



FACTS &
FIGURES

2017

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PROFILE

VINCI Construction Grands Projets is a subsidiary of VINCI, a global player in concessions and construction.

We are part of a lineage of companies that have been operating for over 100 years and whose names are associated with landmarks in France and around the world.

We design and build major civil engineering structures and buildings:

- > transport infrastructures – bridges and viaducts, underground works, linear surface works, marine works;
- > mining infrastructures – access tunnels, earthworks, underground and open-pit work, civil engineering;
- > energies and oil & gas – LNG tanks, thermal and nuclear power plants;
- > buildings – office and residential towers, car parks, airports, administrative and cultural facilities;
- > hydraulic infrastructures – dams, pumping and wastewater treatment stations, water distribution and evacuation;
- > environment - drinking water supply and sanitation systems, technical landfill centres.

To carry out these major projects and fulfil our vocation, our teams make use of specialized expertise in project management, construction and engineering, relying on a network of shared experience that allows them to address quickly project risks. Whenever possible, we work in close partnership with local companies to find solutions that are comprehensive yet specifically tailored to the needs of each client, in both the private and public sectors.

« *Designing and building high-tech structures all around the world is a passion that drives each and every one of our employees. Our experience and accomplishments dating back more than a hundred years enable us to reset the boundaries of what is achievable, while managing risk and ensuring safety for all participants on our projects. We feel compelled to strive for excellence at all times, and our most gratifying reward is our clients' satisfaction and the satisfaction of the people who benefit from the structures we deliver.*

Patrick Kadri, Chief Executive Officer

We put our teams' knowledge and skills, experience, and capacity for innovation in the service of our clients to create together major structures for the sustainable development of territories. The safety of worksite personnel, people living near the site, and future users is our top priority in delivering projects of the highest standard.

Alain Bonnot, Chairman

MANAGEMENT COMMITTEE

FROM THE TOP DOWN AND LEFT TO RIGHT

// **Lionel Ravix**, France, Europe and Russia Director

// **Éric Seassaud**, Legal Counsel (February 2018)

// **Philippe Tavernier**, Qatar, Africa and Middle-East Director & CEO of QDVC

// **Philippe Masselot**, Chief Financial Officer

// **Yanick Garillon**, Director Asia, Building and Water works

// **Jean-Luc Toris**, Engineering & Technical Capabilities Director

// **Arnaud Brel**, Quality, Safety, Health, Environment and Information Systems Director

// **Stéphanie Malek**, Communications Director

// **Patrick Kadri**, Chief Executive Officer

// **Alain Bonnot**, Chairman

// **Éric Chambraud**, Strategy and development Director

// **Patrick Béchaux**, Human Resources Director



AREAS MANAGERS



Alexandre Ambrosini
Building & International
QDVC



Éric Coppi
Africa



Philippe Athuyt
France and overseas
French territories



Guenther Hailmayer
Infrastructure, QDVC



Jean-Luc Audureau
Latin America, Carribean &
underground works



Hakim Naceur
Russia



Sébastien Bliaut
Northern Europe



Thierry Portafaix
North America



Pierre Bourgeois
Hong Kong



**Jean-Philippe
Raymond-Bertrand**
Buildings



Hosni Bouzid
Mediterranean Europe &
LNG tanks



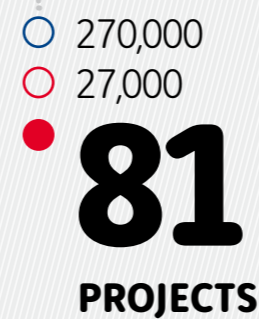
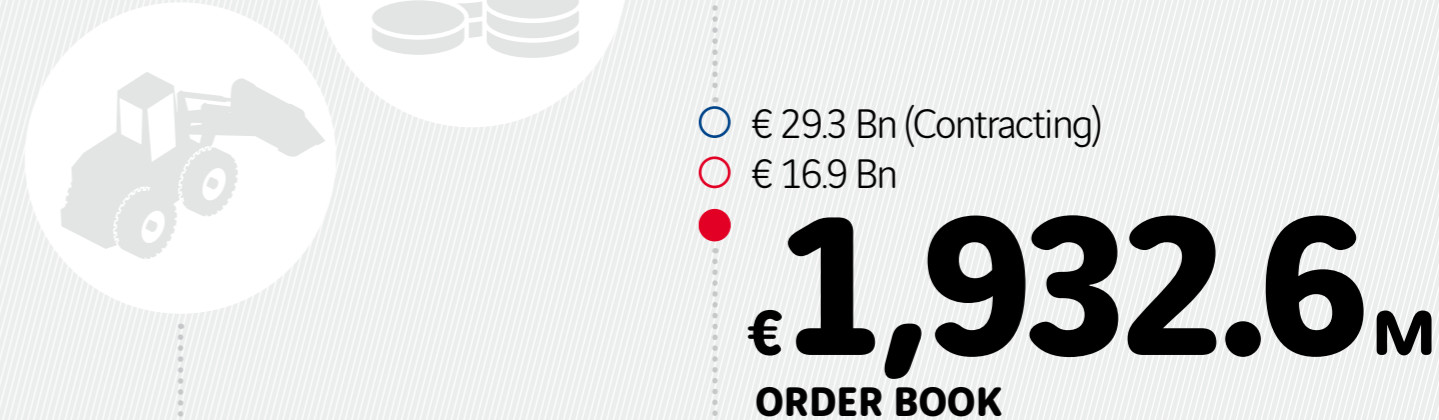
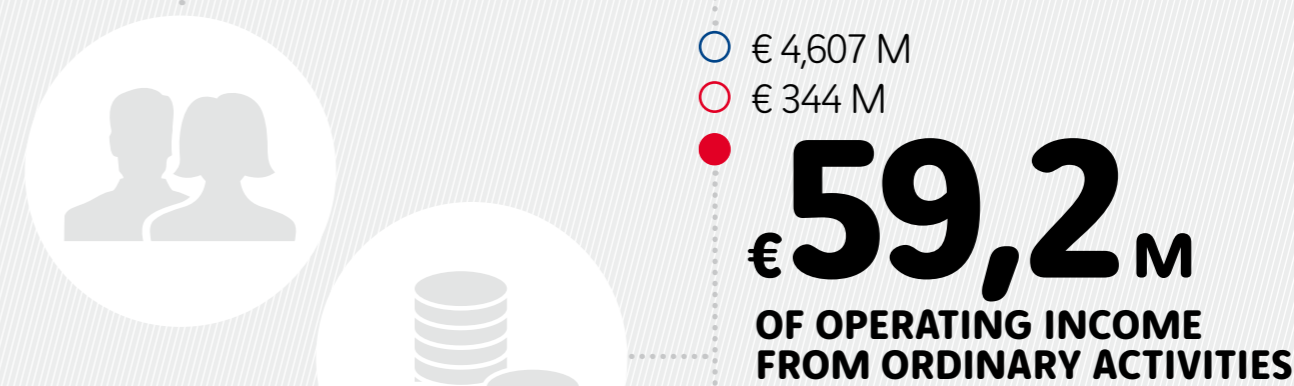
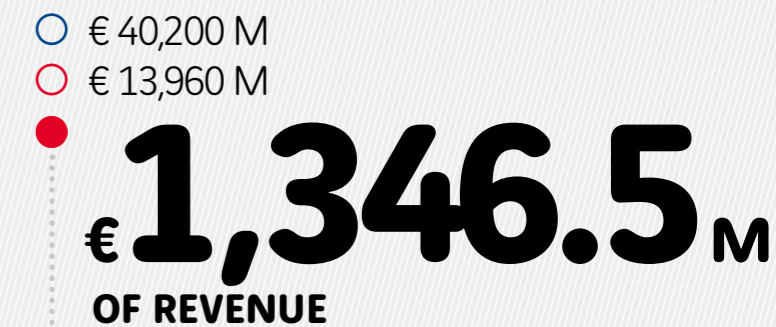
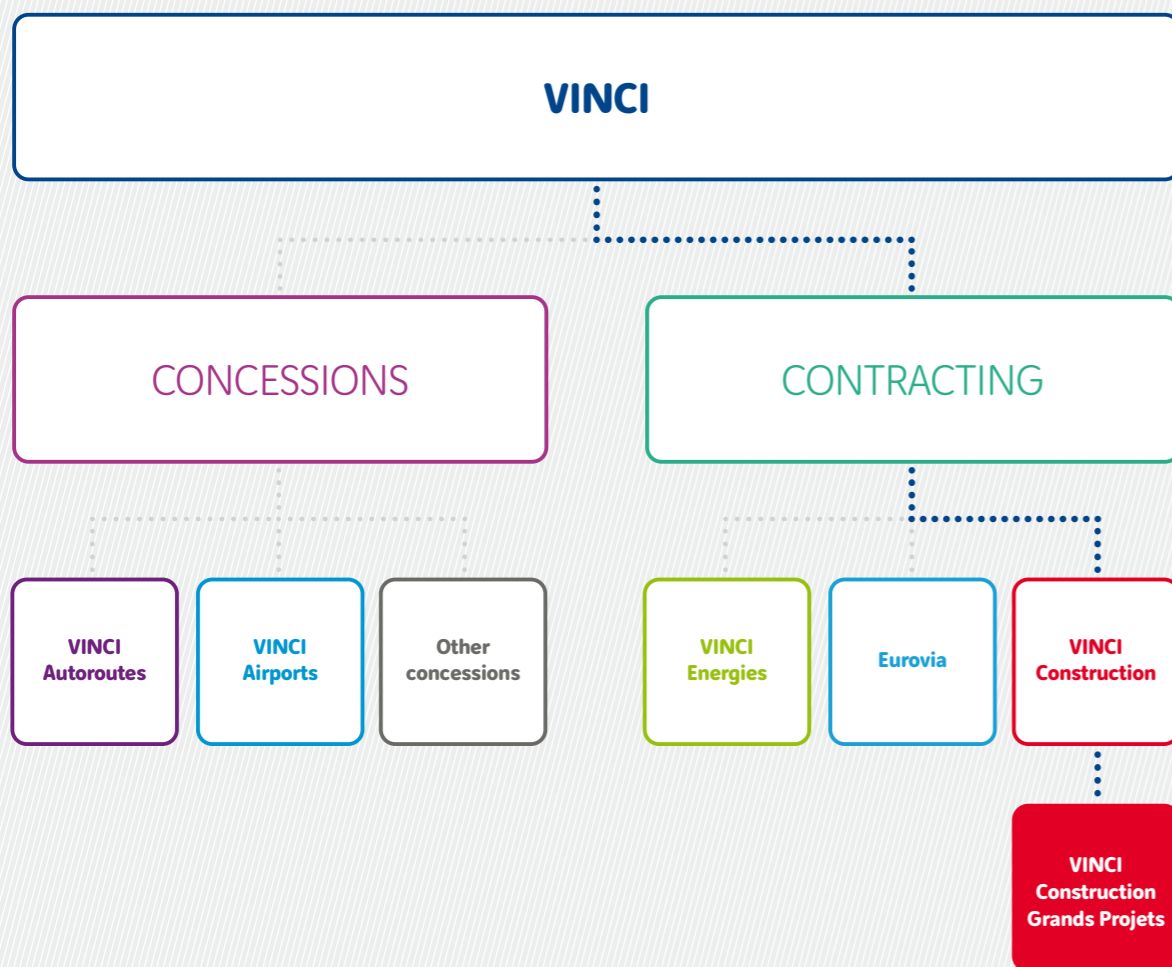
Julien Rayssiguier
Water works

At December 31, 2017 (including joint ventures)

ESSENTIALS

VINCI is a global player in concessions and construction, employing more than 195,000 people in some 100 countries.

Its mission is to design, finance, build and operate infrastructure and facilities that help improve daily life and mobility for all.



○ figures VINCI
○ figures VINCI Construction
● figures VINCI Construction Grands Projets

CURRENT WORKSITES

TRANSPORT INFRASTRUCTURES

Bridges and viaducts

- 1 // Atlantic bridge, **Panama**
- 2 // Viaduct of the New Coastal Road, Reunion Island, **France**

Underground works

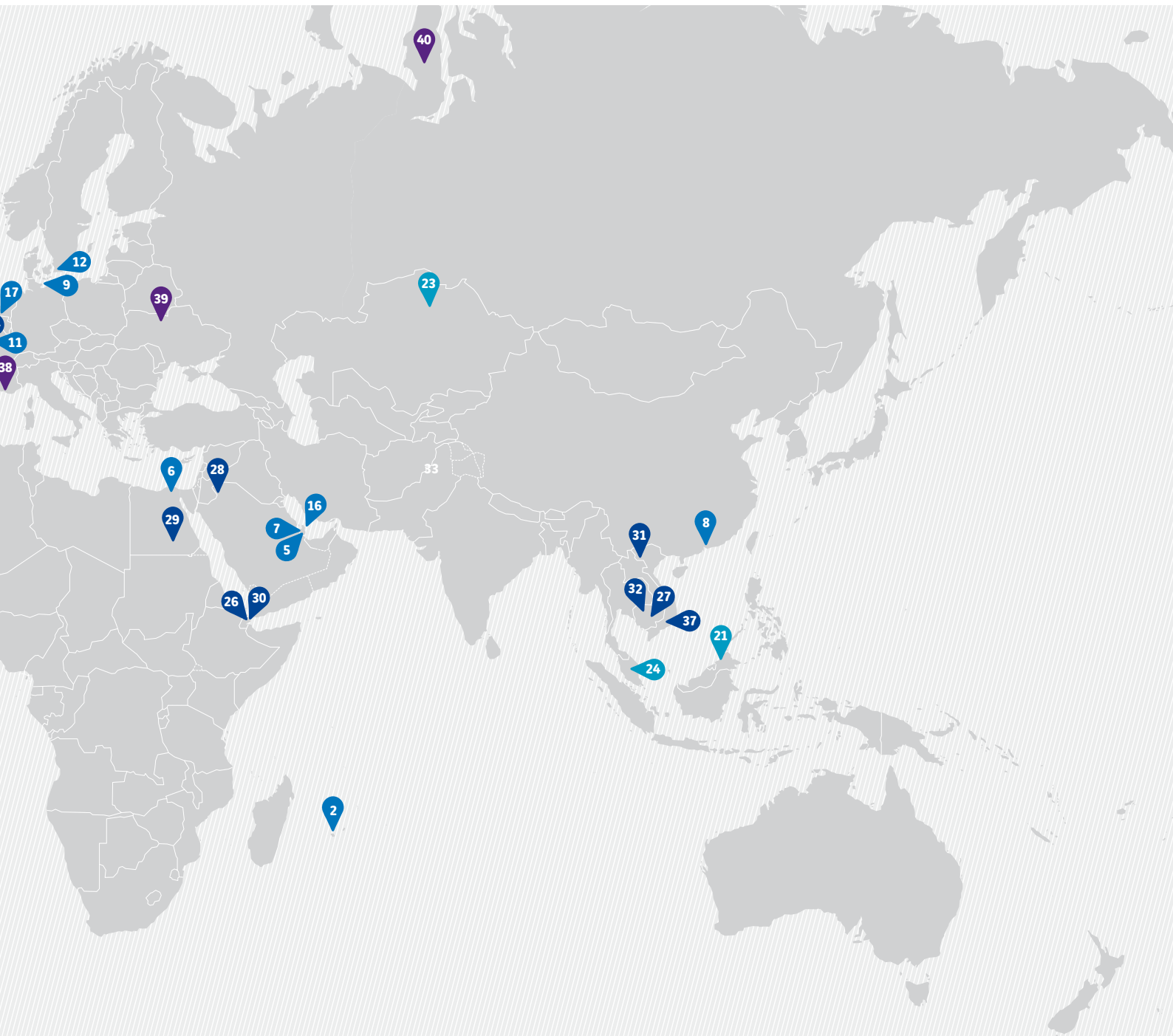
- 3 // Crossrail C510, Liverpool Street and Whitechapel station tunnels, London, **United Kingdom**
- 4 // Crossrail C512, Whitechapel station, London, **United Kingdom**
- 5 // Doha metro, Red Line South, **Qatar**
- 6 // Cairo metro, line 3, phases 3 & 4B, **Egypt**
- 7 // Lusail, Light Rail Transit phases 2C, **Qatar**
- 8 // New metro line, Shatin to Central Link, packages 1103 & 1122, **Hong Kong**
- 9 // Fehmarnbelt Tunnel, **Denmark-Germany**
- 10 // EOLE - CNIT station, Paris - La Défense, **France**
- 11 // Grand Paris Express, lines 15 south lot T3C and 14 south lot 2, **France**
- 12 // Copenhagen metro line 4, **Denmark**

Motorways and railways

- 13 // M4 Relief Road motorway (ECI), **United Kingdom**
- 14 // M6 Smart Motorways (and M4 - ECI phase 1), **United Kingdom**
- 15 // HS2 packages N1 & N2 - ECI phase 1, Birmingham, **United Kingdom**
- 16 // New Orbital Highway, Doha, **Qatar**
- 17 // Rijnlandroute Tunnel, **Netherlands**
- 18 // Bogota Girardot Highway, **Colombia**
- 19 // Linea Amarilla (Parque Rimac), Lima, **Peru**

BUILDINGS AND FUNCTIONAL BUILDINGS

- 20 // Extension of Santiago airport, **Chile**
- 21 // Alila Resort, Kota Kinabalu, **Malaysia**
- 22 // Mandarin Oriental hotel, London, **United Kingdom**
- 23 // Astana Oncology Hospital, ECI phase 1, **Kazakhstan**
- 24 // TA 3&4 - ECI phase 1 - Kuala Lumpur, **Malaysia**



HYDRAULIC INFRASTRUCTURES

- 25 // Wastewater treatment plants in Port Antonio, Phase 2, **Jamaica**
- 26 // Improvement of drinking water and sewer networks, **Djibouti**
- 27 // Potable Water Treatment Plant, Phnom Penh, **Cambodia**
- 28 // Yarmouk water-network modernization, **Jordan**
- 29 // New Assiut dam, **Egypt**
- 30 // Upgrading drinking water supply network, phase II, **Djibouti**
- 31 // Wastewater drainage and treatment, Thai Nguyen, **Vietnam**
- 32 // Wastewater treatment plants for the Siem Reap, **Cambodia**
- 33 // Sewer systems in five cities, **Dominican Republic**
- 34 // Tideway, package East, C415, London, **United Kingdom**
- 35 // Shieldhall tunnel, Glasgow, **United Kingdom**
- 36 // Extension of Kingston container terminal, **Jamaica**
- 37 // Transfer of drinking water supply, Ho Chi Minh-City, **Vietnam**



ENERGIES AND OIL & GAS

Nuclear

- 38 // Tokamak reactor building, ITER project, Caradache, **France**
- 39 // Chernobyl New Safe Confinement, **Ukraine**

Liquefied natural gas (LNG) tanks

- 40 // Yamal LNG, **Russia**


Energy Storage

- 41 // Pump storage hydroelectric plant, Abdelmoumen, **Morocco**

SOUTH EUROPE ATLANTIQUE HIGH-SPEED RAIL LINE
TOURS-POITIERS, FRANCE
INAUGURATED IN 2017

PUTTING BORDEAUX A MERE TWO HOURS BY TRAIN FROM PARIS: A REALITY SINCE JULY 2, 2017



70% 
MORE PASSENGERS
in the first 6 months of operation
(source: SNCF Mobilités).

Europe's largest rail project was delivered, and made its entry into service, on July 2, 2017. The high-speed rail line earned immediate public approval with 2.7 million trips recorded, from early July to late December 2017, aboard 15,000 trains. With a 94% performance rate on the SEA axis as early as September 2017, the quality of the infrastructure and related equipment has been confirmed. The 300 km high-speed link between Tours and Bordeaux encompasses 500 standard and non-standard engineering structures, including 24 viaducts and six covered trenches. The rail line crosses three regions, six departments, and 113 communes as well as 14 "Natura 2000" sites that provide habitats to 220 protected wildlife and plant species. At peak activity in summer 2013, the project employed more than 8,500 people.

HIGH SPEED TWO – PHASE 1
BIRMINGHAM, UNITED KINGDOM
NEW CONTRACT IN 2017

EXPORTING OUR HIGH-SPEED RAIL KNOW-HOW TO THE UNITED KINGDOM

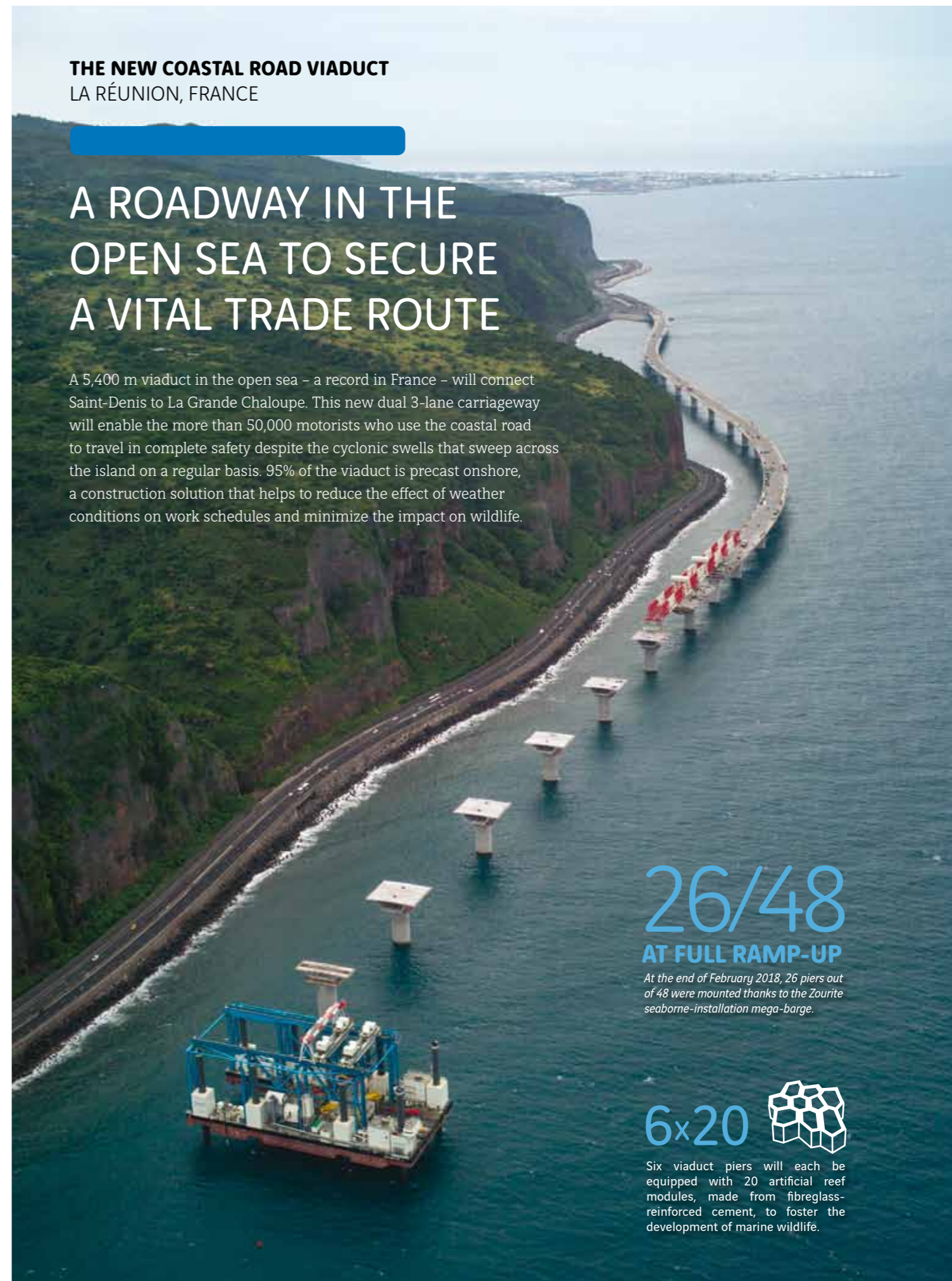
London to Birmingham in a mere 49 minutes – that's the ambitious goal the High Speed Two programme is striving to achieve by 2026 (phase 1). Together with our partners, we were awarded (as part of an Early Contractor Involvement - ECI - initiative) lots N1 and N2 in this programme. Lot N1 involves 39 km of high-speed rail line in an urban zone southwest of Birmingham, including two dual-tube tunnels, respectively, 2.9 and 1.9 km in length. Lot N2, located north of Birmingham, encompasses 46 km of high-speed rail line and numerous engineering structures, including spans over motorways M6 and M42. These new contracts add to our railway achievements in the United Kingdom, where from 1998 and 2004 we delivered three projects for the High Speed One line, which connects London to the continent *via* the Chunnel.



THE NEW COASTAL ROAD VIADUCT
LA RÉUNION, FRANCE

A ROADWAY IN THE OPEN SEA TO SECURE A VITAL TRADE ROUTE

A 5,400 m viaduct in the open sea – a record in France – will connect Saint-Denis to La Grande Chaloupe. This new dual 3-lane carriageway will enable the more than 50,000 motorists who use the coastal road to travel in complete safety despite the cyclonic swells that sweep across the island on a regular basis. 95% of the viaduct is precast onshore, a construction solution that helps to reduce the effect of weather conditions on work schedules and minimize the impact on wildlife.



26/48
AT FULL RAMP-UP

At the end of February 2018, 26 piers out of 48 were mounted thanks to the Zourite seaborne-installation mega-barge.

6x20 

Six viaduct piers will each be equipped with 20 artificial reef modules, made from fibreglass-reinforced cement, to foster the development of marine wildlife.

ATLANTIC BRIDGE
COLON, PANAMA

DECK JOIN-UP OPERATIONS COMING UP OVER THE PANAMA CANAL

At 3,100 m in length, consisting of all-concrete decks, featuring a dual 2-lane road configuration and 1 km access viaducts on either side of a cable-stayed structure 1,060 m long, the Atlantic Bridge cuts an impressive figure in its landscape of locks and sluices. In 2017, construction of the access viaducts was completed. In January 2018, the pylons, 212.5 m in height, were completed. Join-up operations for the cable-stayed bridge are scheduled for the end of summer 2018, and delivery of the project is set for 2019.

1 **530 M**
This is a world record length for a concrete cable-stayed span.

NO 
STOPPAGE IN NAVIGATION

The bridge-construction methods were designed to enable container-vessel traffic – a key national resource – to proceed without interruption.



RAIL STATION BELOW CNIT AND ADJACENT TUNNELS – EOLE PROJECT
PARIS - LA DÉFENSE, FRANCE

"SUSPENDING" A SHOPPING CENTRE WITHOUT STOPPING ITS OPERATIONS


350,000 M³
That's the volume of excavation material that must be removed from this project site located in the middle of France's largest business district with more than 200,000 users a day and more than 8 million tourists a year.

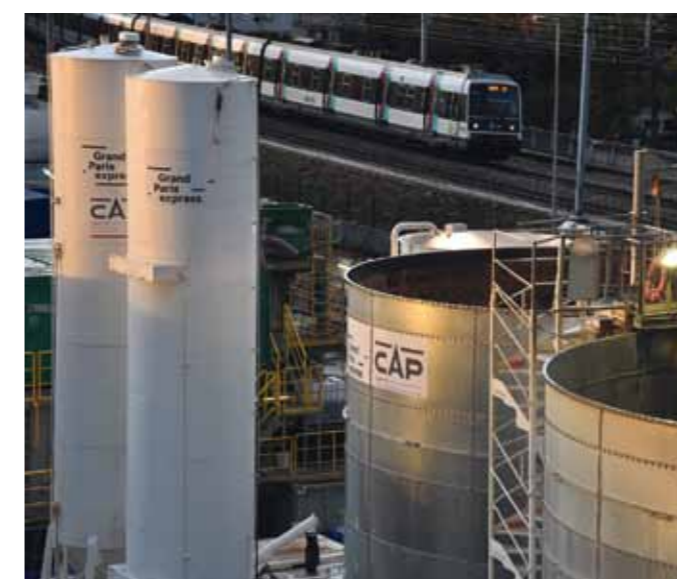
To build the new RER E rail station at La Défense, along with a kilometre-long set of tunnels, a shaft 40 m deep and 15 m in diameter, and several underground pedestrian passageways, many challenges have to be overcome. One of the major achievements of the projects, successfully completed in 2017, was to underpin the 125 piles in the CNIT car park in efforts to "suspend" the site and carry out excavation for the underground rail station. Minimising works-related nuisances is another key issue in this project since the shopping centre – including a four-star hotel – had to continue to operate.



 *This ambitious project will mobilise the Group's expertise for the next 20 years. It's a fantastic technical challenge but also a true human challenge.* >>>

Xavier Huillard,
CEO, VINCI

**GRAND PARIS EXPRESS – LINE 15 SOUTH,
LOT T3C**
ISSY - VILLEJUIF, FRANCE
NEW CONTRACT IN 2017



INTERCONNECTING CITIES IN SOUTHERN ÎLE-DE-FRANCE

Île-de-France Region has launched its largest infrastructure project of the 21st century: Grand Paris Express. We are the lead contractors in the consortium that is building lot T3C, from the underground train station at Fort d'Issy-Vanves-Clamart to the future train station at Villejuif-Louis Aragon, that is 8.2 km of tunnel construction in a very urban setting along with eight shafts and five new train stations.

LIGHT RAIL TRANSIT SYSTEM

LUSAIL, QATAR

QATAR'S FIRST URBAN TRANSPORT NETWORK OPERATIONAL AS OF 2018

Through our subsidiary QDVC (51% Qatari Diar, 49% VINCI Construction Grands Projets), we are assisting our client on an Early Contractor Involvement project to design and build a 30 km light-rail transit (LRT) system in the new city of Lusail, located north of the capital of Qatar. Civil engineering operations for the system's underground portion (including 10 km of track and seven stations) have been completed.

Construction of the Pearl intermodal station, which will connect the Doha metro system and Lusail's tramway network, is under way. In June 2014, Alstom joined the project to form, in conjunction with QDVC, the consortium that will deliver the final and most important phase of the mandate, which includes - for QDVC - technical and architectural work packages, the depot, the ventilation, communication, and control systems, - and for Alstom - tracks, power-generation, and, of course, rolling stock. The first line will be delivered on December 18, 2018 during the country's national celebrations and the three following lines in 2020.



ZERO CATTENARIES

The Lusail LRT network is a leading-edge transport system that uses catenary-free technology for optimal visual appeal. As a result, power will be delivered at grade to the system by a third track on the ground.

RED LINE SOUTH

DOHA, QATAR

FERRYING VISITORS TO QATAR FROM THE AIRPORT TO THE CITY'S HISTORIC CENTRE

Football fans on their way to Doha for the FIFA World Cup in 2022 will use the metro network we are building. Our consortium is in charge of designing and building a 13.8 km twin-tube tunnel to ferry visitors to Qatar from the airport to the city's historic centre. The contract also calls for the construction of 6 underground stations, 51 safety connections between the tubes, and three emergency evacuation shafts.

UP TO 5,638

The project trained an average 3,340 workers and engineers per month in 2017, with a peak at 5,638 trainees in May 2017.



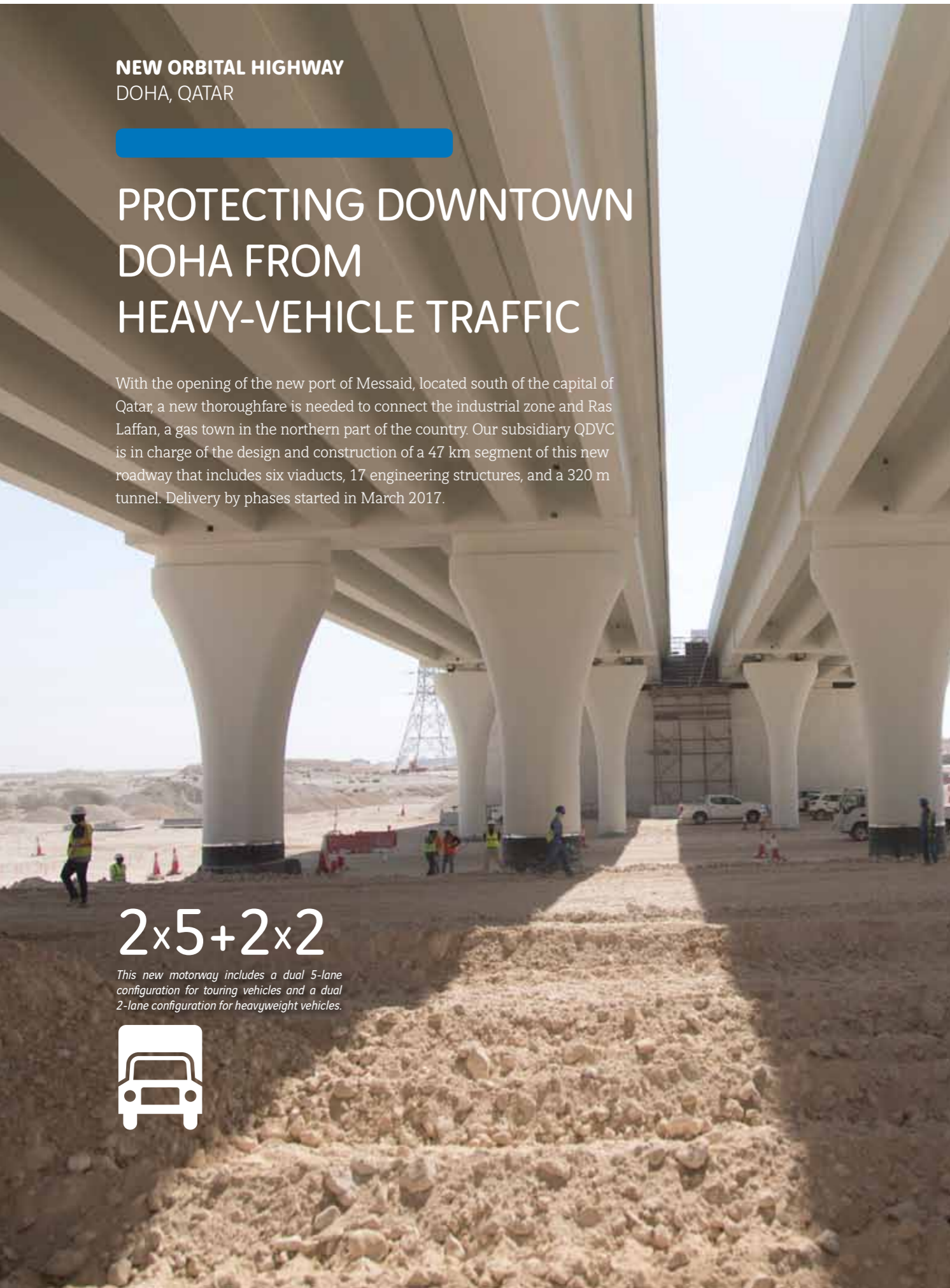
NEW ORBITAL HIGHWAY
DOHA, QATAR

PROTECTING DOWNTOWN DOHA FROM HEAVY-VEHICLE TRAFFIC

With the opening of the new port of Messaid, located south of the capital of Qatar, a new thoroughfare is needed to connect the industrial zone and Ras Laffan, a gas town in the northern part of the country. Our subsidiary QDVC is in charge of the design and construction of a 47 km segment of this new roadway that includes six viaducts, 17 engineering structures, and a 320 m tunnel. Delivery by phases started in March 2017.

2x5+2x2

This new motorway includes a dual 5-lane configuration for touring vehicles and a dual 2-lane configuration for heavyweight vehicles.



SHATIN TO CENTRAL LINK
HONG KONG, CHINA

THE CHALLENGE OF ENHANCING MOBILITY IN A HYPER-URBAN SETTING

In September 2016, the Hin Keng to Diamond Hill tunnels were delivered to the client, MTR. In 2017, project teams completed exterior works along with technical and architectural works. The line will be opened to the public in 2019.

PROJECT OF THE YEAR



in the €50 to 500 million category. On November 16, 2017, the International Tunnelling and Underground Space Association (ITA) awarded its project of the year prize to us. "In a complex geological situation, different tunnelling methods had to be used such as cut-and-cover and drill-and-blast at only 6 m above a live water supply tunnel. Also, a TBM crossed twice at 6 m below an operating railway line", commented the ITA judges' panel at the awards ceremony.



CROSSRAIL PROJECT, LOTS C510 AND C515
LONDON, UNITED KINGDOM

OPENING OF THE ELIZABETH LINE IN LATE 2018 IN LONDON



With our British partners, we took part in this gigantic project that consisted in endowing London with a new Underground line from east to west, which 200 million passengers will use every year.

We undertook lots C510 and C512 for the new Whitechapel Station and built conventionally excavated tunnels for Liverpool Street Station and Whitechapel Station. In this project, we overcame numerous challenges, including supplying and removing excavated materials, minimising noise, and building a footbridge connecting several lines in Whitechapel above a line in operation. The project site was inspected every year by the Considerate Constructors Scheme (CCS), achieving record scores as high as 44/50.

24/7
With work being carried out 24 hours a day, 7 days a week.



ZERO
traffic interruptions
during the project.

RIJNLANDROUTE
LEIDEN, THE NETHERLANDS
NEW CONTRACT IN 2017

**ENHANCING THE
NETHERLANDS'
MOTORWAY NETWORK**

Once again, four years following the delivery of the Coentunnel project in Amsterdam, our consortium put its know-how to work for the Netherlands – this time in and around Leiden on the RijnlandRoute project. The project calls for widening a 12 km stretch of motorway, building N434 (a 4 km roadway, including drilling a 2.2 km tunnel), and installing newly required interchanges. Thanks to this work, the cities of Katwijk (via A44) and Leiden (on A4) will be more efficiently interconnected. The contract also calls for maintenance of this new infrastructure for 15 years.



MOTORWAYS
CORINTH-PATRAS-TSAKONA
AND MALIAKOS-KLEIDI, GREECE
INAUGURATED IN 2017

**INTERCONNECTING REGIONS
IN GREECE WITH A SAFE AND
RELIABLE MOTORWAY NETWORK**

In 2017, a total of 360 km of motorway was delivered in Greece after a 10 year works hiatus resulting from the country's severe financial crisis. There were challenges involved in this effort due to the presence of active seismic faults at project sites, abundant buried archaeological artefacts, and stringent safety measures in effect for tunnel-boring and tunnel-supply operations. The environment also received particular attention with compensation measures such as the planting of 30,000 shrubs along the Maliakos-Kleidi motorway.

LINEA AMARILLA URBAN HIGHWAY
LIMA, PERU

**ENHANCING TRAFFIC FLOW
IN THE CAPITAL OF PERU**

Our mission on this urban highway project that is critical for optimising mobility in Lima is two-pronged: first, to provide project management assistance (in December 2016, VINCI Highways, a subsidiary of the VINCI Group, finalised the acquisition of Lamsac, the company in charge of the project); second, to build project structures in a joint venture with our local partner.

This 9 km, 2 x 2 lanes highway in central Lima will help relieve traffic congestion in the city centre. Work will be carried out right in the middle of a densely populated area criss-crossed by utility networks. The project encompasses 12 viaducts, one 1.8 km tunnel, the Bella Union bridge that spans the Parque Rimac river, three toll stations, administrative buildings, safety equipment, and signalling systems.



MORE THAN 15 MILLION
vehicles use this highway every year: ensuring the safety of worksite personnel and motorists – during this road-widening project to be conducted without interrupting traffic – is a top priority on this project.



BOGOTA-GIRARDOT HIGHWAY
COLOMBIA

**WIDENING COLOMBIA'S
BUSIEST HIGHWAY**

Our teams have delivered in 2017 the design phase of this project to upgrade 141 km of highway running from the capital of Colombia to the country's largest seaside resort. The project calls for widening a 65 km segment to 2 x 3 lanes configuration, building four tunnels (with a total length of 2 km), building or expanding 28 engineering structures, and erecting 35 footbridges.

PUMPED-STORAGE POWER PLANT
 ABDELMOUMEN, MOROCCO
 NEW CONTRACT IN 2017

SUPPORTING ENERGY TRANSITION IN MOROCCO

The Abdelmoumen power plant is a pumped-storage hydroelectric energy facility. The water stored in a tank located uphill will be released into a 3 km transfer line (1 km of which will be underground) and travel along a natural slope to a tank located 550 m downhill. A 350 MW hydroelectric power plant will be built along the penstock between the two reservoirs. This reversible-operation plant will generate electricity when operating in turbine mode and pump water from the lower to the upper reservoir in pumping mode, thereby generating renewable energy on demand.

VINCI CONSTRUCTION SELECTED TO BUILD A PUMPED-STORAGE HYDROELECTRIC PLANT IN MOROCCO

In a joint venture with the **Andritz Hydro** electromechanical company

Contract value **€284m**

Turnkey delivery

48-month project in the Abdelmoumen site, near Agadir

840 people recruited

An **energy storage** solution

Goal:

Help ensure Morocco's energy independence



780
 employees recruited and trained locally.

x20

The system can be switched between pumping and turbine mode up to 20 times a day, depending on the amount of surplus electricity and the needs of the Moroccan power grid.



LIQUEFIED NATURAL GAS TANKS
 SABETTA, YAMAL PENINSULA, RUSSIA
 INAUGURATED IN 2017

STORING GAS OVER PERMAFROST

The project was inaugurated on December 8, 2017 with the president of Russia in attendance. Our teams faced temperatures as low as -50°C and the total absence of sunlight in winter – an extreme life experience on a project that had mobilized 1,860 employees from 31 different countries at peak of activity on site. The design of permafrost-friendly foundations was possible due to multiple innovations.



400 KM BEYOND THE ARCTIC CIRCLE

Supply and mobilization conditions were extreme on this project located well beyond the Arctic Circle. Everything must be carefully forecast and planned to ensure that all operations can be conducted on site.



ITER PROJECT CADARACHE, FRANCE

TAKING PART IN A GLOBAL EFFORT TO DEVELOP A FUTURE SOURCE OF ENERGY

Scientists from around the world are designing a prototype to demonstrate that it is possible to produce energy from nuclear fusion. This would resolve the problem of radioactive waste produced by nuclear fission, the method currently employed at nuclear power plants. We're supporting their efforts by constructing the building that will house the future reactor. The civil engineering requirements for this building are as complex as that of nuclear reactors of the latest generation.



AUGMENTED REALITY

On the ITER project, checks are conducted using augmented reality: design plans and built structures are superimposed so as to quickly detect discrepancies.

300 kg/m³

This is the high density attained in certain areas by steel reinforcements. A high number of inserts are also being developed to accommodate equipment and openings in future. All of it is being built with millimetric precision.

EXPANDING AND RENOVATING SANTIAGO AIRPORT SANTIAGO, CHILE

DOUBLE THE AIRPORT'S CAPACITY TO CONSOLIDATE SANTIAGO'S POSITION AS A REGIONAL HUB



This project was awarded a 2017 BIM d'Or prize in the "International Building category."


To raise Santiago Airport's capacity from 16 million to 30 million passengers by 2020, the concession-holding company (including Aéroport de Paris, VINCI Airports and Astaldi) awarded a design-build contract for a new terminal to our company. The new facility will feature 350,000 m² of floor space but also 550,000 m² of new tarmac and taxiways and 185,000 m² of car parks. In addition, the existing terminal will be renovated. Planning is crucial on this project since work is being carried out without impeding current airport operations. On this project, the use of BIM (Building Information Modelling, see p. 37) is being extended to the post-construction operations and maintenance phases.



DOMESTIC TERMINAL AT PHNOM PENH AIRPORT
 PHNOM PENH, CAMBODIA
DELIVERED IN 2017

A BRAND NEW **DOMESTIC TERMINAL** FOR AN EVER-INCREASING NUMBER OF **TOURISTS**

In 2017, following the inauguration of new international terminals at Phnom Penh Airport and Siem Reap Airport in March 2016, our teams delivered a new arrivals hall and boarding-area extension at Phnom Penh Airport. Now tourists will benefit from two additional boarding gates. More than 10,000 m² of floor space has been added to the existing terminal.

 **+25%**
 Passenger volume at Phnom Penh Airport surged by 25% in 2017 as compared with 2016, with a total of 4.2 million passengers.



MANDARIN ORIENTAL HOTEL
 LONDON, UNITED KINGDOM

A **12,000 M²** PLUS **RENOVATION** IN A **VIP SETTING**

London's Mandarin Oriental, located in the up-market area of Knightsbridge, adjacent to Hyde Park, is getting a makeover. The project calls for renovating 12,000 m² of rooms and reception spaces (lobby, reception area, hallways, a spa, lifts) and upgrading electrical and plumbing systems as well as the building's façade. The project includes creating two new suites on the 9th floor with a view of Hyde Park, which will bring the number of rooms at the hotel to 170. In 2017, half the rooms were renovated and delivered to the client.

 **NO** interruption

This luxury hotel will remain open and operational during the project thanks to a detailed work schedule developed with the use of BIM.

100% Plendi

London's Mandarin Oriental is the Plendi brand's first project. Plendi brings together the know-how of VINCI Construction companies in the area of luxury facilities. To find out more, visit plendi.com.

DRINKING-WATER TREATMENT PLANTS
PHNOM PENH AND SIEM REAP, CAMBODIA
NEW CONTRACTS IN 2017

ADDRESSING GROWING DEMAND
FOR WATER IN CAMBODIA



Given Phnom Penh's economic development and the growing inflow of tourists at Angkor Wat in Siem Reap, Cambodia's demand for water is surging. After delivering the Niroth treatment plant in early 2017, our teams were already active the following summer on two drinking-water treatment plants in Chamkar Mon, a district of Phnom Penh, and in Siem Reap.

At Chamkar Mon, teams have already demolished the former plant to begin the design-build process for a new plant whose production capacity, at 52,000 m³ per day, will be more than double that of the old plant. At Siem Reap, the project began with construction of a water intake with a capacity of 30,000 m³ per day. Then came an increase in production capacity for the existing plant of 15,000 m³ per day. Finally, the project will move toward completion with the installation of transfer piping over a distance of 6.5 km.

DRINKING-WATER SUPPLY
HO CHI MINH CITY, VIETNAM
NEW CONTRACT IN 2017

BRINGING DRINKING WATER
TO THE RESIDENTS OF
HO CHI MINH CITY

Drinking-water supply company Ho Chi Minh City (Sawaco) awarded to our consortium with Bessac (a subsidiary of Soletanche-Freyssinet) a design-build mandate for a drinking-water supply line 10 km long. The project, on which we will oversee the design phase, calls for the production and installation of prefabricated reinforced concrete components 3 m in external diameter using the pipe-jacking technique. We will also deliver 16 shafts, 11 junctions, and five branches for future junctions.

2 CHALLENGING INTERFACES

The project site runs along Line 1 of the metro system currently under construction and will also run below the Saigon River.



EXPANDING AND UPGRADING
THE PORT
KINGSTON, JAMAICA

HELPING KINGSTON
ACCOMMODATE
HUGE SEA VESSELS

Following the launch of new locks in the Panama Canal, the port of Kingston has begun work to upgrade and expand its facilities to accommodate the world's largest container ships, including changing all dock equipment, dredging an access channel, reinforcing the soil, reclaiming 50,000 m² of land for traffic purposes, and anchoring the port's new cranes – all at a busy site prone to seismic and cyclone activity. This technically challenging project required innovative variants to allow us to meet tight deadlines all the while ensuring worker and employee safety at this busy port.

12 months

The first half of the project must be delivered in only one year without interrupting operations at this busy site.



90,000 m³

of stormwater-storage capacity thanks to the Shieldhall project.

SHIELDHALL TUNNEL
GLASGOW, UNITED KINGDOM

CLEANING UP THE RIVER
CLYDE

Neither former coal mines (treated beforehand with injection operations) nor glacial till nor even the shallow passageway under three operating railway lines and a motorway (M77) could stop our slurry-shield tunnel-boring machine, Daisy the Driller! Tunnel-boring operations were completed on October 12, 2017 after 5.1 km at depths of up to 20 m. Electrical and mechanical equipment must now be installed prior to commissioning in the second quarter of 2018.

TIDEWAY, EAST LOT
LONDON, UNITED KINGDOM

RECONCILING LONDONERS WITH THE RIVER THAMES

In the wake of the Lee Tunnel project, the consortium in charge of the Thames clean-up operation has attributed three new lots for the development of wastewater collection tunnels. Our consortium was awarded the East Lot, which will connect Chambers Wharf and the Abbey Mills Pumping Station, which is at one end of the Lee Tunnel. For this new design-build mandate, the main 5.5 km tunnel is complemented by a 4.6 km connecting tunnel, five shafts ranging in internal diameter from 17 to 25 m of a depth up to 65 m, connecting structures, and electromechanical works.



**The 2017
"Be Inspired"
Awards**

On October 11, 2017, the judges' panel for the Be Inspired Awards rewarded our Tideway - East Lot project for implementing a collaborative BIM system that allows 12 different technical trades located in 15 sites across Europe to work closely together.

NEW DAM
ASSIUT, EGYPT

THE NILE DIVERTED AND RESTORED

In 2012, 27 years after the delivery of the Aswan Dam, we launched a new dam-building project in Egypt. The mandate was to design and build a new dam 400 m downstream from the existing Assiut Dam, which was erected in 1902. To that end, we diverted the Nile at this location to dry-build the new dam, two locks to ensure river navigation, a power-generation plant consisting of four 8 MW turbines, two spillways equipped with eight 17 m gates, and a 4 lanes road bridge. In 2016, the course of the Nile at the location of the diversion was successfully restored.



WMI AND HYDROPLUS, TWO SUBSIDIARIES TO OFFER A GREATER RANGE OF SERVICE IN THE WATER-MANAGEMENT SECTOR

To minimize water losses in drinking-water networks and improve water-network performance, WMI has been offering an integrated solution since 1989. WMI's expertise, already tested in more than 40 countries, translates into benefits all along the drinking-water value chain, from production to distribution to consumers.

Find out more: wmi-water.com

Hydroplus was founded in 1991 in efforts to develop innovations to prolong the useful life of dams. Hydroplus invented and patented the Fusegate®, which can be used to increased dams' storage capacity and enhance their safety, thereby improving the performance of flood-protection dikes.

Find out more: hydroplus.com

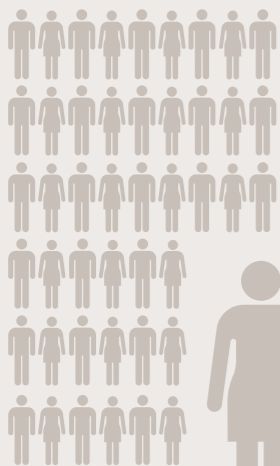


**OUR
PEOPLE,
OUR
RESOURCE**

6,996
EMPLOYEES
IN THE
WORLD



INCLUDING
1,156
MANAGERS



1,332
HIRES UNDER
PERMANENT
CONTRACT

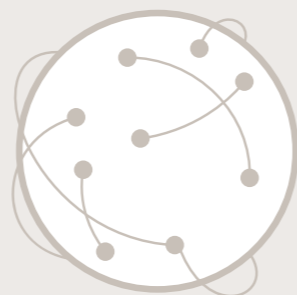


21%
WOMEN

146
VINCI
MOBILITY
CONTRACTS

VINCI Mobility contracts allow international managers to enjoy permanent contracts with benefits such as health insurance or a retirement savings plan. This type of contract helps to retain our best employees around the world.

29
NATIONALITIES



The choosemycompany label is attributed in partnership with Echos Start and rewards excellence in managing and motivating trainees and work-study students! It's the students who get to judge the quality of their traineeship or work-study programme. VINCI Construction Grands Projets ranks in the top 10 of the 2,000 companies that were selected and evaluated. In fact, we obtained an overall grade of 4.15/5 and a recommendation rate of 90.2%.

**21,800 HOURS OF TRAINING IN 2017
OR 4.9% OF TOTAL PAYROLL**



**305 EMPLOYEES
TRAINED IN MULTICULTURAL
MANAGEMENT**

We gauge our success by our clients' satisfaction. It is therefore fundamental that we understand, from the very first meeting, the cultural context we're working in, on all five continents. Furthermore, the integration of partners and local economic networks into our activities demands that we fully comprehend these environments. Finally, an understanding of cultural differences ensures that the structures we build are fully adopted by the populations for whom they are intended.



**749 EMPLOYEES
ATTENDED ORCHESTRA TRAINING**

Orchestra is the training available since 2007 for employees supervising works. Employees master worksite preparation and production, while developing appropriate quality and safety habits.



**413 MANAGERS
ATTENDED TEAM GRANDS PROJETS
44 SPEAKERS
IN TEAM GRANDS PROJETS**

Created in 2008, Team Grands Projets is the academy of excellence for future senior project managers. The company's experience and knowledge are passed on through direct testimonials, in a spirit of sharing that fosters a true company culture.



**2,440 WORKERS
ATTENDED SKILL UP TRAINING
12 SESSIONS
DELIVERED IN EGYPT, CHILE,
AND CAMBODIA**

Since 2012, Skill up has operated as a mobile training school for workers around the world. Project managers identify tasks on which local workers need to be trained in order to achieve our quality and safety criteria. A knowledge and skills transfer program is developed, and then our multi-lingual trainers, once foremen themselves, go on site to provide hands-on training.



SAFETY IN EVERY PROJECT



SAFETY FIRST

Safety is one of the most important values at VINCI Construction Grands Projets. The "Safety First" policy applies to everyone within the organization, at every level, to ensure that worksites remain safe and that each and every person's well-being is respected.

Beyond the application of laws, regulations and contractual obligations, all means are put forward to protect the health and guarantee the safety of all stakeholders: employees, subcontractors, partners, clients, visitors and future users.



SAFETY BEGINS WITH DESIGN

The safety of our workers, stakeholders and users of our structures must be guaranteed throughout the life cycle of our projects, and this begins with the design phase.

Implemented at VINCI Construction Grands Projets since 2014, the **Safety in Design** approach consists in optimizing our construction works in terms of health and safety during their design and worksite preparation, to ensure optimal safety throughout the construction, operation and facility management phases.

235
QSE MANAGERS'
NETWORK AROUND THE WORLD

370 employees trained with the basic session, in **8** countries, for **54** sessions

BUILDING A CULTURE OF SAFETY



Launched in 2011 by VINCI Construction, the **Managing with Safety** program is aimed at senior management teams. The goal is to build a genuine culture of safety by ensuring accountability at the highest level.

347 employees, in **8** countries, for **16** sessions



The operational version of the **Managing with Safety** program has been implemented on our projects since September 2013 with **Safety Boost**. These coaching sessions enable worksite supervision teams to fully understand their own role in ensuring safety.

218 employees, in **5** countries, for **15** sessions



Created in 2008, **(A)live on site** training increases workers' awareness of their attitudes and behaviours through the use of videos taken on site, on which workers are then invited to comment. This self-critiquing exercise raises the level of safety awareness on the worksite.

1,215 employees, in **13** countries, for **93** sessions

Prestart

Prestart training, which was created in 2017, enables worksite management teams to develop their skill sets to ensure that their daily messages for workers regarding appropriate work preparation results in the best possible outcomes. **Prestart** allows participants to share easy-to-understand information on the tasks at hand, tools, work settings, potential hazards, and the need for vigilance.

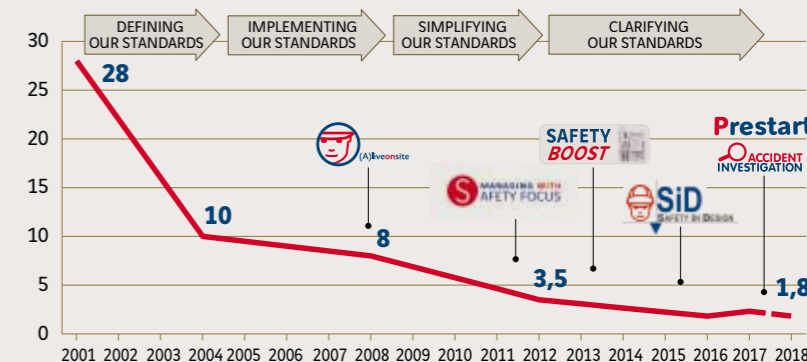
215 employees, in **5** countries, for **21** sessions



Accident Investigation training, launched in 2017, aims to provide in-house certification to employees who can effectively analyse all types of incidents and accidents, provide crisis-management assistance, carry out investigations, detect root

causes, and recommend action to prevent any recurrence. Thanks to this trained team, we can deliver in-depth work and thereby reduce the number and severity of accidents in efforts to achieve our goal of zero severe accidents.

15 employees, in **1** country, for **2** sessions



ENGINEERING CENTRALISED, MULTI-DISCIPLINARY EXPERTISE FOR THE DESIGN AND CONSTRUCTION OF COMPLEX STRUCTURES

**200 ENGINEERS AND
TECHNICIANS WORKING
FOR OUR PROJECTS**



10

**PLANTS AND
LOGISTICS**



9

**BUILDING
ENGINEERING**



8

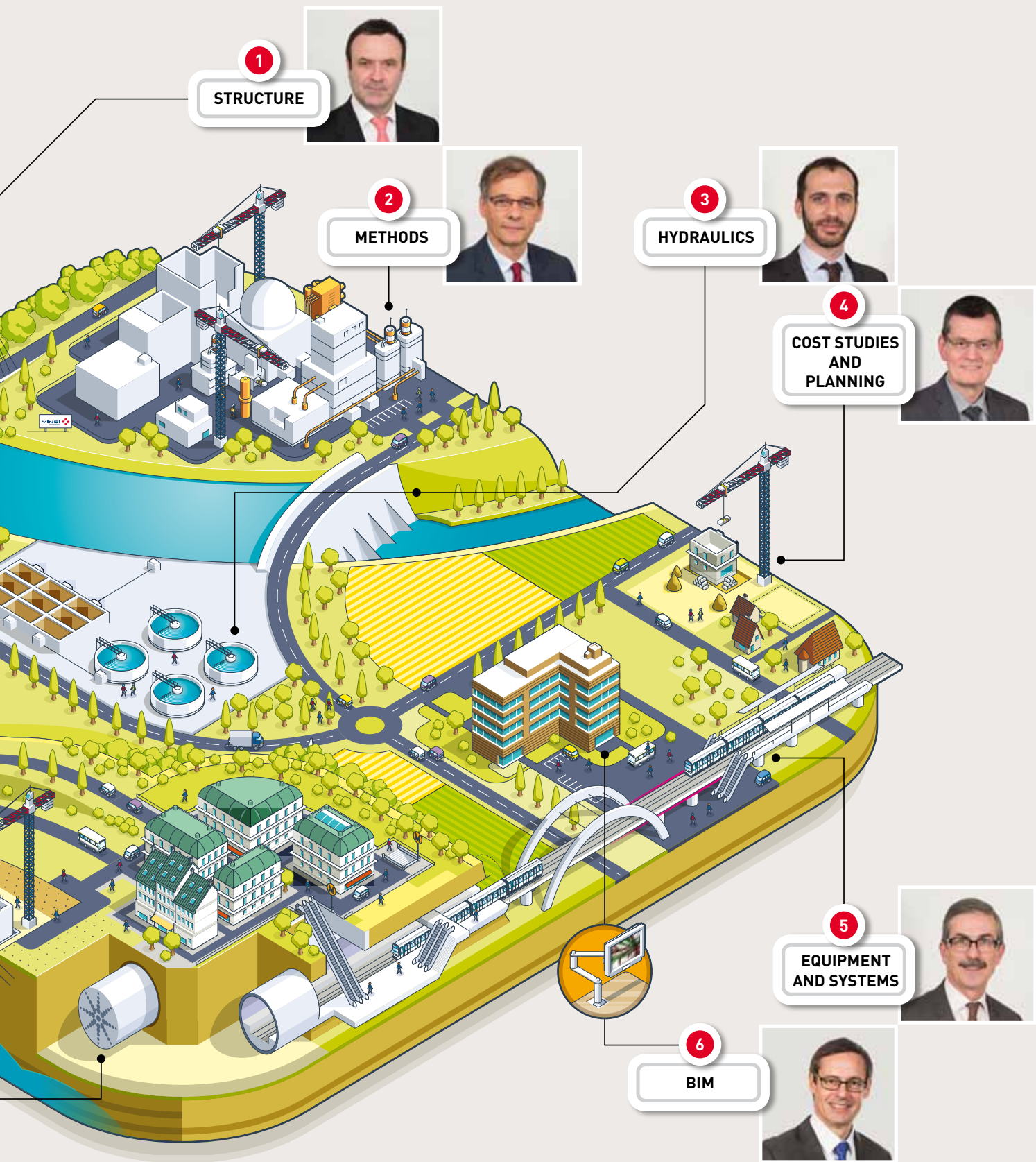
**R&D, CONCRETE
AND GEOTECHNICS**



7

**UNDERGROUND
ENGINEERING
WORKS**

- 1 // Philippe Moine
- 2 // Bruno Francou
- 3 // Geoffroy Desportes
- 4 // Olivier Avril
- 5 // Gilles Causse
- 6 // Olivier Cuchet
- 7 // François Renault
- 8 // Laurent Boutillon
- 9 // Philippe Mardon
- 10 // Marc Bohin



R&D AND INNOVATION PERFORMANCE LEVERS

In 2017:

3 FRENCH RESEARCH PROJECTS

12 ACADEMIC ASSOCIATIONS and **9** PROFESSIONAL ASSOCIATIONS

Courses taught in **8** ENGINEERING OR TECHNICAL SCHOOLS

11 ACTIVE PATENTS

LinKtech

COOPERATE

At VINCI Construction Grands Projets, innovation and the technical optimization of worksites are part of our DNA.

LinKtech is our network for members of the technical teams to discuss and exchange information, with the goal of increasing team effectiveness. In addition to capitalizing on experience in the field, **LinKtech** also serves to anticipate construction issues that may arise in the future.

The strength of the VINCI Group lies in its ability to unite the various business lines with construction, operation and maintenance.

Through the internal network **Cooperate**, we have access to the know-how and expertise of our colleagues involved in Concessions business line and we can therefore integrate the post-delivery needs of our clients right from the design stage.

Externally, VINCI Construction Grands Projets is actively involved in a number of educational and research projects.

BIM D'OR ACHIEVEMENTS

In 2017, VINCI Construction Grands Projets was once again rewarded in the "International Building" category. After earning this distinction in 2016 for our renovation of the historic Mandarin Oriental Hotel building in London, we were rewarded once again in 2017 for implementing BIM on our design-build airport project in Santiago, Chile. The project's digital model will also be used to manage maintenance and operations post-delivery.



INFORMATION SYSTEMS THAT ENHANCE PERFORMANCE

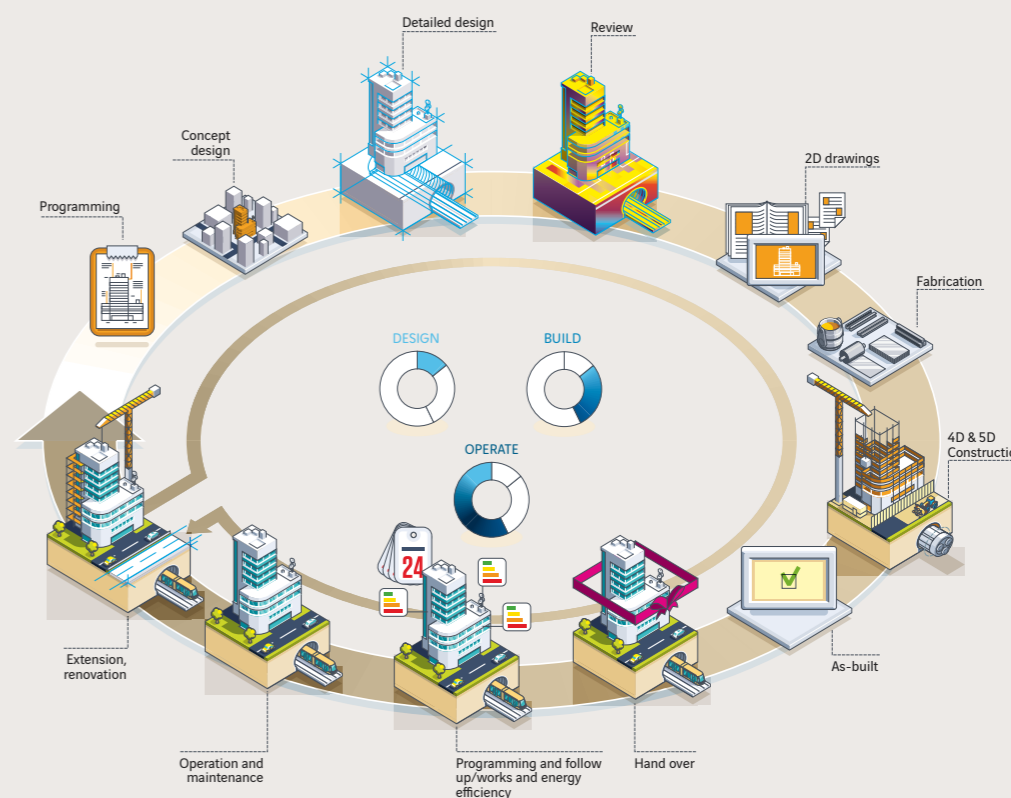
The recognized technical and scientific capacity of the Engineering department of VINCI Construction Grands Projets relies on the latest computer technology and calculation, design and project management software – or even better: in fact, we also develop our own, specialized tools for carrying out special projects.

BIM: BUILDING BEFORE BUILDING

The expert use of BIM – from development to operations to maintenance – on building and infrastructure projects and processes adds value and delivers new services to project clients and users throughout the entire lifecycle of the structure.

Given the need to ensure robust and sustainable building information models, we undertake all BIM management assignments into our projects.

We leverage our acquired lifecycle expertise in our concession activities to meet requirements stipulated in the various types of contracts (set-up, construction, operation) under which we operate.



BIM IN OUR PROJECTS

Buildings: Phnom Penh and Siem Reap (Cambodia), Santiago (Chile) airports - Cancer Research Center, Design phase (Kazakhstan) - Mandarin Oriental Hotel London (United Kingdom).

Infrastructure: Crossrail, London (United Kingdom) - Atlantic Bridge (Panama) - Doha Metro (Qatar) - Lusail LRT (Qatar) - Tideway, London (United Kingdom) - EOLE, rail station below CNIT, Paris - La Défense (France).



OUR TEAMS EARNED 13 AWARDS IN VARIOUS CATEGORIES

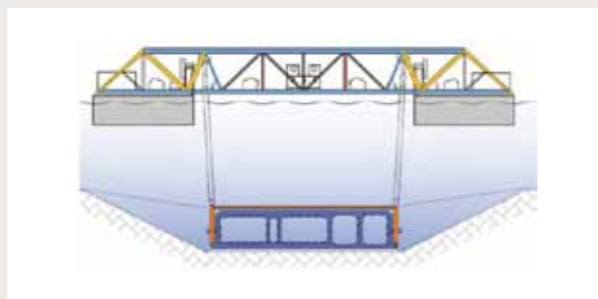


GRAND PRIZE "HAUTE COUTURE" AT 4,500 T

This innovation was developed as part of the construction of the Nouvelle Route du Littoral viaduct at La Réunion. It is a new and highly precise method of positioning pier bases – some as heavy as 4,500 t – in the water. This procedure, which allows for to-the-millimetre placement of massive structural components, confirmed our decision to prefabricate everything on land for this project.



The jury saw all of the advantages inherent in this innovation with respect to safety since no employee needs to be present within the elements during the immersion phase. The jury also saw the benefits in terms of quickness of execution – by doing away with complex water-ballasting operations at sea, the immersion process takes 30% less time to complete.



SPECIAL JURY PRIZE SMART IMMERSION

To immerse the 89 tunnel elements on the Femern project, which will one day connect Denmark and Germany, our teams developed a new technique that consists in ballasting the elements prior to transport to achieve negative buoyancy. In other words, the elements tend to sink! To prevent them from doing that, they are attached to scragging pontoons which convey them to their destination. Here, the elements are lowered delicately using a lift system to the seabed without resorting to water-ballasting.



SPECIAL JURY PRIZE ZOURITE

On the Nouvelle Route du Littoral project at La Réunion, cyclone conditions on the island and strong tides at the site led the consortium to minimise work at sea. Zourite is the first self-raising barge that can load, transport, and unload components weighing up to 4,800 t. By avoiding cyclone hazards at La Réunion, it optimises pier and viaduct-segment installation performance and enhances worker safety.



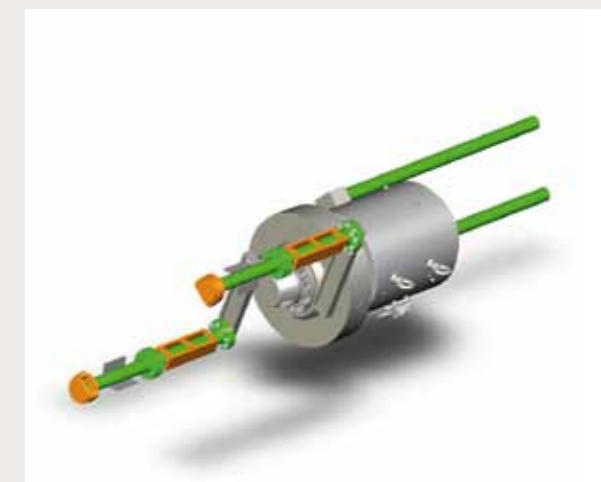
PROCESSES AND TECHNIQUES PRIZE TELESCOPIC FORMWORK SYSTEM

The two access viaducts for the Atlantic Bridge in Panama rise to 60 m above the ground. On this type of structure, formwork used for concrete-pouring operations at either end of the deck is supported by extensive shoring structures entrenched in the ground. In Panama, these shoring structures had to be resistant to strong seismic activity. VINCI Construction Grands Projets designed a telescopic formwork system in partnership with Hebetec Engineering (Soletanche Freyssinet). Thanks to this self-raising formwork system, the number of required work hours was divided by three and the number of work-at-height hours by more than ten.



EQUIPMENT AND TOOLS PRIZE ANTI-CLOGGING SYSTEM FOR TBMs

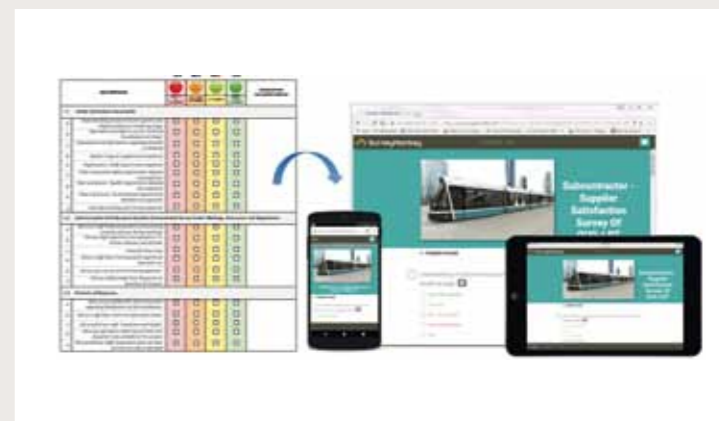
Construction of a new metro line in Hong Kong involved drilling two 1.7 km tubes using a TBM. During drilling operations for the first tunnel, the tunnel-boring machine, designed for soil consisting of alternating hard rock and decomposed granite, encountered abundant quantities of clay, which clogged the cutting wheel. Consequently, the team, in conjunction with the TBM manufacturer, Herrenknecht, designed an alteration to the cutting wheel that was effective in preventing clogging. Equipped with this new cutting wheel, the TBM excavated the second tube three months faster than the first.



PARTNERS PRIZE

A NEW KIND OF SATISFACTION QUESTIONNAIRE

QDVC (Qatari Diar/VINCI Construction Grands Projets), which is in charge of construction for the 33 km metro system in the city of Lusail in Qatar, is overseeing 43 subcontractors and more than 100 suppliers. Following six months of collaboration, an anonymous satisfaction questionnaire was sent to each subcontractor and supplier; subsequently, an action plan was implemented on the basis of the results of this survey. This client-evaluation scheme based on feedback from subcontractors and suppliers was a first in Qatar.



SPECIAL "COUP DE CŒUR" PRIZE HUMAN RIGHTS GUIDE

In recent years, major corporations all over the world have been expected to implement measures to protect human rights. VINCI created a steering committee to design a method and a supporting framework document enabling its subsidiary companies to prevent human rights violations. The Human Rights Guide is the first such document in the construction industry.



MANAGEMENT PRIZE SAFETY IN HOLLYWOOD IS FRIGHTENING, BUT NOT HERE!

After identifying the top ten project-related hazards, five video or advert excerpts featuring these hazardous situations were selected and edited into five-minute video presentations. After viewing each video, employees had 30 seconds to identify all the hazards in the presentation.



SAFETY PRIZE MOBILE ACCESS DOORS

On the Smart Motorway project in the United Kingdom, we have implemented a mobile access door system (on wheels) to gain access to work zones adjacent to motorways in operation. This system can be moved manually and quickly and helps enhance safety for teams working on project sites.



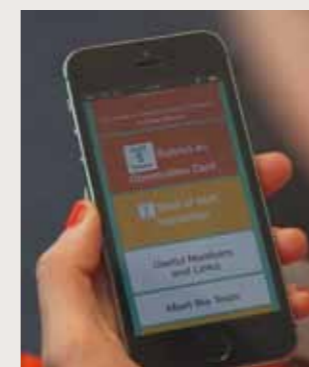
DIGITAL TRANSFORMATION PRIZE THE AUTOMATIC DASHBOARD

Faced with increasing project complexity, management needs clear and accurate progress reports. The Ohio River Bridges project in the United States has developed a platform, encompassing the project's engineering documentation, that uses data-collection and presentation to provide real-time progress reports.



DISSEMINATION PRIZE TIDEWAY EAST APP

This application, which was implemented on the Tideway project in London, is a quick and easy way to log accidents and narrowly averted accidents. It also immediately notifies project management and on-site medical personnel. This application can also be used to make an appointment with a physician or dentist or the nurse assigned to the project.



MANAGEMENT PRIZE SCIENTIFIC MANAGEMENT OF FATIGUE

This scheme, which was applied on the Crossrail C510 and C512 projects in London and on our project in Shieldhall, Scotland, involved a study of fatigue in production personnel. The employees wore connected bracelets that collected and processed information used to analyse sleep quantity and quality. Initial results showed that employees did not achieve their goal of seven hours' sleep a night, thereby potentially increasing their exposure to accidents. Accordingly, our projects implemented action plans that made use of rest periods at workstations and reduced the length of the last weekly work shift.



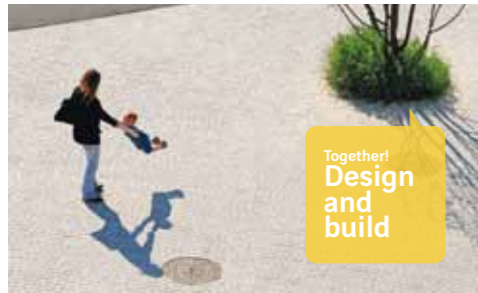
DISSEMINATION PRIZE DIGITAL CONSTRUCTION

This is an innovative integrated management system developed by COSEA (VINCI Construction) following the huge HSL Sud Europe Atlantique project. This integrated solution has managed to win over project management with its ability to industrialise processes, tools, and management resources – and also by its rapid deployment capability.



together!

As an integrated concessions-construction company, VINCI designs, finances, builds and operates infrastructure and facilities that help improve daily life and mobility. Because our projects are in the public interest, we at VINCI consider that we have a duty to reach out to our public and private sector partners and to engage in dialogue with them, and so we are publishing a new Manifesto with commitments that meet this objective.



Together!
Design
and
build

1

Our infrastructure and facilities serve the public and the common good. We therefore strive to involve all stakeholders – partners, customers, suppliers, elected officials, local residents and civil society – in our projects as early as possible.
We commit to promoting outreach and consultation in conducting our projects to ensure that our partners are closely involved.



Together!
Comply
with ethical
principles

2

Ethical behaviour is key to our contracts and our customer relations. Our companies apply our Code of Ethics and Conduct around the world.
We commit to ensuring total transparency in our own practices and in those of our subcontractors.



Together!
Promote
green growth

3

We take part in the forward-looking debate about the sustainable city and sustainable mobility. Our eco-design innovations enable us to improve the energy and environmental performance of our infrastructure.
We commit to reducing our greenhouse gas emissions by 30% between now and 2020, to supporting our customers in their quest for better energy efficiency and to encouraging their adoption of an environmentally responsible approach.



Together!
Engage
in civic
projects

4

Our business activity is rooted in local service. We therefore support the engagement of our employees and companies in sponsoring civic projects and combating social exclusion.
We commit to supporting the civic engagement of our employees, especially through the Group's foundations around the world.



Together!
Strive for
zero
accidents

5

We reject the idea that workplace accidents are unavoidable. Our management has a responsibility to do its utmost to ensure the physical integrity and the health of everyone on our worksites and in the facilities we operate.
We commit to the zero accidents objective.



Together!
Foster
equality and
diversity

6

Our culture is based on bringing together people of different backgrounds and experience. We fight all forms of discrimination in hiring, in workplace relations and in the career paths of our employees. We train our managers in this requirement and impress it on our suppliers and subcontractors.
We commit to diversifying our supervisory staff to include more women and people of diverse origins.



Together!
Promote
sustainable
careers

7

We take a long-term approach to relations with our employees. We practise responsible flexibility to foster balanced career and personal development for our employees.
We commit to proposing training and job mobility opportunities for all our employees in order to promote sustainable employability.



Together!
Share
the benefits
of our
performance

8

Our employees together represent VINCI's biggest shareholder block. We strive to share the benefits of our growth with our employees around the world through employee shareholding and appropriate profit-sharing schemes.
We commit to ensuring that every VINCI employee is given an opportunity, wherever possible, to share in our economic success.



Let us achieve increasingly ambitious design-build projects all over the world

R E A L
SUCCESS
I S T H E
SUCCESS
YOU SHARE

Follow us on



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