



2015

FACTS &  
FIGURES



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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.



*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 and CEO



# MANAGEMENT COMMITTEE

FROM TOP... (FROM LEFT TO RIGHT)

- // **Philippe Masselot**, Chief Financial Officer
- // **Arnaud Brel**, Quality, Safety, Health and Environment Director
- // **Gilles Dumoulin**, Projects' Director
- // **Jean-Luc Toris**, Engineering & Technical Capabilities Director
- // **Yanick Garillon**, Director Qatar and Arabian Gulf

... TO BOTTOM (FROM LEFT TO RIGHT)

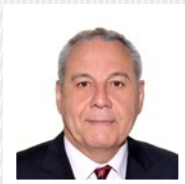
- // **Guillaume Feld**, Legal Counsel
- // **Stéphanie Malek**, Communications Director
- // **Patrick Kadri**, Director France, Mediterranean Europe, Africa, Near East & LNG tanks
- // **Alain Bonnot**, Chairman and Chief Executive Officer
- // **Éric Chambraud**, Director British Isles, Northern Europe, Americas, Russia & underground works
- // **Patrick Béchaux**, Human Resources Director



# AREAS MANAGERS



**Alexandre Ambrosini**  
Building & International  
QDVC



**Philippe Athuyt**  
France and overseas  
French territories



**Jean-Luc Audureau**  
Latin America, Carribean &  
underground works



**Sébastien Bliaut**  
Northern Europe



**Pierre Bourgeois**  
Hong Kong



**Hosni Bouzid**  
Mediterranean Europe &  
LNG tanks



**Éric Coppi**  
Arabian Gulf



**Jean-Pierre Dauban**  
Africa, Near East &  
Chernobyl



**Igor Gorwitz**  
Building Central Asia



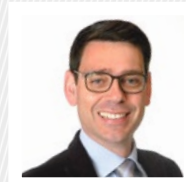
**Hakim Naceur**  
Russia



**Michel Oliveres**  
Southeast Asia



**Thierry Portafaix**  
North America



**Lionel Ravix**  
British Isles



**Jean-Philippe  
Raymond-Bertrand**  
Buildings



**Julien Rayssiguier**  
Water works



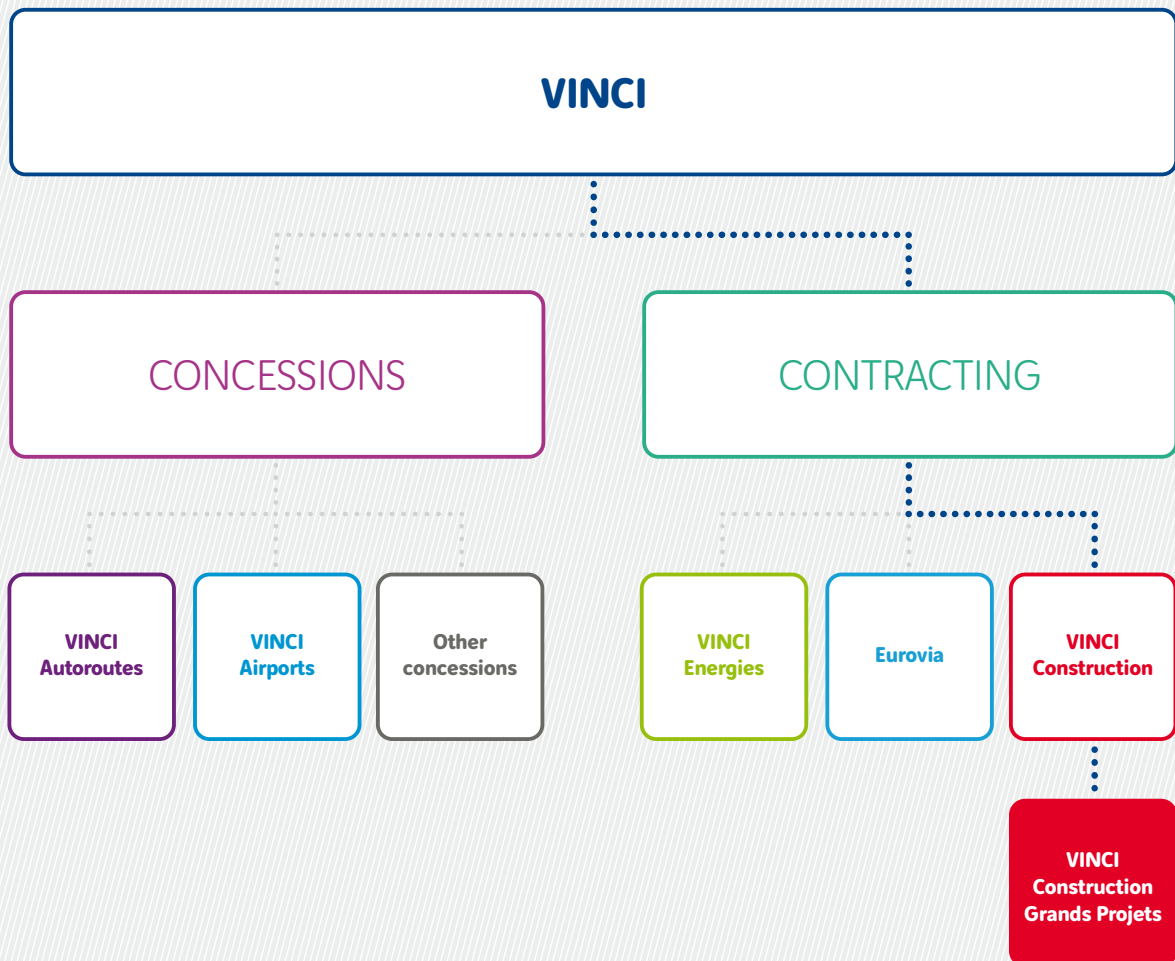
**Philippe Tavernier**  
CEO QDVC

At December 31, 2015 (including joint ventures)

## ESSENTIALS

VINCI is a global player in concessions and construction, employing more than 185,000 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.



○ 185,452

○ 68,371

● **7,898**

**EMPLOYEES  
WORLDWIDE**

○ € 38.5 bn

○ € 14.5 bn

● **€ 1.4 bn**  
**OF REVENUE**

○ € 3,758 M

○ € 299 M

● **€ 53.6 M**  
**OF OPERATING INCOME  
FROM ORDINARY ACTIVITIES**

○ € 27.7 bn (Contracting)

○ € 16.3 bn

● **€ 3.2 bn**  
**ORDER BOOK**

○ 280,000

○ 25,973

● **65**

**PROJECTS**

● **€ 502.7 M**  
**CASH**

○ 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, **Egypt**
- 7 // Lusail, Light Rail Transit, **Qatar**
- 8 // Metro line, Shatin to Central Link, lots 1103 and 1122, **Hong Kong**
- 9 // Hallandsås tunnels, **Sweden**

#### Motorways and railways

- 10 // EKPT motorway, **Greece**
- 11 // M4 Relief Road motorway, **United Kingdom**
- 12 // Smart Motorways, **United Kingdom**
- 13 // Moscow-Saint Petersburg motorway, **Russia**
- 14 // CP01, road A12, **Qatar**
- 15 // South Europe Atlantic high-speed rail line, Tours-Bordeaux, **France**
- 16 // New Orbital Highway, Doha, **Qatar**
- 17 // Ohio River Bridges - East End Crossing, **United States**

### BUILDINGS AND FUNCTIONAL BUILDINGS

- 18 // Fountains Complex, Ashgabat, **Turkmenistan**
- 19 // Berjaya Central Park, Kuala Lumpur, **Malaysia**
- 20 // Extension of Santiago airport, **Chile**
- 21 // Extension of Phnom Penh and Siem Reap airports, **Cambodia**
- 22 // Lusail car parks, **Qatar**
- 23 // Sheraton Park Project, Doha, **Qatar**
- 24 // Menara Hap Seng tower, Kota Kinabalu, **Malaysia**
- 25 // Jesselton 2 towers, Kota Kinabalu, **Malaysia**
- 26 // Odeon tower, **Monaco**
- 27 // Joukovka House, **Russia**





## HYDRAULIC INFRASTRUCTURES

- 28 // Upgrading drinking water supply network, **Djibouti**
- 29 // Extension of Niroth water treatment plant, **Cambodia**
- 30 // JJWSIP, category B, **Jamaica**
- 31 // Lee Tunnel, London, **United Kingdom**
- 32 // Yarmouk water-network modernization, **Jordan**
- 33 // New Assiut dam, **Egypt**
- 34 // Improvement of water supply in Faisalabad, **Pakistan**
- 35 // Upgrading drinking water supply network phases I and II, **Djibouti**
- 36 // Sewerage plant of Boscobel & Elletson-Flats, **Jamaica**
- 37 // Pumping Station, Thai Nguyen, **Vietnam**
- 38 // Wastewater treatment plants for the Phnom Penh and Siem Reap international airports, **Cambodia**
- 39 // Sewer systems in five cities, **Dominican Republic**
- 40 // Shieldhall tunnel, Glasgow, **United Kingdom**
- 41 // Tideway, East lot-C415, London, **United Kingdom**



## ENERGIES AND OIL & GAS

### Nuclear

- 42 // Tokamak reactor building, ITER project, **France**
- 43 // Chernobyl New Safe Confinement, **Ukraine**

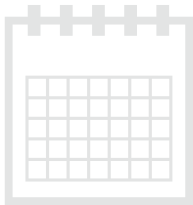
### Réservoirs GNL

- 44 // Yamal LNG, **Russia**
- 45 // Wheatstone project, **Australia**

## SOUTH EUROPE ATLANTIQUE HIGH-SPEED RAIL LINE TOURS-POITIERS, FRANCE

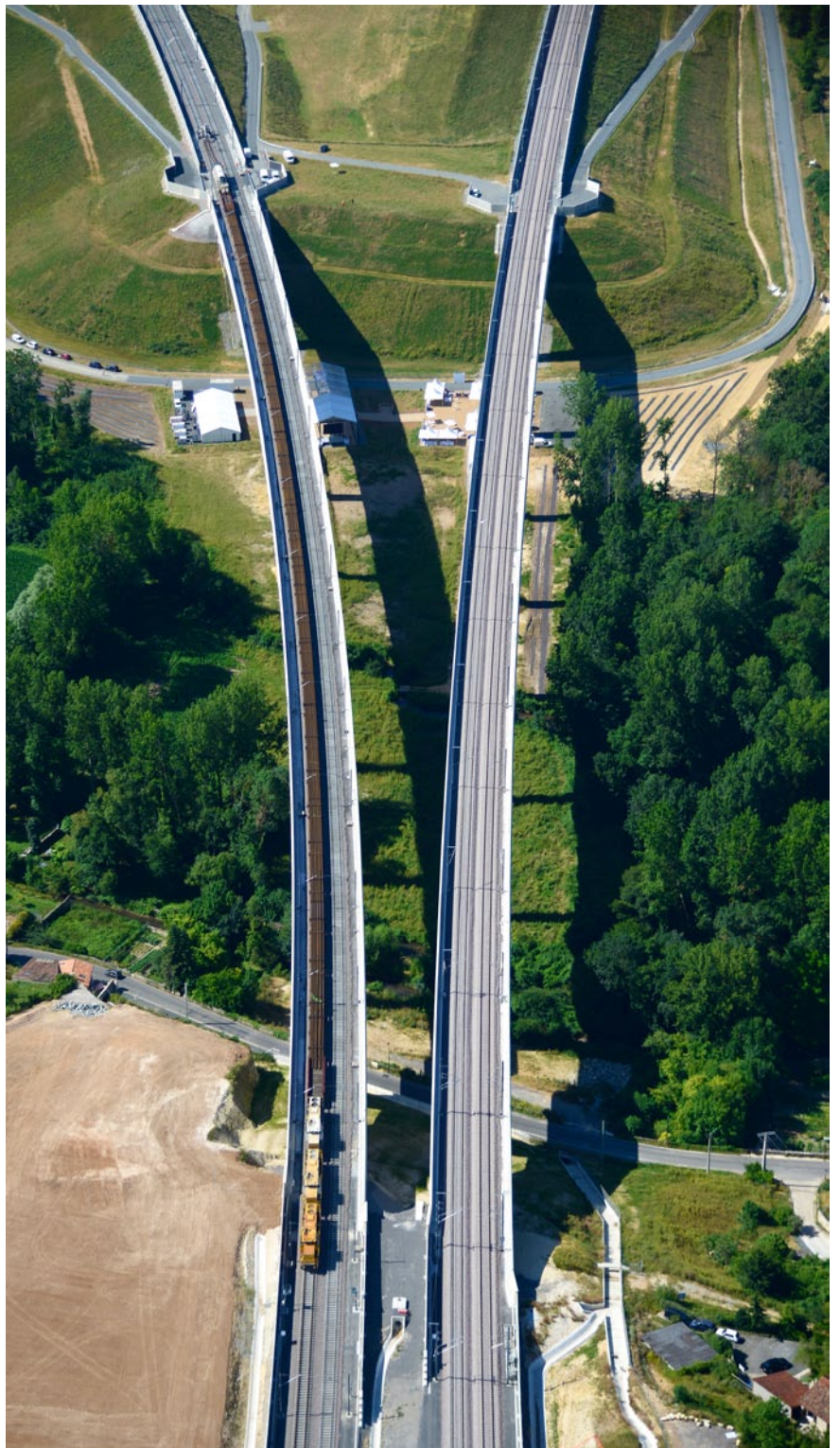
# PUTTING BORDEAUX A MERE TWO HOURS BY TRAIN FROM PARIS

Europe's largest rail project is under way. 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. The first commercial train travelling at 320 km/hr will enter into service in summer 2017!



## 6 months AHEAD OF SCHEDULE

*Civil engineering works were completed six months ahead of schedule, a feat that was celebrated on July 6, 2015 with VINCI CEO, Xavier Huillard in attendance.*



## 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 2x3 lanes 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 will be precast onshore, a construction solution that helps to reduce the effect of weather conditions on work schedules and minimize the impact on wildlife.

**XXL  
PRECAST  
SEGMENTS**

*The brand new production plant released the first precast segments in late 2015: the first pier segment on October 27 and the first base mount on November 5.*



**105<sup>M</sup>  
LONG**  
**43<sup>M</sup>  
WIDE**

*These are the dimensions of the self-propelled jack-up barge whose construction began in late 2014 in Poland. The barge will be able to transport and install 4,500 tonnes precast segments at sea. It will be delivered to Île de La Réunion in February 2016.*



**M4 RELIEF ROAD**  
NEWPORT, UNITED KINGDOM  
**NEW CONTRACT IN 2015**

**PROVIDING TRAFFIC  
RELIEF IN THE CITY  
OF NEWPORT**



The government of Wales has entrusted our consortium with the first phase of preliminary studies for the construction of a 23 km motorway designed to enable some 60,000 motorists to bypass the city of Newport.

One of this project's challenges is to cross the Usk River with a 752 m long cable-stayed bridge with a 440 m central span. The two approach viaducts, 888 and 512 m long, respectively, are just as important. Following a public consultation phase as well as the securing of permits and acquisition of land, work will begin in 2018.



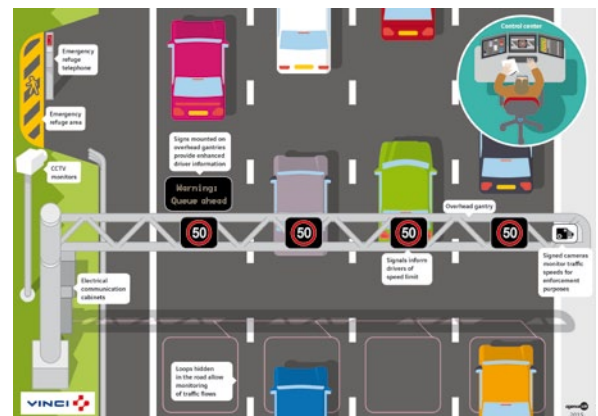
**3,227**  
stakeholders  
consulted

*As this is an Early Contractor Involvement (ECI) mandate, we were able to work closely with the client from the earliest stages of the project. We help the client with the public stakeholder consultation process to ensure that the project is being designed in accordance with the expectations of future users.*

**SMART MOTORWAYS  
(M5 JUNCTIONS 4A AND 6)**  
BIRMINGHAM, UNITED KINGDOM  
**NEW CONTRACT IN 2015**

**SMARTING UP  
BRITISH MOTORWAYS**

Relieving peak-period motorway congestion without resorting to roadway-widening schemes is a solution now available to motorway-management authorities. Accordingly, Highways England has awarded its smart motorway contract for southwest Birmingham to our consortium. Along an 18 km stretch, we will convert the emergency lane into a fourth lane available for traffic whenever congestion threatens. The project will include real-time traffic management thanks to sensors that transmit information to a control centre that can then change speed limits displayed on electronic road signs.



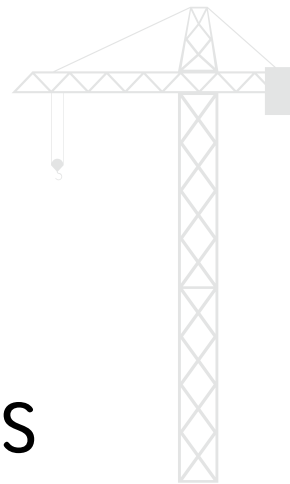
**68,000**

*This is the length, in linear metres, of cables we will install along the 18 km roadway segment that is being converted into a smart motorway.*

**OHIO RIVER BRIDGES**  
**EAST END CROSSING**  
 LOUISVILLE, UNITED STATES

# UPGRADING THE HIGHWAY NETWORK IN THE UNITED STATES

Connecting Indiana to Kentucky while bypassing the city of Louisville – that is the objective of the East End Crossing, a 12.6 km 2 x 2 lanes highway. To that end, we designed and built a 762 m cable-stayed bridge to span the fickle Ohio River as well as a 512 m twin-tube tunnel and 19 standard engineering structures. The new highway will be managed for 35 years by a concession-holding consortium that includes VINCI Concessions.



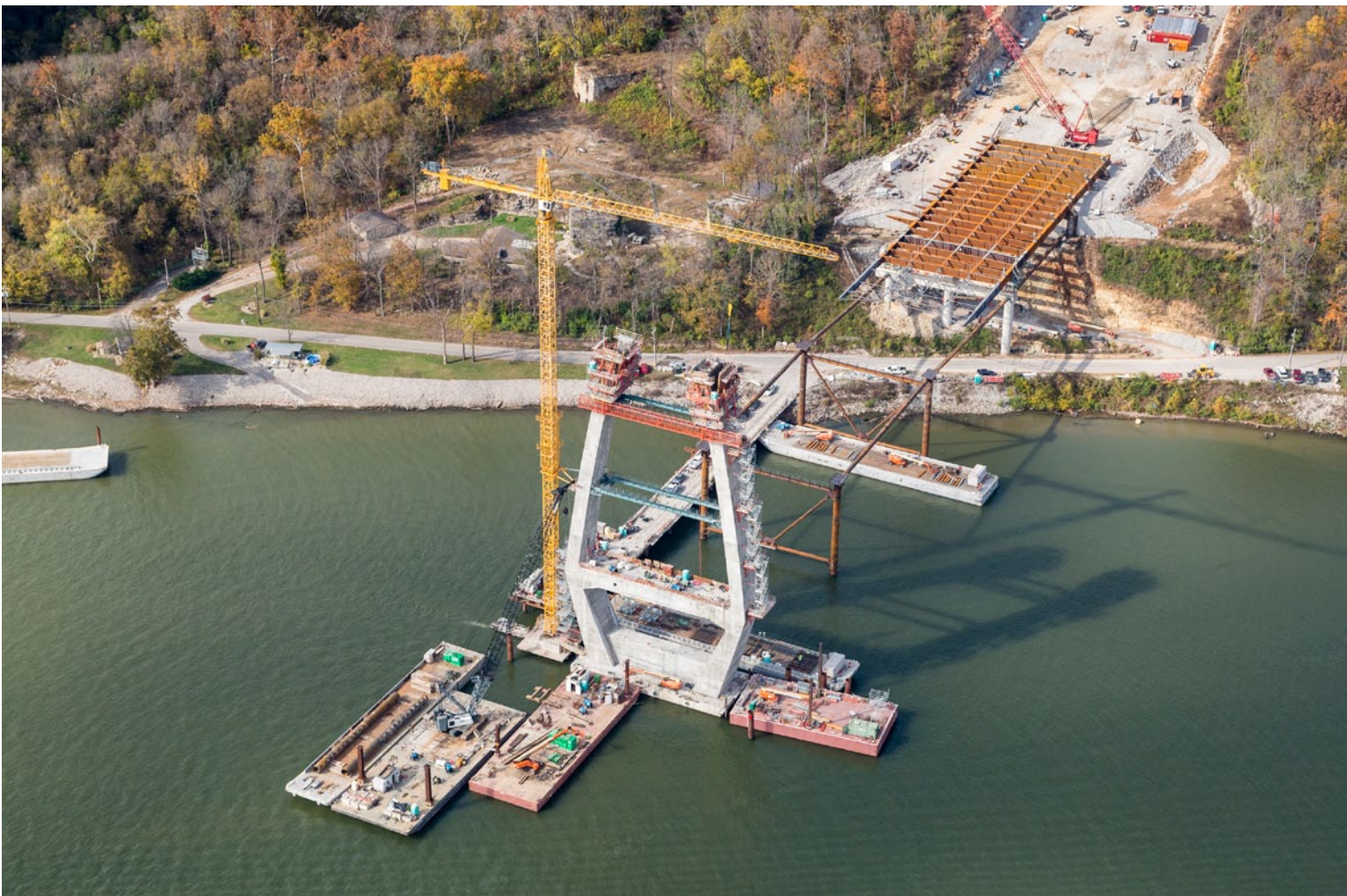
## 91m

*That is the height of the two pylons, entrenched in the river bed, of the cable-stayed bridge. There were differences in the pylon bases due variable geometry. An actual-size model of a pylon base was built on the shore to provide a better understanding of the interfaces among steel reinforcements, formwork, guy-wire anchors, and other components.*

**1<sup>st</sup> use  
 of Envision**



*Our project was the first in the region to try out the Envision tool, which was developed by the prestigious Harvard University to gauge and reduce the impact of new infrastructure on the environment.*



## ATLANTIC BRIDGE

COLÓN, PANAMA



# MORE THAN 200 M OVER THE POST-PANAMAX

The Atlantic Bridge is 3,500 m long with its access viaducts, and will provide 2 x 2 lanes for vehicles to cross the Canal independent of the operation position of the locks 3 km further south. This bridge is the longest cable-stayed bridge in the world with a central concrete span of 530 m, pylons measuring 212.50 m high and a vertical clearance of 75 m.



# 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.*



## LIGHT RAIL TRANSIT SYSTEM LUSAIL, QATAR

# TURNKEY URBAN TRANSPORT FOR A NEW CITY

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 technical and architectural work packages, the depot, the ventilation, communication, and control systems, tracks, power-generation, and, of course, rolling stock. The first line will be delivered in 2019 and the three following lines in 2020.



## 100% FORECASTING

*Urban mobility challenges are usually the reason for launching transport projects in cities. In this case, we had to forecast all potential problems since the city didn't even exist at the start of the project.*



## ZERO CATENARIES

*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 to the system by a third track on the ground.*

### ROUTE A12 (CP01)

LUSAIL, QATAR

**NEW CONTRACT IN 2015**

## THE CONTINUED DEVELOPMENT OF A NEW CITY

As a sign of its continued trust in our abilities, the developer of the new city of Lusail, north of Doha, has mandated us to create a 2.4 km 2x3 lanes carriageway in the Marina District with the coastline on one side and the LRT network on the other. This design-build contract includes underground utility networks, road signs and markings, lighting, landscaping, and four 11kV substations.

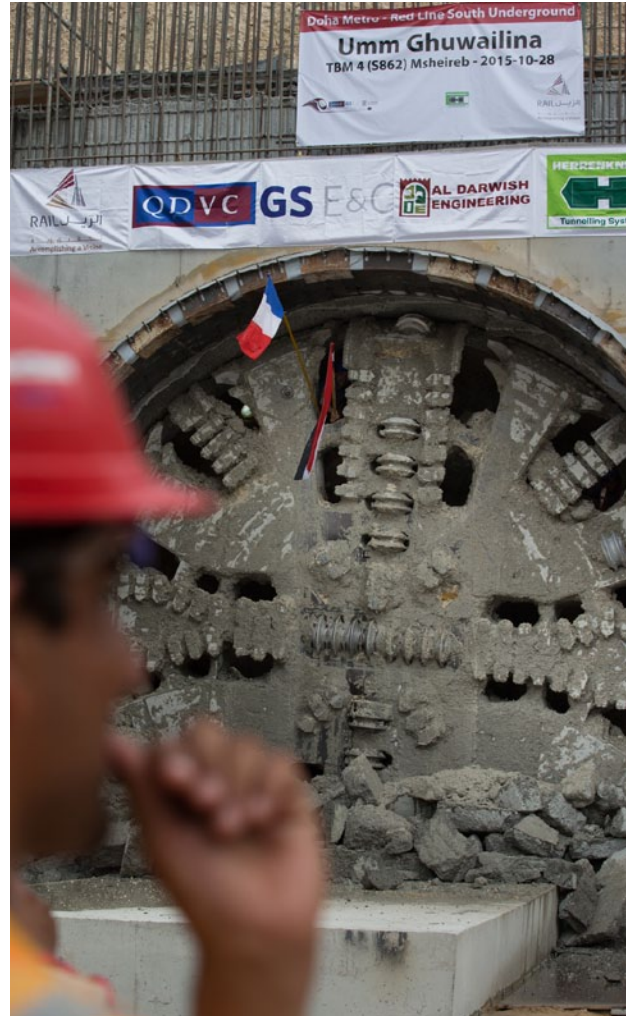


**RED LINE SOUTH**

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 arrive in our station! 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 six underground stations, 51 safety connections between the tubes, and three emergency evacuation shafts.



## 5 TUNNEL-BORING MACHINES

We have designed and ordered 5 earth-pressure TBMs with an outside diameter of more than 7 m to enable us to deliver the metro system on time. This is the first project, since the Chunnel, in which VINCI has had this many TBMs working concurrently

**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 in May 2017.



## 2x5+2x2

This new motorway includes a 2x5 lanes configuration for touring vehicles and a 2x2 lanes configuration for heavyweight vehicles.





**METRO LINE 3, PHASE 4A**  
CAIRO, EGYPT  
**NEW CONTRACT IN 2015**

## EXTENDING THE CAIRO METRO NETWORK TOWARD THE AIRPORT

more  
than  
**35**  
years



*This new contract awarded by the National Tunnelling Authority to our consortium means that our collaboration with Egypt on building the Cairo metro system has surpassed the 35 years mark.*

Following the delivery of Phase 2 in May 2014, our consortium got started on Line 3 as part of a plan to extend it westward, through the Heliopolis district of Cairo, toward the airport. Building on our 35 years plus experience in the Egyptian capital, we overcame schedule-related challenges: 5.15 km of tracks and five underground stations to be carried out in only 34 months. A technical innovation allowed us to win this contract: the ability to modify the previously used TBM, Imhotep, from earth-pressure to slurry shield mode.

**SHATIN TO CENTRAL LINK**  
HONG KONG, CHINA  
**NEW CONTRACT IN 2015**

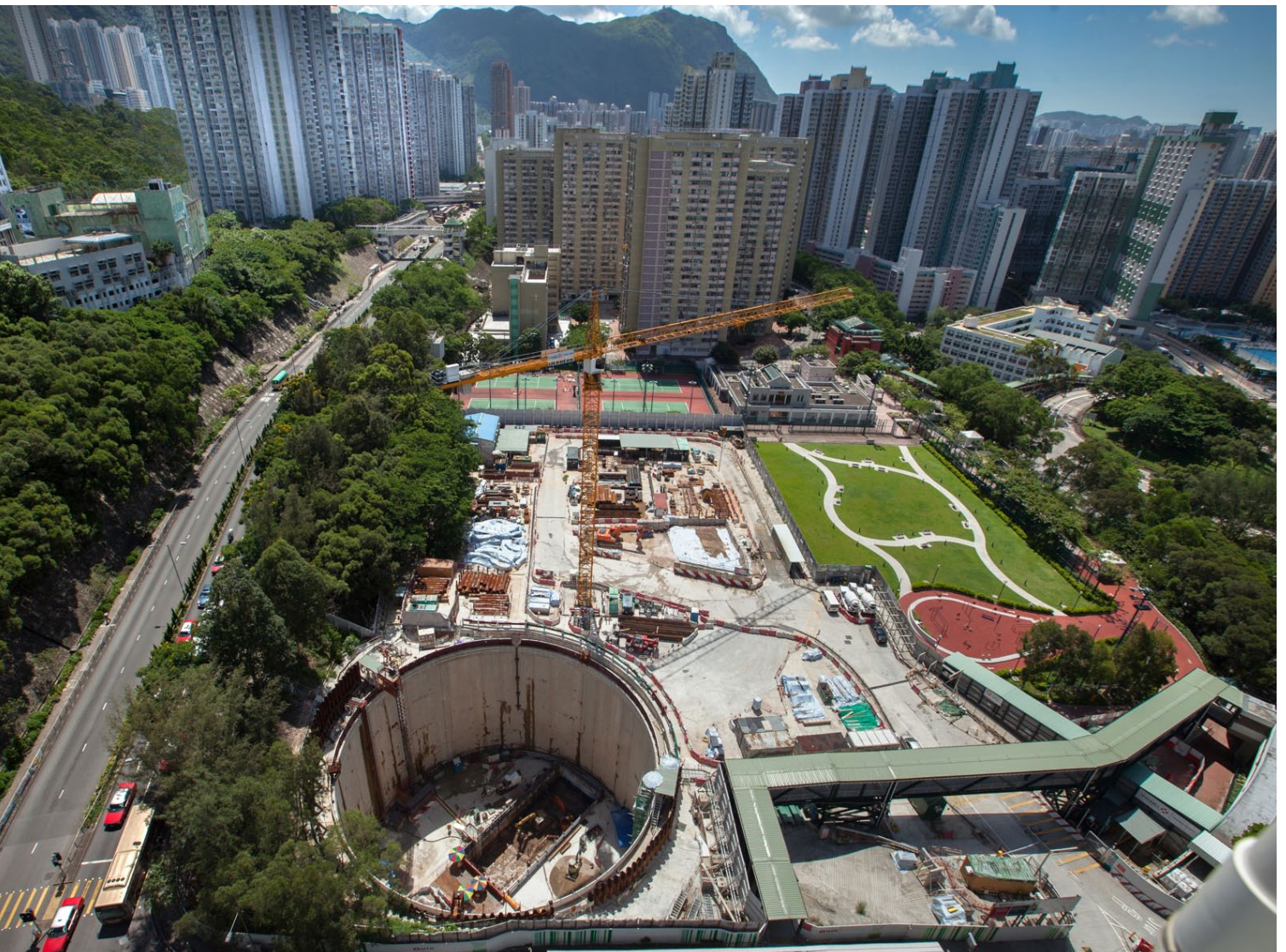
# 700 M DEEPER UNDER HONG KONG

MTR, the client in charge of building the Shatin to Central Link Line has entrusted a new work package to us: 700 m of blast tunnelling in central Hong Kong to be carried out in 45 months. This continued trust in us is due to our very good performance on the previous work package, number 1103. On September 11, 2015, we celebrated the blast tunnelling of a section at the Hin Keng site.



## LESS THAN 20 M

*Our worksite is located less than 20 m from the prestigious Shangri-La Hotel and only 15 m from the entrance to the British consulate. Accordingly, we implemented extensive nuisance-attenuation measures.*







**RAILWAY TUNNELS**  
HALLANDSÅS, SWEDEN  
**DELIVERED IN 2015**

THE FIRST TRAIN  
THROUGH A REPUTEDLY  
UNBREACHABLE  
MOUNTAIN

This was our "veteran" tunnelling project. It took us 10 years to overcome Hallandsås, a mountain located on a geological fault line that has been nothing but trouble for many Swedish governments since the 1970s. Getting through this mountain was a requirement of this project designed to relieve traffic congestion in the western part of Sweden and enhance rail service between Malmö and Göteborg. The two parallel tunnels, each nearly 8.5 km in length, were inaugurated on December 8, 2015. They enable 24 trains per hour to get through as compared with the four trains per hour on the old track that skirted around the mountain. Also, fret train capacity has doubled thanks to the new tunnels.

**13**  BARS  
OF WATER PRESSURE

*That was the capacity that the Åsa TBM's cutting head could withstand, which is three to four times more than usually encountered in tunnelling worksites.*

**400**   
litres of water  
per second

*This is how much water a city with a population of 100,000 consumes. It is also the mountain's potential spill volume at the Mölleback fault line. To get through, it was necessary to freeze the soil to a depth of 135 m for the first tunnel and 230 m for the second.*

## NEW SAFE CONFINEMENT CHERNOBYL, UKRAINE

# SUCCESSFUL CONNECTION TO CONFINE THE DAMAGED REACTOR AT CHERNOBYL

In 2015, the structure designed to confine the damaged reactor got closer to its final configuration as the two semi-arches were successfully connected. In October, work designed to equip the structure began, and the first of the two giant bridge cranes was successfully raised to its final position on November 29.

Next major step when all equipment is in place: the confinement structure will be slid into position over reactor n°4 and its sarcophagus, set for winter 2016.

**27**   
**NATIONALITIES**

*This prototype project required expert input from all over the world.*

**36,000 tonnes** 

*That is the weight of the shelter with its two massive bridge cranes and systems. It will be shifted into position over the sarcophagus in three days.*

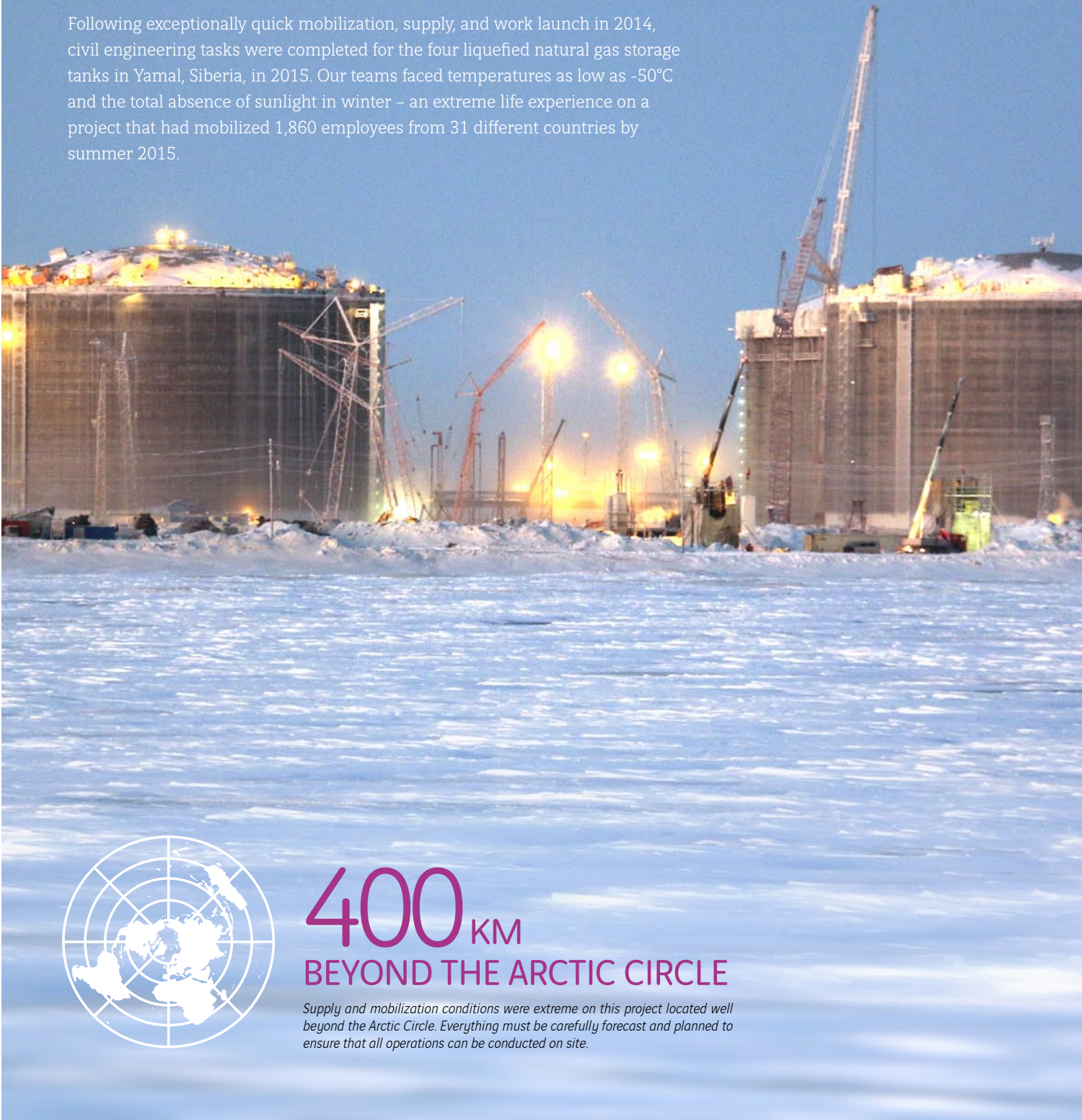


## LIQUEFIED NATURAL GAS TANKS

SABETTA, YAMAL PENINSULA, RUSSIA

# STORING GAS OVER PERMAFROST

Following exceptionally quick mobilization, supply, and work launch in 2014, civil engineering tasks were completed for the four liquefied natural gas storage tanks in Yamal, Siberia, in 2015. 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 by summer 2015.



**400** KM  
BEYOND THE ARCTIC CIRCLE

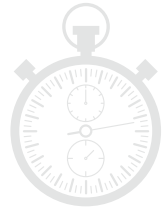
*Supply and mobilization conditions were extreme on this project located well beyond the Arctic Circle. Everything must be carefully forecast and planned to ensure that all operations can be conducted on site.*

## LIQUEFIED NATURAL GAS AND CONDENSATE TANKS WHEATSTONE, AUSTRALIA

# GIVING AUSTRALIAN GAS A JUMPSTART

# 2 hours

*This is the time it took to raise each storage tank roof to a height of 35 m. Each roof covers an area of 5,700 m<sup>2</sup> and weighs 850 tonnes.*



# -161°C

*This is the temperature at which the gas reaches its liquid state - so this is the temperature the storage tanks must maintain, even though it can be as hot as 50°C outside.*

Working in temperatures as high as and even beyond 50°C, our teams are taking part in the development of Western Australia through its hydrocarbon resources. To enable gas exports to distant markets, we are building two liquefied natural gas (LNG) tanks. From the storage tanks, the gas is loaded onto tankers and delivered to clients in distant locations across the world. Each storage tank has a capacity of 150,000 m<sup>3</sup>. The project also calls for the design and construction of two condensate storage tanks, each with a capacity of 120,000 m<sup>3</sup>.

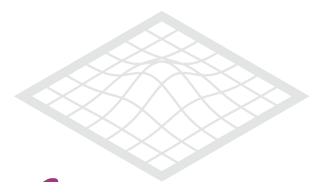




## ITER PROJECT CADARACHE, FRANCE

# 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.



# 1 hectare

*This is the area covered by the Tokamak complex that will house the one-of-a-kind nuclear reactor.*

# 300 kg/m<sup>3</sup>

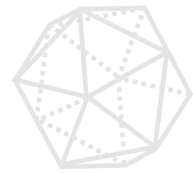
*This is the high density attained in certain areas by steel reinforcements. A high number of inserts are also being developed to accommodate equipment and openings in future. All of it is being built with millimetric precision.*



**EXPANDING AND RENOVATING  
SANTIAGO AIRPORT**  
SANTIAGO, CHILE  
**NEW CONTRACT IN 2015**

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

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 340,000 m<sup>2</sup> of floor space but also 550,000 m<sup>2</sup> of new tarmac and taxiways and 185,000 m<sup>2</sup> of car parks. In addition, the existing terminal will be renovated. Planning is crucial on this project since work must be carried out without impeding current airport operations. On this project, the use of BIM (Building Information Modelling, see p. 38) is being extended to the post-construction operations and maintenance phases.



**9 months**

*This is the short time span we had to develop and deliver the design. 200 people worked on this phase, cooperatively thanks to the use of BIM.*



**48 months**

*This is the duration of the construction phase to deliver seven new buildings to manage international flights and renovate the existing terminal, which will be dedicated to domestic air traffic.*







## EXPANDING AIRPORT TERMINALS

PHNOM PENH AND SIEM REAP, CAMBODIA

**DELIVERED IN 2015**

# A NEW AUTHENTIC SHOWCASE FOR AN INCREASING INFLUX OF TOURISTS

In November 2013, in efforts to raise the capacity of the airports at Phnom Penh, the capital city, and Siem Reap, the gateway to the Angkor Wat temple complex, to 5 million passengers a year, VINCI Airports entrusted us with a design-build mandate to expand the existing terminals. By doubling their surface area, Phnom Penh Airport now covers 31,000 m<sup>2</sup> and Siem Reap Airport, 26,000 m<sup>2</sup>. Both terminals were inaugurated on March 16, 2016 by the prime minister of Cambodia. Project delivery was carried out in multiple phases, without ever interrupting airport traffic, in order to facilitate the renovation of the existing terminals.



**915** hours of  
Skill up  
training

*Skill up is a mobile training centre implemented by VINCI Construction Grands Projects to foster the adoption of practices that ensure occupational safety and high-quality production. On this project in Cambodia, four Skill up training sessions were provided, specifically for scaffolds and formwork.*



**30**  
UNIQUE  
STATUES

*Airport decoration was entrusted to artisans from Angkor who preserve traditional Khmer art, providing travellers with an opportunity to appreciate Cambodian culture as soon as they step off the airplane.*

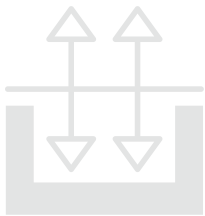
**PLAZA SHELL TOWER**

KOTA KINABALU, MALAYSIA

**DELIVERED IN 2015**

# FIRST HIGH ENVIRONMENTAL PERFORMANCE OFFICE TOWER

The Plaza Shell tower at Kota Kinabalu, which is home to a Mercedes-Benz dealership and showroom and the offices of petroleum company Shell, among others, is the first LEED-certified building on this island in western Malaysia. To ensure on-time delivery of four underground car park levels, a three storey podium, and a 10 storey tower, our teams opted for the top & down method, which allows them to achieve concurrent progress at the underground and aboveground levels.



## 25 months

*Our teams delivered the 65,000 m<sup>2</sup> project in only 25 months thanks primarily to the use of the top & down method.*

**JESSELTON TOWERS**

KOTA KINABALU, MALAYSIA

## THREE COASTAL RESIDENTIAL COMPLEXES

In the wake of our inaugural achievement at Kota Kinabalu – the Plaza Shell tower – our teams were mandated to build the Jesselton Towers, which include a seven storey central podium that will house a shopping centre, two underground car park levels, and three 20 storey towers. All this to be delivered in a mere 19 months.



## 333 apartments

*More than 300 families will enjoy an impressive view at this location on the island of Borneo.*

**BERJAYA CENTRAL PARK**  
KUALA LUMPUR, MALAYSIA  
**DELIVERED IN 2015**

## KUALA LUMPUR FROM A HEIGHT OF 200 M

The first of the two Berjaya Central Park towers, known as Menara Bangkok Bank after its largest tenant, was delivered in June 2015. The second tower will be completed in Q2 2016. To build this 180,000 m<sup>2</sup> complex in a cost-effective manner, we employed a new design for the reinforced concrete structure: flat-slab post-tensioning. A curtain-wall design was used for the facade.

1995  
2016

*We have been working closely with our client, Berjaya, on its property-development projects since 1995, which is when we started work on Berjaya Time Square. The building, in which the Berjaya Group's head office is now located, was delivered in 2003.*



# 100% by waterway

*Respect for the environment was a prerequisite in selecting construction techniques for this new project, especially with regard to logistics. That is why, the removal of excavation materials and supply of precast tunnel segments will be carried entirely on the waterway.*

## TIDEWAY, EAST LOT LONDON, UNITED KINGDOM NEW CONTRACT IN 2015

# 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.

## LEE TUNNEL LONDON, UNITED KINGDOM DELIVERED IN 2015

## FIRST STEPS TOWARD A CLEAN RIVER THAMES

Thanks to the 7 km of tunnels excavated in London's chalky soil, a first step has been taken toward the clean-up of the River Thames, which is the objective pursued by the Tideway project.

On the Lee Tunnel project, our consortium drilled the deepest shafts ever built in the United Kingdom – up to 80 m in depth. They were constructed by sinking diaphragm walls and lined using slip forming that involved the longest concrete pour ever in the United Kingdom.



# 16

MILLION M<sup>3</sup>

*This is the quantity of sewage that will no longer be poured into the Thames every year.*

**UPGRADES TO DRINKING-WATER  
NETWORKS AND SANITATION SYSTEMS**  
DJIBOUTI  
**NEW CONTRACT IN 2015**

## TOWARD IMPROVED WATER QUALITY IN DJIBOUTI

The contract includes installation of 27 km of transfer and distribution piping, upgrades to three water towers, drilling automation for 48 boreholes using a remote-management system, rehabilitation of a drainage scupper, and construction of six compact filtration stations. Financing comes from a donation by the Gulf Cooperation Council.



## 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](http://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 increase dams' storage capacity and enhance their safety, thereby improving the performance of flood-protection dikes.

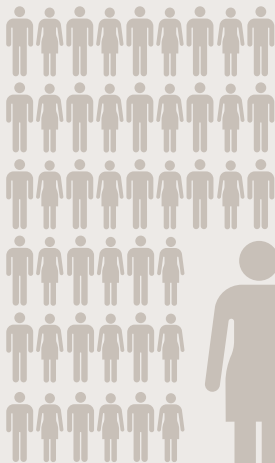
Find out more: [hydroplus.com](http://hydroplus.com)

# OUR PEOPLE, OUR RESOURCE

**7,898**  
EMPLOYEES  
IN THE  
WORLD



INCLUDING  
**1,244**  
MANAGERS

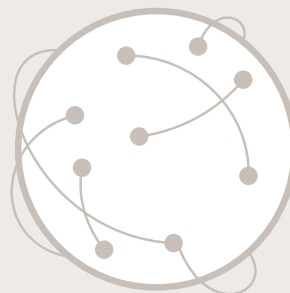


**3,063**  
HIRES UNDER  
PERMANENT  
CONTRACT



**19.8%**  
WOMEN

**33**  
NATIONALITIES



**110**  
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.

## 20,220 HOURS OF TRAINING IN 2015 OR 4.11% OF TOTAL PAYROLL



### 211 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.



### 583 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.



### 329 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.



### 1,555 WORKERS ATTENDED SKILL UP TRAINING

### 8 SKILL UP TRAINERS

### SESSIONS DELIVERED IN EGYPT, ETHIOPIA, CAMBODIA, QATAR, PANAMA, AND HONG KONG

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 is an integral part of the management culture at VINCI Construction Grands Projets. It is also a source of progress, as it fosters work quality and contributes to our know-how, experience, and competence.

Safety is an essential condition for our employees and contributes to client satisfaction.

**50%** **DECREASE**  
**IN THE ACCIDENT**  
**FREQUENCY RATE**  
ON OUR WORKSITES IN 2015

**200**  
**QSE MANAGERS'**  
NETWORK AROUND THE WORLD





## 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.



## BUILDING A CULTURE OF SAFETY



Launched in 2011 by VINCI Construction, the **Managing 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.

**147** employees,  
in **5** countries,  
for **6** sessions



The operational version of the **Managing 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.

**229** employees,  
in **4** countries,  
for **18** 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.

**5,404** employees,  
in **22** countries,  
for **434** 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

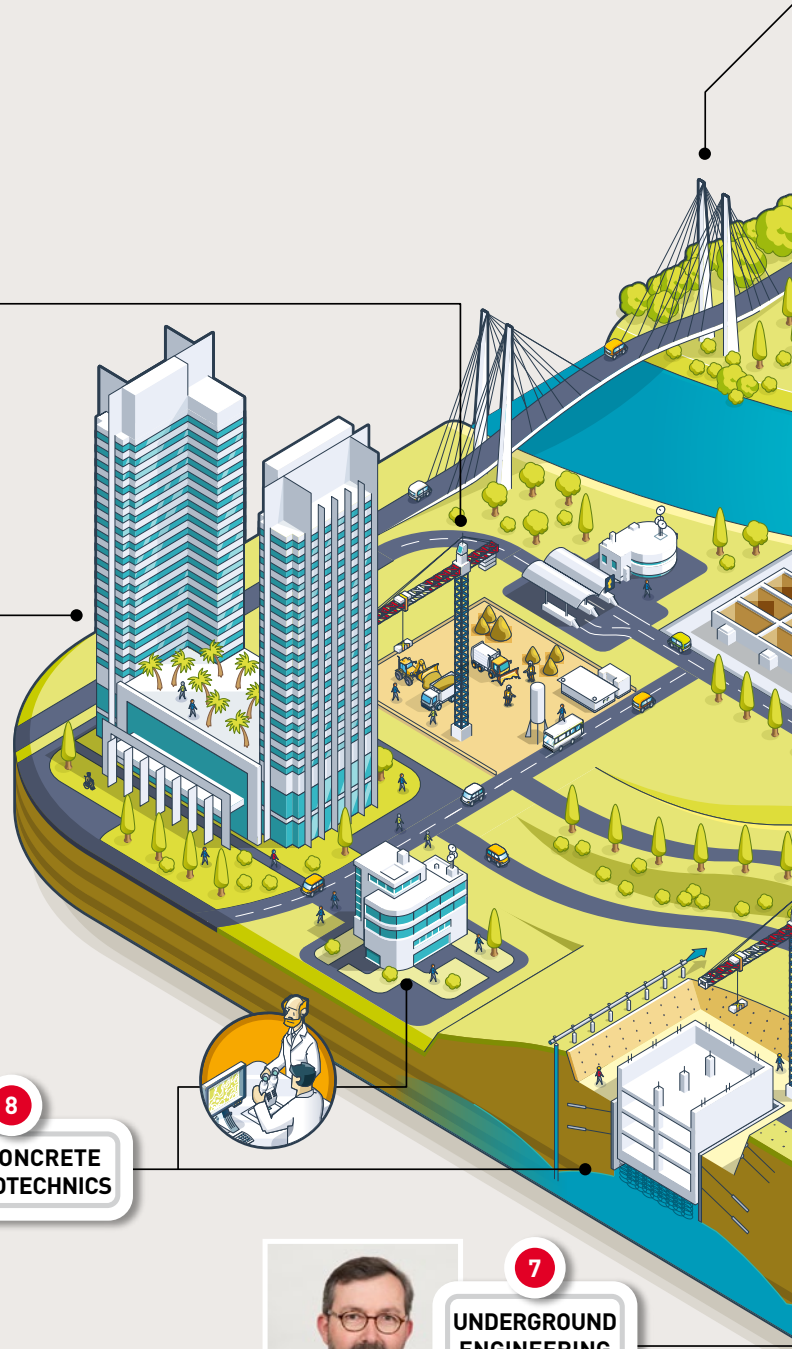
**R&D, CONCRETE  
AND GEOTECHNICS**

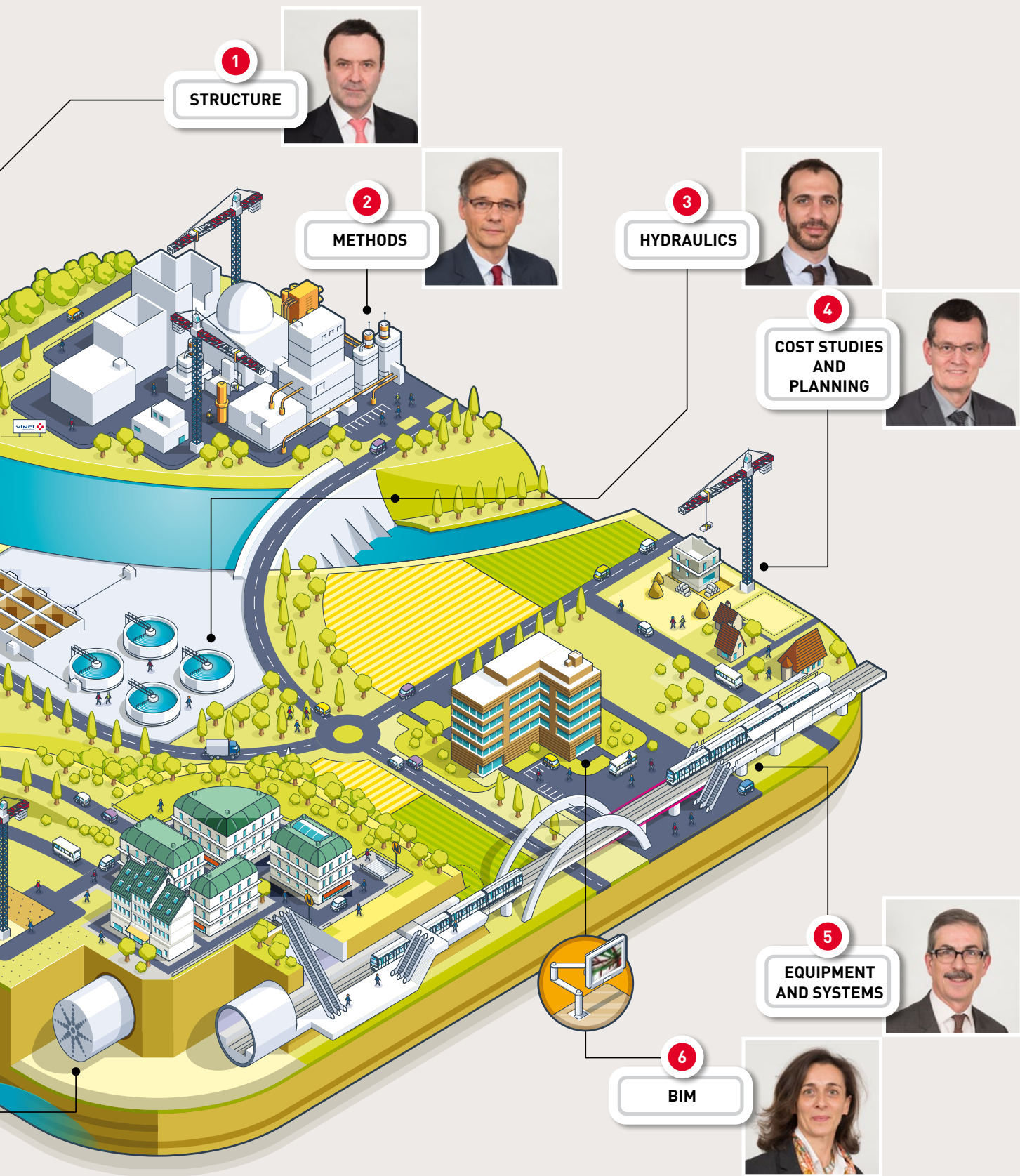


7

**UNDERGROUND  
ENGINEERING  
WORKS**

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





# R&D AND INNOVATION: PERFORMANCE LEVERS

In 2015:

**3** Participation in  
**FRENCH  
RESEARCH  
PROJECTS**

**13** ACADEMIC  
ASSOCIATIONS  
and  
**9** PROFESSIONAL  
ASSOCIATIONS

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

**18** 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.



Through the **VINCI Innovation Awards**, held every two years and open to all employees, the Group nurtures its innovation potential by encouraging the practical initiatives of its employees directly in the field.

It rewards innovation not only for technical aspects, but also in the areas of safety, sustainable development, working conditions, etc.

In 2015:

**5,600** participants

**2,0212** submissions

**131** submissions selected for regional prizes and **14** for the final awards



### **SPECIAL JURY PRIZE FINAL "YAMAL SOCKS"**

On this project calling for the construction of four LNG storage tanks in Siberia, the client required an effective solution to build foundations in permafrost soil. The solution put forward by the VINCI Construction Grands Projets-Entrepose Projets consortium was to encase the piles in a "sock" that enhances their flexibility in the 2.5 m layer of fill above the permafrost soil.



### **GRAND PRIX INTERNATIONAL CHERNOBYL NEW SAFE CONFINEMENT**

The New Safe Confinement (NSC), which was built and equipped 300 m from its final position, consists of two semi-arches whose components were assembled on the ground, starting with the centre of the structure, and lifted into position. The structure features a double cladding (interior and exterior) creating a sealed annular space above the confinement space.

### **DISSEMINATION PRIZE UNITED KINGDOM AND IRELAND**

#### **STAGGERED-END REINFORCING BARS**

As part of the Crossrail project, specifically with respect to upgrades to the Whitechapel Station, work teams used an innovation that won an award in 2013: staggered-end reinforcing bars, allowing for a prefabrication solution and eliminating the need for dangerous manual operations in the 30 m shaft.

### **PROCESSES AND TECHNIQUES PRIZE CENTRALIZED ACTIVITIES**

#### **EARLY-AGE CONCRETE SIMULATION**

The ability to control early-age concrete cracking has an impact on the durability of structures. Clients require increasingly stringent specifications in this regard. This digital tool, which simulates early-age concrete thermal and mechanical behaviour, can be used to study the full range of concreting operations.

### **SAFETY PRIZE CENTRALIZED ACTIVITIES**

#### **UTEP™**

Our engineers specializing in underground works, equipment, and safety have developed a fire-alarm and wireless communication system for underground worksites, which they have called Universal Tunnel Emergency Point (UTEP™). Thanks to UTEP™, personnel working in tunnels can be contacted at all times.

### **SUSTAINABLE DEVELOPMENT PRIZE NORTH AMERICA**

#### **SUSTAINABLE DEVELOPMENT IN THE DESIGN OF THE OHIO RIVER BRIDGES PROJECT**

In 2013, a sustainability plan for this project was issued. Of the 39 ideas put forward in workshops for inclusion in the plan, nine were selected, including the use of solar energy to light parking areas and buildings and the use of recycled roadway materials to create mixed-use roadways.

### **MANAGEMENT PRIZE NORTH AMERICAN**

#### **THE SUSTAINABLE DEVELOPMENT DASHBOARD**

Following the release of the sustainability plan for this project, stakeholders were informed of its continued development through a dashboard structured around four key themes: Individuals and Communities, Biodiversity and Natural Resources, Climate Change and Energy, and Governance and Partnership.

#### **In the United Kingdom, the uphill excavator has won several prizes.**

The uphill excavator has won "Technical Innovation" and "Product Equipment Innovation" prizes from NCE, the leading building and public works magazine in the United Kingdom, as well as the "Product Design Innovation" award at the British Construction Industry Awards. This machine was designed with our British partners on the Crossrail (C510) project to excavate tunnels to accommodate escalators at locations between the Whitechapel and Liverpool Street Stations. The machine was designed to dig tunnels on an incline from the existing tunnel below ground toward the surface.

# 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.

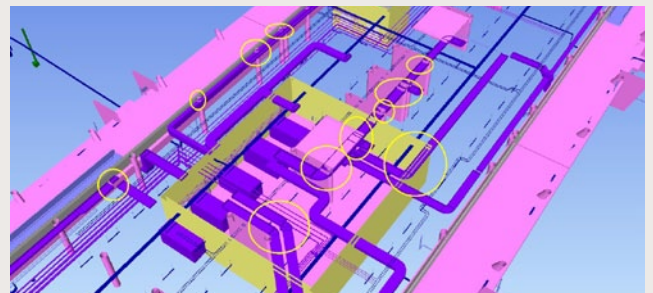
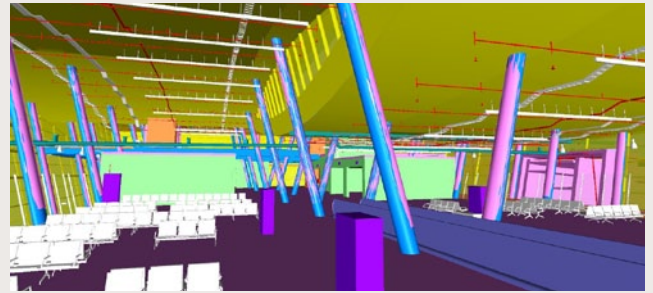
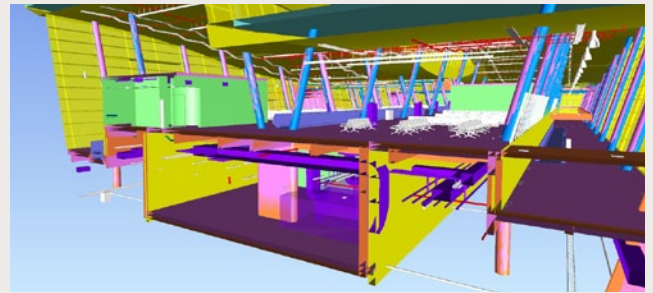
## BIM: BUILDING BEFORE BUILDING

A unique source of information intended for all the stakeholders of a project, **Building Information Modeling (BIM)** can be used for all steps in a structure's life cycle: from design to construction, throughout its operations, up to its rehabilitation.

Among the features offered by BIM, the "3D modelling" module can be used to visualize the structure and to perform various simulations (construction phasing, choice of materials, energy consumption, etc.).

Used within a collaborative approach, BIM facilitates and accelerates a project's development as well as its validation by the parties concerned.

Virtual simulation can also be used to study multiple variations in a more interactive, quicker and less expensive manner, in order to come up with the best solutions, particularly in the area of safety.



## BIM IN OUR PROJECTS

**Buildings:** Dushanbe (Tadjikistan), Phnom Penh and Siem Reap (Cambodia), Santiago (Chile) airports - Louis Vuitton Foundation (France) - Odeon Tower (Monaco)

**Transport infrastructures:** SEA high-speed rail (France) - Crossrail, London (United Kingdom) - Atlantic Bridge (Panama) - Doha Metro (Qatar) - Lusail LRT (Qatar) - Tideway, London (United Kingdom).

# 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.



**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.**



**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.**



**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.**



**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.**



**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.**



**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.**



**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.**



**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.**



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

Follow us on



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GRANDS PROJETS