confirms the relevance of the actions taken as part of our strategy to reduce our greenhouse gas emissions over the entire value chain.

**So, ultimately, the idea is to formalize the Group's impact on society and the environment?**

**C.S.:** Absolutely. At the core of the CSRD is the double materiality matrix. It has two axes: the impact of the company on its external environment and the impact of this environment on the company's business. The report presents the material impacts of the company, as well as its risks and opportunities.

**E.B.:** The entire value chain will be assessed: from our suppliers upstream to the consumers and users of our products and services downstream.

**Who will be in charge of CSRD reporting?**

**E.B.:** It is important to understand that every employee is involved in this process. We want to mobilize all the business segments and functions worldwide. For example, the finance department consolidates information and manages budgeting; purchasing plays a crucial role in identifying our suppliers; and human resources works on training programs to enhance our employees' capabilities in these matters.

**C.S.:** I would add that the legal and audit functions have an important role to play since the sustainability report will be verified just as the company's financial information is. The key to successful reporting is to work across the company's support functions.

**E.B.:** Bouygues corporate's role is to facilitate and coordinate, while the business segments will be reporting the information. It is a big task, and we mustn't scrimp on the resources we devote to it.

**What are the responsibilities of senior management?**

**E.B.:** The senior executives and directors ensure the sustainability report is compliant. We are doing what we can to see they are involved in this process. A variable portion of executives' compensation is linked to ESG criteria. Given the climate crisis, we have a duty to be demanding regarding these objectives. The CSRD is not just a reporting process, but also a tool for monitoring the company's environmental and social responsibility strategy.

**C.S.:** The CSRD is not, indeed, something to be taken lightly. It must be managed at the highest levels of the company. It is important to get managers involved, since it is a way to demonstrate their company's social and environmental



performance, and it strengthens trust with all stakeholders. Standardizing the information that is reported and displaying greater transparency on sustainability will help channel investments toward companies that are working to preserve the environment.

**How are French companies positioned?**

**C.S.:** They are in the lead when it comes to environmental initiatives and social rights. The CSRD is a vehicle of differentiation for them. Essentially, it unites the rising expectations concerning sustainability, which we have been discussing in France since the Grenelle environment<sup>2</sup> consultations in 2007.

**E.B.:** The challenge for Bouygues is to maintain this lead by being an agent of change rather than just submitting to it.

*2. National consultation launched by the French government in 2007 with two objectives: to reform environmental policy and to make growth compatible with the limits of a finite world.*

We are fortunate to be a large group with people who can be enlisted to do this reporting.

**What are the next steps?**

**E.B.:** Our employees are working on a consolidated sustainability report that would be published in January 2025. This is a short-term framework document for the Group, but it also reflects the policies for business strategy, cost control, investments, and other matters. The indicators must be as relevant as possible because we will be monitoring them over an extended period.

**C.S.:** The CSRD can then lead to an action and transformation plan. It will serve as a source of basic information for all the subsidiaries. Last January, the Bouygues group invited me to participate in a Masterclass on the Green Deal. This is the sort of in-house initiative that sets an example for everyone else who has a role to play. ●



**MINORANGE BONUS**

See the Group's Green Deal Master Class held on 18 Jan. 2024 (in French)



**CORPORATE SUSTAINABILITY REPORTING DIRECTIVE (CSRD)**

Applicable since 1 January 2024, the CSRD establishes new standards and obligations for non-financial reporting. It concerns environmental, social and governance factors (ESG data). Some 50,000 companies in Europe are subject to this legislation.

**TRANSVERSAL STANDARDS**


**ESG STANDARDS**

General principles	ENVIRONMENT	SOCIAL	GOVERNANCE
General information	Climate	Company workforce	Business practices
	Pollution	Workers in the value chain	
	Water and marine resources	Communities affected	
	Biodiversity and ecosystems	Final users and consumers	
	Use of resources and circular economy		





#### A IMPRESSIVE HOSPITAL IN MOROCCO

 Bymaro, a Moroccan subsidiary of Bouygues Bâtiment International, has signed a contract for the construction of the Mohammed VI International University Hospital in Rabat. Extensive healthcare and teaching facilities will be housed in the four six-story buildings and the twenty-five-story tower that make up this hospital complex. Construction began in November 2023, with delivery slated for September 2025.