**ANNUAL REPORT** 2010

MINE



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s our markets began to emerge from the recession in 2010, our companies proved resilient, overall, in Europe. Particularly noteworthy was the significant upturn in business volume in France, starting in the second half. Meanwhile, our speciality business activities – geotechnical engineering, specialised civil engineering, dredging, oil and gas infrastructure – with global coverage enabled us to take advantage of strong growth in the emerging markets. The overall return to growth is reflected in the VINCI Construction order backlog, which increased 7% over the 12-month period and accounted for 13 months of business volume at the end of the year.

These indicators demonstrate the strength of our model, which is based on local subsidiaries strongly rooted in their communities; broad geographical coverage; a wide range of business activities; sound management principles; and a shared culture. This model lends us stability in uncertain times and enables us to expand during periods of economic growth.

We plan to give new impetus to our model by strengthening synergies within VINCI Construction and, more broadly, with the other VINCI business lines. Our many capabilities are being brought into resonance to support the needs of our customers, who are asking us to take on increasingly integrated and complex projects comprising an ever greater design and engineering component, as illustrated by the new Tours-Bordeaux high-speed rail line in France. The challenge we face is to successfully handle such exceptional projects while retaining the loyalty of our customers for the tens of thousands of local projects we carry out around the world. We can rise to it by remaining true to our values as a group of entrepreneurs – the values that underpin the creativity of our people and the performance of our companies.

**JEAN ROSSI,** Chairman of VINCI Construction

## MANAGEMENT TEAM

**BERNARD LENFANT,** Director, Overseas France subsidiaries

DOMINIQUE BOUVIER, Chairman and Chief Executive Officer of ENTREPOSE Contracting





"The challenge we face is to successfully handle such exceptional projects while retaining the loyalty of our customers for the tens of thousands of local projects we carry out around the world"

JEAN ROSSI, Chairman of VINCI Construction

#### JOHN STANION, Chairman of VINCI PLC

**GÉRARD BIENFAIT,** Chairman of VINCI Construction France

FRANÇOIS RAVERY, Chief Administrative and Financial Officer of VINCI Construction ALAIN BONNOT, Chairman of VINCI Construction Grands Projets

**RENAUD BENTÉGEAT,** Managing Director of Compagnie d'Entreprises CFE ANDRÉ HUBARD, Director, Central Europe subsidiaries

JÉRÔME STUBLER, Chief Executive Officer of Freyssinet and Terre Armee, Chairman of Nuvia **RAOUL DESSAIGNE,** Executive Vice-President of VINCI Construction

PHILIPPE CHAVENT, Chairman of Sogea-Satom

**JEAN ROSSI,** Chairman of VINCI Construction JOSÉ-MICHAËL CHENU, Chief Operating Officer of VINCI Construction France

BRUNO DUPETY, Chief Operating Officer of VINCI Construction, Director and Chief Executive Officer of Soletanche Freyssinet XAVIER NEUSCHWANDER, Chairman of VINCI Construction Terrassement

HERVÉ MELLER, Human Resources Director of VINCI Construction



Main VINCI Construction locations

# PROFILE

VINCI Construction is France's leading construction company and a major global player, with an unrivalled array of capabilities in building, civil engineering, hydraulic engineering and contracting-related specialities.



# Operating profit from ordinary activity In € millions 532 584 2009 2010 restated 2010 Revenue by geographical area France 53% Africa 12% United Kingdom 11%



Restated: data restated in accordance with IAS 31, change of method: election for equity accounting of jointly controlled companies.



# VINCI Construction's three business areas form an excellent strategic fit

#### A network of local subsidiaries

- in mainland France, where VINCI Construction France stands at the head of a network of 440 profit centres with strong local roots;

- outside France, with VINCI Construction UK in the United Kingdom; CFE (in which VINCI holds a 46.8% interest) primarily in the Benelux countries; Warbud, Prumstav-FCC and SMP in Central Europe; Sogea-Satom in Africa; and about 30 local subsidiaries in Overseas France.

**Specialised subsidiaries serving global markets:** Soletanche Freyssinet (deep foundations and geotechnical engineering, structures, nuclear engineering); ENTREPOSE Contracting (oil and gas infrastructure); and DEME, in which CFE holds a 50% interest (dredging, marine and inland waterway works, site remediation).

A division dedicated to management and execution of complex projects, with VINCI Construction Grands Projets, VINCI Construction Terrassement and Dodin Campenon Bernard, which work on major civil engineering and construction projects in France and around the world.

VINCI Construction exemplifies the Group's entrepreneurial spirit and management model. Its decentralised structure creates a framework for networking and empowerment of local managers, a focus on people and a responsive organisation. This model has helped to set new standards of performance in the building and civil engineering industry.



# ECONOMIC PERFORMANCE

**Rebound of business activity and first signs of a return to growth.** The recovery observed in France in the second half and the general resilience of business outside France suggest that the downturn bottomed out in 2010 and that VINCI Construction is now back on track for growth.



Following a 7.5% decline in 2009 and a further drop in business activity in the first quarter of 2010 (partly due to inclement weather), VINCI Construction experienced a stronger-than-expected upturn in the second half. Over the year, revenue stabilised (up 0.8% in actual terms, down 2.2% like-for-like). At the same time, unremitting attention to selective order taking, productivity and cost control and adjustment of organisational structures where necessary boosted operating margin, which rose from 4.1 to 4.5% of revenue.

# A NETWORK OF LOCAL SUBSIDIARIES

#### France

**VINCI Construction France** recorded a slight decline (1.7%) in revenue, stronger in the first half than in the second, to  $\in$ 5.4 billion. In building activities, which accounted for 70% of revenue, VINCI Construction France capitalised on its broad market coverage, offsetting sectors against each other to balance out different trends. Activity was buoyant in the two housing segments – public housing construction and renovation, thanks to the development of competitive bids and efficient construction methods meeting the expectations of social housing authorities; and private-sector housing, where growth picked up in response to tax incentives and record low interest rates. Public sector building – hospitals, universities, cultural and leisure facilities – also held up well. In this market, VINCI Construction France makes the most of its ability to take on major projects as general contractor, often in synergy with the fitting and finishing companies that

make up VINCI's Energy business line. In other private-sector building markets, there were first signs of a recovery in service-sector properties hard hit by the downturn since 2009. In civil engineering, in addition to the many projects carried out by its regional companies and specialised subsidiaries, VINCI Construction France worked in synergy with Group companies specialising in major projects. In hydraulic engineering, demand for water treatment facilities, which remained buoyant, partly offset the decline in standard pipeline activity.

**In Overseas France,** revenue rose 8% to €0.5 billion, driven by the West Indies and Indian Ocean subsidiaries especially. Business activity was primarily sustained by public sector demand in the building (health, education, social housing) sector, which accounted for nearly 40% of overall revenue, and the civil engineering sector.

#### **United Kingdom**

At VINCI Construction UK, revenue declined 8.4% to €1.2 billion. Regional building activity was hard hit by the recession. Public-sector building exhibited more resilience, particularly in the hospital and education sectors. In civil engineering, business was brisk in urban transport infrastructure, nuclear engineering and water treatment plants. In all civil engineering markets, business volume will be boosted by the overall infrastructure development plan, introduced by the new British government at the end of 2010.

#### Benelux

At CFE, in which VINCI Construction holds a 46.8% interest, revenue (excl. DEME) shrank 2.5% to €0.9 billion. On the whole, business was sluggish in construction. Private-sector building activity contracted substantially, especially in Luxembourg, where service-sector building was hit by a sharp downturn, and in the countries of Central Europe, where CFE subsidiaries work for private-sector investors. Business was better in civil engineering. Following a surge in 2009, civil engineering held steady at a high level, thanks in part to infrastructure projects carried out by VINCI and CFE under concession contracts. Property development also made a strong showing.

#### **Central Europe**

In the Central Europe subsidiaries, revenue came in at €0.5 billion (down 9.7%). The situation varied from one country and one area of activity to another. **In Poland,** following several years of very strong growth, volume declined 14%. By adhering to the Group's selective order taking principles, Warbud succeeded in maintaining its margins against a backdrop of very sharp competition. Contrasting with the sluggish private-sector building market – where activity was, however, slightly up from the previous year – the civil engineering market remained buoyant.

**In the Czech Republic,** civil engineering held steady at a good level in a market buoyed by public sector orders, enabling SMP to make the most of its traditional engineering structure capabilities. Conversely, building activity again contracted. In that sector, the merger of two subsidiaries, initiated at the beginning of the crisis and finalised in 2010, made it possible to adapt structures to current market needs.

**In Slovakia,** the sharp economic downturn prompted an in-depth reorganisation of the local subsidiary. Business activity was, however, fuelled by orders for engineering structures along the new R1 motorway, a concession held by a VINCI-led consortium.

#### Africa

Sogea-Satom upheld its strong growth, increasing its revenue 17% to €0.8 billion. In markets supported by the major international donors, Sogea-Satom built on its historic roots and solid expertise to hold its own in an increasingly competitive business environment. Beyond its traditional locations, the company is expanding its operations in countries with oil resources such as the Republic of Congo. Business was brisk in Sogea-Satom's core activities, earthworks and roadworks, which account for nearly 70% of its revenue; civil engineering, particularly in ports and industrial facilities; and hydraulic engineering. ■

#### SPECIALITY BUSINESS ACTIVITIES WITH HIGH TECHNICAL CONTENT

#### Specialised civil engineering

Soletanche Freyssinet increased its revenue 5.1% to €2 billion. Booming markets in Asia (primarily Hong Kong and Singapore) and the Americas (Canada, United States, Mexico and South America), which account for 20% and 25% of total business volume respectively, offset the downturn in the markets hardest hit by the recession (United Kingdom, Spain, Central Europe). In deep foundations and geotechnical engineering, Soletanche Bachy returned to growth, albeit slight (up 1.3%), following a sharp downturn in 2009. Civil engineering infrastructure activity, carried out on all continents, held up well on the whole and there were first signs of a recovery in deep building foundations. Menard (ground improvement) again saw a strong increase in revenue (up 34%) driven by major projects in the Persian Gulf region and the mature economies (Germany, Poland, Australia) and an expansion of its operations in Canada. The year was also a good one for Terre Armee (arches and retaining walls), especially in Canada, the United States and India. In structures, Freyssinet proved resilient, even in France and in Central and Eastern Europe, with revenue increasing 3% and order backlog 12% in one year.

**In nuclear engineering,** Nuvia experienced strong growth (12%) and consolidated its positions in its two main markets, France and the United Kingdom.

#### Dredging

DEME, in which CFE holds a 50% interest, recorded strong growth during the year, with revenue rising 28% to €1.8 billion. With major operations resuming in 2010, DEME capitalised on its offshore works capabilities in the expanding wind farm and oil and gas infrastructure markets. To boost the capacity and further enhance the technological edge of its fleet, DEME commissioned a new 5,000 cu. metre trailing suction hopper dredger and initiated construction of two additional ships. One, the D.P. Flintstone, has a loading capacity of 19,000 tonnes and is designed to place rocks at great depths (up to 2,000 metres); it will be used primarily on pipeline projects. The second, the CSD AI Jarraf, a cutter dredger acquired in partnership with the Qatar-based UDC company, is particularly well suited to the hard rock of the Gulf and will be used in the development of major infrastructure projects in the region. Lastly, DEME branched out into two new business activities, working with Flemish and Dutch partners to found a service company dedicated to marine terminals (CTOW) and investing, together with the Flemish Innovation Agency and five other companies, in the experimental FlanSea project aimed at generating electricity from tidal energy.



#### Oil and gas infrastructure

ENTREPOSE Contracting recorded a further increase in revenue (up 35% to €0.8 billion). This growth was driven primarily by the expansion of the land-based pipeline construction activity, a high-potential market in which specialised subsidiary SPIECAPAG is a benchmark. Activity was also buoyant in coastal operations and in the construction of cryogenic tanks. Lastly, ENTREPOSE Contracting continued to broaden its range of expertise by acquiring the HDI and Cofor companies, which specialise, respectively, in horizontal and deep drilling. ■

#### MANAGEMENT AND EXECUTION OF COMPLEX PROJECTS

In 2010, VINCI Construction set up a division bringing together VINCI Construction Grands Projets, VINCI Construction Terrassement and Dodin Campenon Bernard. The combination of their project management, earthworks, engineering and major structures capabilities will enable the Group to accommodate the shift in its markets towards more global, complex projects.

VINCI Construction Grands Projets recorded a contraction in its activity (down 10% to €0.6 billion) in a transition period in which a large number of projects in the studies and launch phases generated limited revenue. There was buoyant activity in underground works, the core business of VINCI Construction Grands Projets, which benefits from business generated by VINCI's concession projects. Work in Qatar undertaken with Qatari Diar as part of the QDVC joint venture also helped bolster volume.

**VINCI Construction Terrassement** generated revenue of  $\in 0.3$  billion. Business was brisk in France, boosted by major works carried out for VINCI Autoroutes in addition to the company's many local projects. **Dodin Campenon Bernard** generated revenue of  $\in 0.2$  billion, primarily in tunnel and engineering structure projects carried out in synergy with VINCI Construction France.

#### OUTLOOK

Signs of an upturn in activity, starting in the second half of 2010, suggest that the economic crisis has bottomed out for VINCI Construction. The order backlog at the end of 2010 confirms this trend and points to a return to growth in 2011.

Growth is expected to pick up in France in particular, VINCI Construction's main European market. The year-end backlog had yet to include major projects such as the Tours-Bordeaux high-speed rail line, while an aggressive sales drive and projects under study point to a revival of activity. Outside the European Union, most of the growth will come in the emerging countries, in Africa, the Middle East and Asia. VINCI Construction is expanding in those countries through a combination of local presence and major projects, as and when opportunities arise. The current portfolio of large-scale urban transport infrastructure, oil and gas infrastructure and offshore engineering projects around the world are evidence that this strategy is paying off. In the longer term, potential demand in both mature and emerging economies will combine to sustain the momentum at VINCI Construction. Mature economies need to modernise their infrastructure extensively and improve environmental efficiency.

Emerging countries, meanwhile, are poised to launch a wave of new construction projects. Vigorous demand is expected in all of VINCI Construction's main markets, from transport and energy infrastructure to urban development, water supply networks and water and wastewater treatment systems, public edifices such as hospitals, schools and leisure facilities, and new-generation commercial property of all kinds. Another factor in VINCI Construction's favour is the growing demand for increasingly comprehensive and complex project packages, with a strong systems component. VINCI Construction will have a decisive competitive edge in such projects, thanks to its proven expertise in managing large projects and its capacity to harness all of the requisite technical expertise in-house.



# SOCIAL RESPONSIBILITY

As a result of its business activities and its size, VINCI Construction is closely involved in sustainable development. Its companies work as builders with the goal of making the most of their teams, protecting the environment and contributing to regional and local economic and social solidarity.



#### **PRINCIPLES**

#### An overall performance objective

VINCI Construction believes that success must be judged in the long term. Performance is not confined to economic and financial results; it is also measured in terms of the extent to which projects fulfil user and societal expectations, generate environmental value and contribute to social development.

This overall performance objective dovetails with a management model that drives the Group's development and ensures its cohesion. The model is built on decentralised organisations, autonomous operating units and empowered managers, coupled with the networking of teams and skill sets. The Group's shared values strengthen its cohesion. VINCI Construction's values of trust, respect, solidarity, the primacy of people over systems, simultaneous recognition of individual initiative and teamwork – the basic principle governing worksite operations – are rooted in its history and entrepreneurial culture.

# Code of Ethics and continuous improvement programme

In 2010, the VINCI Group set out in its Code of Ethics and Conduct all the rules that apply to all its companies and employees. By the end of the year, virtually all Group managers had received the code and taken it on board. Assessment of their personal performance will from now on take into account compliance with these rules by the teams that they are responsible for overseeing and/or managing.

In 2010 VINCI also launched the development of a self-diagnosis tool to enable its companies to assess their own performance with respect to about 15 sustainable development indicators. The goal is to make available to the Group's 3,500 operations managers a method that can help them and their respective management committees rank their social, societal and environmental issues and then draw up priorities and take appropriate action. The tool underwent a series of tests in 2010 and will be rolled out in all the Group's operating entities in 2011.

#### **HUMAN RESOURCES**

#### A responsible employer

Whenever possible, VINCI Construction seeks to create permanent jobs. On 31 December 2010, its companies employed 64,338 people worldwide, of whom more than 50,000 had long-term contracts.

To recruit new employees, VINCI Construction companies take a wide variety of initiatives targeting young people and training institutions. A network of "campus managers" organises and coordinates relationships with about 100 schools, ranging from CFA apprentice training centres to the engineering schools with which the Group establishes partnerships *(see insert below).* Its companies welcome more than 10,000 students as interns every year as well as some 100 young people enrolled in the VIE (Volunteers for International Experience) programme. 1,033 work-study contracts were also signed in 2010.

VINCI Construction also acts as a responsible employer in fostering its employees' career development. The approach is backed by the forwardlooking jobs and skills management system (GPEC). To boost the employability of its people, the Group also offers a framework for dialogue between operations managers and employee representatives in which the issues and goals of the company can be debated so as to better anticipate changes in jobs.



The mechanical shop team at the Bujumbura agency in Burundi. Sogea-Satom's main objective is to set up strong local teams to meet worksite challenges.

#### Common technical training and culture

Continuing to pursue its ambitious training policy, VINCI Construction aims to offer a personal training plan to each of its employees. The training is provided primarily by in-house structures. For example, in France the network of Cesame centres (VINCI Construction France) welcomed 17,270 trainees and provided 330,649 hours of training in 2010. Synergies among VINCI Construction divisions enable them to share training resources. A particular case in point is the Orchestra programme, initially implemented by the Cesame centres to train all VINCI Construction France operating personnel in worksite preparation and organisation methods and thus accelerate the dissemination of a common technical culture. This training has since been adapted to the various types of worksite (building, civil engineering, pipelines, earthworks, etc.) and extended to other VINCI Construction entities in France and abroad. Similarly, the Team Grands Projets training programme devised by VINCI Construction Grands Projets to train its employees in complex project management has since been extended to other Group employees. Discussions held among the teams of the various entities also foster skills sharing and dissemination.

At Soletanche Freyssinet, where 13,000 employees are scattered over some 100 countries, meetings among engineers and technicians from the various design offices were introduced as part of the Resonance plan to foster skills synergies and the emergence of common products and services, e.g. combining prestressing and prefabrication for the construction of port facilities. In the United Kingdom, VINCI Construction UK's training and career management policy received "Investors in People" certification (which recognises performance optimisation through skills development and motivation); the certification, awarded in 2010 to the Building and Facilities Management divisions, covers 75% of the company's workforce.

#### A LARGE NUMBER OF SCHOOL PARTNERHIPS

A wide range of partnerships has been forged to foster ties between building and civil engineering vocational training centres and the Group's companies. For example, VINCI Construction is sponsoring the 2012 graduating class of the Ecole Spéciale des Travaux Publics (ESTP) engineering school, which comprises 570 students. VINCI Construction Grands Projets has partnered with the Ecole des Ponts ParisTech and Ecole Centrale de Paris engineering schools to help set up a specialised Master's programme focused on civil engineering for large energy structures. VINCI Construction France has been sponsoring and funding a graduating class of the ENISE national engineering school in St. Etienne each year for the last five years. Partnerships have been forged between Freyssinet and the Egletons civil engineering training site (Pierre Caraminot high school, EATP and university centre), with a focus on students enrolled in the IMRO (engineering structure inspection, maintenance and repair) programme; and between Soletanche Bachy - whose core business activity is geotechnical engineering - and the Ecole Supérieure de Géologie geology school in Nancy. VINCI Construction Terrassement joined forces with a number of other industry players and the FNTP national civil engineering federation to initiate a training programme for 2,000 machinery operators. In Africa, Sogea-Satom is partnering with the 2IE school in Burkina Faso and the IST-AC school in Cameroon and hosting a large number of interns from French schools.



**Orchestra training.** All VINCI Construction France operations managers receive this training in worksite preparation and organisation, which underpins the company's technical culture.



**Career development** is facilitated by a management culture that focuses on empowerment and initiative. A young engineer may become a works director or the head of an agency within a few years.



**Health and Safety** programmes set up on worksites, such as here in Qatar, cover all personnel - local and expatriate employees as well as partners and subcontractors.

#### Fostering employee career development

VINCI Construction's management culture geared to employee empowerment and initiative encourages employee career development. A young engineer may, for example, rise to become a contract or profit centre manager within a few years. A variety of methods are used within Group companies to foster employee induction and career development, including the Coaching Team programme at VINCI Construction France; the training course combining a six-month senior year internship and a VIE international volunteer programme at VINCI Construction Grands Projets; the recruitment and training programme for African management staff at Sogea-Satom; and the individualised vocational development programme at ENTREPOSE Contracting.

#### Internationalisation and skills mobility

VINCI Construction's human resources policy aims to internationalise recruitment to support the internationalisation of its business activity. VINCI Construction's European young managers programme trains young graduates from other countries within French teams. These young people, once trained, then take on responsibilities in the international subsidiaries. Here again, VINCI Construction also aims to develop mobility and cross-business, cross-functional skills in order to accommodate changing markets and the trend toward increasingly global and complex projects that require the complementary capabilities offered by the VINCI Construction companies and the other VINCI business lines.

## SAFETY

#### Zero Accidents objective

The Group's primary duty is to ensure the workplace health and safety of its employees. VINCI Construction's goal is zero accidents, on its worksites, at its offices and during travel. This goal applies to VINCI employees, temporary workers and employees of subcontractors working on group sites alike. The objective is pursued through a myriad of actions and initiatives such as worksite orientation procedures, across-the-board application of 15-minute Safety Sessions, training in specific risks and accident analysis. In France, VINCI Construction France continued to pursue the Prevention Attitude training programme, which is aimed at ensuring that all company employees share the same commitment to accident prevention by encouraging them to take a hard look at their own behaviour; since it was initiated in 2008, nearly 15,000 employees have taken this training. On the major international worksites, VINCI Construction Grands Projets carries out the (A)live on Site programme, which targets all worksite personnel - local and expatriate, partner and subcontractor employees. In this programme, worksite personnel are filmed in action and then asked to discuss risky behaviour in their language. By the end of 2010, nearly 2,000 employees on 24 projects had taken part in the programme in 10 different languages. In Africa, Sogea-Satom trained nearly 800 employees in safe driving (light vehicles, lorries, worksite machinery) in 2010. Combined with its programme aimed at structuring its Health-Safety-Environment network, these efforts generated a further improvement in the company's safety results. In the United Kingdom, safety has been fully integrated into VINCI Construction UK production and management processes, and this has produced outstanding results. For example, the VINCI Construction UK division working in the airports sector exceeded the threshold of three million hours worked without accident.

#### DIVERSITY

#### Managing equal opportunities

All VINCI entities apply the principle of avoiding discrimination of any sort in hiring and in labour relations. The Group pursues a proactive policy of promoting equality and diversity and regularly has its compliance with this policy audited. Follow-up monitoring of the 29 European subsidiaries audited in 2008 shows that 81% of them have made progress in the field of gender mix, 77% in discrimination prevention, 69% in employing seniors and more than half in employing people with disabilities.

Among other examples, progress made by VINCI Construction companies resulted in a 25% increase in the number of women employed by EMCC; the inclusion of a diversity clause in work contracts at Hallé; the introduction of a discrimination prevention unit at GTM Bâtiment; and disability awareness raising actions at Petit.



**Apprenticeship.** VINCI Construction companies are taking an increasing number of initiatives to benefit young people and training institutions. More than 1,000 work-study contracts were signed in 2010.

#### INDUCTION

# Contributing to local economic and social solidarity

The Group's companies help young people without qualifications find work. In France, they belong to some 40 GEIQs (employer groupings for induction and qualification) including the one in the Greater Paris area that was set up by VINCI Construction and the other VINCI works business lines. On a growing number of worksites, induction programmes carried out by Group companies are actively helping to build economic and social solidarity at local level. For example, on the Sud Europe Atlantique high-speed railway concession project awarded to VINCI, the Group has undertaken to ensure that 10% of the worksite earthworks and civil engineering workforce – a total of some 400 people – are beneficiaries of the induction programme.

To support Group companies in this type of programme, VINCI initiated a "hybrid company" (a company with a combined economic and social purpose) programme that will work out an overall induction programme, applying in France to start with. The new structure will handle recruitment, training and social support and will combine substantial social engineering resources with decentralised organisation, in line with the Group's management model. It will ultimately be able to induct about 1,000 people per year.



**Training and equal opportunities.** In the United Kingdom VINCI Construction UK offers high school students a chance to take part in workshops and team challenges to explore the full range of opportunities available in the construction industry.



**Civic engagement.** VINCI Construction encourages its employees to engage in civic activities by sponsoring associations or projects under the VINCI Foundation in France, the ISSA programme in Africa and the Nadace Foundation in the Czech Republic (shown above).



**Equal opportunities.** Above and beyond their role in fostering upward mobility, VINCI Construction companies pursue a pro-active equal opportunities management policy, which is regularly audited by a team of internal auditors.

#### **CIVIC ENGAGEMENT**

#### Encouraging employees to become involved

In line with its solidarity values, VINCI Construction supports long-term projects that create social links and help the unemployed find work. The key player here is the VINCI Foundation, which offers a framework for Group employees' civic engagement through a combination of financial support and skills-based sponsorship. In 2010, 112 projects received Foundation grants totalling €2,039,000. To further anchor it in local communities in conjunction with Group employees, the Foundation launched the Solidarity City programme, which provides support for very small non-profits that create social ties in disadvantaged neighbourhoods, with the backing of local VINCI companies. Two first initiatives were launched in 2010 in Argenteuil and Saint Denis in the Greater Paris region. Outside France, the Nadace Foundation in the Czech Republic and the Civic Engagement Foundation in Germany, established along the same lines as the VINCI Foundation for the Community in France, backed some 20 projects for a total funding of €173,000 in 2010. In Africa, the ISSA (Sogea-Satom Initiatives for Africa) programme supports solidarity actions, such as construction of schools, medical buildings and water supply infrastructure, that are launched and managed locally by the Sogea-Satom offices and site teams. Six projects received support under this programme in 2010, including the construction of a dispensary in the Bekodoka region of Madagascar.



#### SOGEA-SATOM RENOVATES THE SCHOOL IN HANAGBO

When the new Cotonou port project got under way in Benin (see page 38), Sogea-Satom re-opened the granite quarry in Hanagbo, a particularly remote and isolated village without running water or electricity, which lies 160 km north of the capital. In addition to creating local jobs in the quarry, Sogea-Satom funded an extension of the village school via its ISSA programme. The funding paid for a new building with three classrooms and a washroom, which was built by small local company, as well as new furniture.

#### **ENVIRONMENT**

## Limiting the environmental impact of business activities

VINCI Construction's environmental policy aims to make the environment an integral part of all stages of its business activity. Above and beyond compliance with regulations, the Group sees increasingly stringent environmental regulations as an opportunity to upgrade its product and service offering and expand the added value of its business activities. VINCI Construction companies continued to pursue their environmental certification programmes. The proportion of the Group's revenue covered by ISO 14001 certification rose to 59% in 2010. Group companies also worked on projects with certification (HQE, BREEAM, LEED, etc.), which accounted for about 10% of global revenue. Under all these programmes, the environment is an integral part of project execution, which now includes systematic practices in areas such as waste sorting and recycling, noise abatement, dust reduction and provision of safety kits (prevention of accidental pollution). In the United Kingdom, the average recycling rate for demolition waste from VINCI Construction UK projects has now reached 80% (and the rate is close to 100% on a number of projects, such as Terminal 5 at Gatwick Airport).

#### Measuring and reducing CO<sub>2</sub> emissions

VINCI has been measuring its worldwide greenhouse gas emissions according to the ISO 14064 standard since 2007. In 2010, these emissions amounted to a total of 2.15 million tonnes (Scope 2 – emissions directly related to the business activity + energy purchases), of which VINCI Construction accounted for 914,000. In addition to its efforts to reduce the emissions directly generated by its own activity, the Group has included its partners, suppliers and customers in its programme.

#### Developing eco-design

VINCI Construction companies are developing eco-design tools to limit the environmental footprint of buildings and structures by means of life-cycle analysis: the PIC and PRISM programmes at Soletanche Freyssinet, which quantify the environmental footprint of a project in the initial studies phase; the CO<sub>2</sub>CRETE Impact (CO<sub>2</sub> emitted by concrete depending on its formulation and application) and GEStim (global emissions generated by the construction of a structure) software tools at VINCI Construction Grands Projets; and the Equer software (evaluation of the energy performance of buildings) at VINCI Construction France, which also launched its Oxygen offer *(see opposite)* in 2010.



**Thermal measurement during insulation works.** The energy performance commitment is the core objective of the new Oxygen offer developed by VINCI Construction France.



**During construction of the port of Dhamra,** in India, DEME carefully protected sea turtles by equipping its ships with special deflectors to keep the animals from being sucked into its suction dredgers.



**The Grand Stade in Le Havre,** built by VINCI Construction France, will be one of France's very first positive energy stadiums thanks in particular to 1,500 sq. metres of photovoltaic cells installed on its roof.



**Impact resistance test** at the VINCI Construction UK Technology Centre, where all sorts of tests are performed, from waterproofing of curtain walling to identification of building pathologies.



**Developed by GEOCEAN** (ENTREPOSE Contracting), this automatic buoy release system facilitates the precise location of mines during port de-mining operations.



Anticipating the new French thermal regulations that will make low-consumption buildings mandatory, VINCI Construction launched its Oxygen programme in 2010. Oxygen is an eco-offer covering all stages of a building project (design, construction, utilisation) and including a performance guarantee. VINCI Construction undertakes to achieve the energy performance that is announced and approved in the design phase. This commitment may involve financial penalties if the company fails to meet the objectives defined. The eco-design programme takes account not only of the future building's energy consumption but also of its CO<sub>2</sub> emissions and other aspects of its environmental footprint such as the water and natural resources that go into the materials used in its construction.

#### **INNOVATION**

#### From research to operational innovation

VINCI Construction companies take part in research programmes that involve their own teams, their partner networks, and young PhD students working on their thesis within the Group. Topics currently under investigation include early cracking of reinforced concrete structures (second thesis associated with a test programme) and cracking of solid parts (CEOS.fr national programme). VINCI Construction companies are developing their own innovations, which are more immediately related to their activities and the expectations of their customers and are continually being fed into their products and services. For example, Soletanche Freyssinet files several dozen patent applications every year to maintain its competitive edge in its geotechnical, structural and nuclear engineering business activities.

## Fostering research on eco-design and the sustainable city

The VINCI/ParisTech (Mines ParisTech, Ecole des Ponts ParisTech and Agro ParisTech) partnership forged in 2008 set up the first eco-design chair for built structures and infrastructure. This enables VINCI to promote the integration of eco-design concepts into the training provided for future generations of engineers and the development of decision-making tools for economic operators. As part of this partnership, 13 research projects have already got under way. First results were presented at three scientific conferences in 2010 (www.chaire-eco-conception.org). VINCI also encourages forward-looking debate on the sustainable city through the City Factory, a forum in which public- and private-sector operators involved in urban development and mobility issues share experience and expertise. Two seminars were held in 2010, one in Hamburg on the topic of the living city and the other in Lyons on the theme of the interaction between urban development and transport policies (www.lafabriquedelacite.com).

#### Developing participatory innovation

VINCI's innovation culture is closely intertwined with its entrepreneurial culture. In keeping with its decentralised management model, the Group has been developing its innovative potential and encouraging its companies and teams to take practical initiatives in the field. The programme is focused not only on technologies but also on innovations that feed into the Group's continuous improvement programme (such as methods, management, services, safety, and sustainable development). The programme is best illustrated by the VINCI Innovation Awards Competition, which is organised every two years and is open to all employees. While the 1,500 projects entered in the 2009 competition were being put into practice in 2010, the 2011 competition was being prepared. All projects entered and winning prizes were put on line on the Group's Intranet to help disseminate these innovations.

#### 2010 BUSINESS REPORT



#### **OFFICE PROPERTIES**

VINCI Construction France handed over the structural work of the Basalte project, the future Société Générale trading room, in 2010. The 160 metre long "prone tower", which is 35 metres wide and has a floor area of 43,000 sq. metres, is being built on the cover over the ring road in Paris La Défense. It will accommodate 3,500 traders and will be one of Europe's largest trading rooms. In the same business district, VINCI Construction France was awarded the first instalment of rehabilitation work on the Descartes tower (41 levels, 89,000 sq. metres of office space), which was built by the Group at the end of the 1980s. Other office property operations in the Greater Paris region include the second phase of the 90,000 sq. metre Korus project in Suresnes, the 15,000 sq. metre Ovalie building in Saint Ouen and the renovation of a 24,000 sq. metre building in the Avenue Kléber in Paris (see opposite). Projects carried out in the French regions included: in Marseilles, following the handover of the CMA-CGM tower, the resumption at the end of the year of the Les Quais d'Arenc operation in the Euroméditerranée business district (the project will ultimately comprise four buildings, including three high-rises); and in Saint Etienne, the handover of the structural work on the new 26,000 sq. metre Cité des Affaires project by VINCI Construction France.

In Monaco, a consortium comprising VINCI Construction France for structural work and Soletanche Bachy for foundations started construction of the Odéon tower (170 metres high, 48 storeys of office space and apartments, 10 underground levels), the highest building in the Principality, under a  $\in$  270 million contract. The two companies have also formed a consortium to carry out the earthworks/retaining structure and structural work for the Teotista building (six underground levels and 19 storeys). **In the Benelux countries,** CFE continued to work on the South City Office project in Brussels, which includes 31,000 sq. metres of office space and a 142-bed hotel.

**In the United Kingdom,** VINCI Construction UK handed over an office and residential complex built for Anderston in Glasgow.

The capabilities offered by Soletanche Bachy (Soletanche Freyssinet) in deep foundation works were selected for two major projects. One is in Vietnam, where the company, which built the foundations for the Vietcombank in Hanoi, is now carrying out the full range of infrastructure works on a 35-storey high rise with four underground levels for the same customer in Ho Chi Minh City. The other is in Saudi Arabia, where the company was awarded preliminary testing (piles and barrettes to depths of 45 and 75 metres) in preparation for the construction of the Kingdom Tower in Jeddah, which could become the world's tallest building. ■





**01 Odeon Tower, Monaco.** The Principality's highest building with 48 storeys of office space and apartments is being built by a consortium that includes VINCI Construction France (structural works) and Soletanche Bachy (foundations).

**02 Société Générale trading room.** After building the three towers of the Société Générale's head office in Paris-La Défense, VINCI Construction is now building Basalte, the "prone tower", at the same site. 160 metres long and 35 metres wide, with a floor area of 43,000 sq. metres, it will very soon accommodate thousands of traders.

**03 Louvre Museum, Paris.** In preparation for the construction of the new Arts of Islam department, Soletanche Bachy underpinned the Cour Visconti and built the retaining structures.





03



**04 Quais d'Arenc, Marseilles.** The operation, a new stage in the vast Euroméditerranée programme, which is redeveloping the interface between the city and the port of Marseilles, covers the ultimate construction of four buildings, including three high-rises.



#### Saint Denis CITÉ DU CINEMA

In Saint Denis near Paris, VINCI Immobilier awarded to VINCI Construction France, in synergy with the companies of the VINCI Energy business line, the complete construction of the Cité du Cinéma for EuroCorp Studios. Built on the site of a former EDF power station - a part of the industrial heritage of the 1930s - the 56,000 sq. metre complex will be devoted to film-making and the film industry and will accommodate the EuroCorp company's head office, production and postproduction offices, nine sound stages, a 450-seat screening room and facilities for the Ecole Nationale Supérieure Louis Lumière school. Work got under way in March 2010 and handover is scheduled in April 2012. The works have a value of €103 million.

#### **PRIVATE-SECTOR BUILDING**

The ambitious project carried out for the Louis Vuitton Foundation for Creation continued apace in Paris's Bois de Boulogne. The structure, designed by Frank Gehry (the architect of the Guggenheim Foundation in Bilbao) will be made up of a series of skylights and "icebergs" with a variety of shapes. The complexity of the project is commensurate with its artistic ambition. In shopping centres, VINCI Construction France continued work on the new Marché de Chambéry in the Savoie region, a 30,000 sq. metre complex comprising shops and service sector premises over six underground levels. In the United Kingdom, VINCI Construction UK handed over The Mall, a shopping centre in Blackburn, West Lothian County.

In the hotel market, in Paris, VINCI Construction France continued the conversion of an office building in the rue Saint Honoré into a 140-room luxury hotel for the Mandarin Oriental chain and began work on the future Peninsula Hotel in the Avenue Kléber at the site of a former international conference centre. At the Knokke seaside resort in Belgium, CFE is building the La Réserve project comprising 150 luxury apartments and a five-star hotel.

**In the industrial sector,** VINCI Construction France is continuing to work in synergy with VINCI's Energy business line to build the new Airbus A350 XWB assembly plant in Toulouse; Group companies are responsible for civil engineering, main services and technical and fitting and finishing works. ■





#### **URBAN DEVELOPMENT**

In France, VINCI Construction subsidiaries continued work on major urban renewal projects. In Lyons, as part of the renewal project at the tip of the peninsula between the Rhône and Saône Rivers, they are working with the companies of VINCI's Energy business line to build the Lyon Confluence shopping and leisure centre (a 164,000 sq. metre complex), after handing the new Rhône-Alpes regional building in the same neighbourhood in 2009. In Hautmont in northern France, they are renovating 459 housing units, two schools, three neighbourhood centres and a municipal building as part of a global contract awarded by the municipal authorities covering a total of 28 projects to be completed within a period of three and a half years. In Massy Palaiseau in the Greater Paris region, where they are receiving support from the Group's project structuring teams, they are converting an industrial brownfield site into a new urban neighbourhood, Massy Atlantis; the urban

02



renewal project reached a new milestone with the handover of 200 housing units.

In Belgium, a consortium led by CFE was selected in early 2011 to carry out the UP-site project in the new canal neighbourhood in Brussels. Work includes the construction of a 42-storey apartment high-rise, the tallest in Belgium at 140 metres, four office buildings with a floor area of 30,000 sq. metres and four residential buildings with a floor area of 36,000 sq. metres over three car park levels – a project with a works value of €71.5 million for CFE. ■

#### HOUSING

In France, as the market rebounded, VINCI Construction France carried out a large number of projects of all sizes for private-sector developers and clients, including several for VINCI Immobilier: the D-sign building in Lyons, at the Le Bon Lait development zone (15,000 sq. metres of housing units and shops); the Portes de Rosny project in the Seine Saint Denis department (a total of 46,000 sq. metres, including a first 109-apartment building handed over in 2010); in Boulogne Billancourt, as part of the Rives de Seine project on land formerly owned by Renault, the Rive de Parc residence (150 apartments and three shops), completed in 2010, as well as a new 333-unit residential complex on which work will start in 2011 (value of the works: €40.4 million). The Ampère development zone project in Massy was another significant order in 2010 (221 housing units in five buildings). Business was especially brisk in the social housing market, where significant public funding was provided to extend and refurbish the existing stock. The many projects carried out over the year included, in the Greater Paris area, those in Saint Ouen l'Aumône for Emmaüs Habitat (construction of 90 units and renovation of 384 units that remained occupied during the works), in Aulnay sous Bois for Logement Francilien (100 new units, 288 units to be renovated) and a nine-storey student dormitory with 184 units in Paris's 19th arrondissement for the Régie Immobilière de la Ville de Paris authority (under a €16 million contract). 

**01 In Gdansk, CFE Polska** started construction of the first tower in the Ocean's 4 project, a 540-apartment residential complex for which CFE's subsidiary BPI is co-developer.

#### 02 Lyon Confluence leisure and shopping complex.

VINCI Construction France, closely involved in the urban renewal project on the peninsula between the Rhône and Saône rivers, is building the 164,000 sq. metre complex in parallel with the Confluences Museum project. **03 In Warsaw, Warbud** is carrying out the structural work on the Prosta tower, which has a bearing façade in the shape of a giant net.

#### Belgium NEW SCHOOL PROJECTS

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At the site of the former Ecole des Cadets school in Laeken, a municipality within the Brussels urban area, CFE is part of a consortium building a fourth European school that will open in 2012 and accommodate 2,500 students. The project involves the renovation of nine buildings dating back to the turn of the 20th century, in which classrooms will be installed, and the construction of eight new buildings to house facilities such as car parks, a gymnasium, kitchens and a dining room (pictured). In addition, CFE signed its first public private partnership in the building sector, together with SKE (VINCI Facilities) and an investment fund, in 2010. The project covers schools in the city of Eupen in Belgium's German-speaking community. The contract covers 64,000 sq. metres of buildings (of which 46,000 sq. metres of new construction and 18,000 sq. metres of renovation) and their maintenance for a period of 25 years; the project involves an investment of €146 million.



#### BUILDING



02

**01** Cité de l'Océan et du Surf in Biarritz. Taking inspiration from the shape of a wave, the structure, built under a public private partnership that includes maintenance of the site for 30 years and the extension of the Musée de la Mer museum, was handed over at the end of 2010. **02** In Liverpool, VINCI Construction UK handed over the Whiston hospital, built under a PFI contract, six months ahead of the contractual schedule.

In French Guiana, the local VINCI Construction subsidiary started work on a 267-unit social housing complex comprising 14 buildings with a contract value of €13 million.

As part of its property development activity, CFE began the Green Hill residential project in Luxembourg and the Ocean's 4 project (a 540-unit apartment complex to be built in several phases) in Gdansk, Poland. ■

#### **PUBLIC-SECTOR BUILDING**

In France's hospital sector, 2010 was a particularly busy year as a result of the Hôpital 2012 plan. The main projects under way in 2010 were the following: in Paris, the Necker Enfants Malades project (demolition of several buildings and construction of the new 55,000 sq. metre Laënnec medical and surgical complex), the 22,000 sq. metre Brain and Spine Institute and the Tenon hospital (a new 25,650 sq. metre ER, surgery and anaesthesiology building); in Marseilles, the new 52,000 sq. metre, 480-bed Ambroise Paré/Paul Desbief hospital; in Toulon, the 147,600 sq. metre, 740-bed Sainte Musse hospital; in Nice, the 165,000 sq. metre, 700-bed Pasteur hospital; in Toulouse, the university cancer clinic as part of the new Cancéropole cancer complex (seven buildings with a total floor area of 100,000 sq. metres); in the Dordogne department, restoration of the 37,400 sq. metre Périgueux hospital; and in the Saône et Loire department, the new 544-bed Châlon sur Saône hospital.

The main orders booked during the year were: in the Greater Paris area, the new Victor Dupouy hospital in Argenteuil (with an overall contract value of €155 million); in Marseilles, the new 25,000 sq. metre Assistance Public-Hôpitaux de Marseille logistics hub being built under a 25-year partnership contract (with a works value of €36.7 million); in the Savoie department, the Chambéry hospital, a new 72,000 sq. metre, 670-bed facility (works value: €139 million); in the Greater Lyons municipality of Bron, the construction/refurbishment of the adult psychiatric complex at the Vinatier hospital centre (333 beds, works value: €35 million); in the Nord department, the new rehabilitation institute

#### BUILDING

at the Valenciennes hospital centre (13,000 sq. metres, works value: €18 million).

In the education sector, VINCI Construction France started the preparatory phases of two major PPP projects won the previous year. The first involves the construction of four new buildings with a total floor area of 44,600 sq. metres as part of the University of Paris 7 complex under construction at the Paris Rive Gauche site. The second covers the construction of the new ENSTA (Ecole Nationale Supérieure de Techniques Avancées) campus at the Ecole Polytechnique site in Palaiseau (comprising a classroom and research building, 432 housing units and a gymnasium). VINCI Construction France also continued construction of the new Jacqueline Auriol middle school in Boulogne Billancourt and Critino Garcia middle school in Aubervilliers in the Greater Paris area, the Jean Moulin middle school in Berck in the Nord department and the Francois Mauriac middle school in Saint Symphorien in the Gironde department as well as the 12,500 sq. metre Centre Européen de Textiles Innovants research centre in Roubaix. In Paris, the Group won the rehabilitation of some of the buildings - listed as historic landmarks - belonging to the Ecole Militaire in the 7<sup>th</sup> arrondissement.

VINCI Construction France's orders also included a PPP for the construction and 20-year maintenance of the Henri Becquerel middle school in Sainte Genevieve des Bois in the Loiret department. The Group was also tapped to build a second-chance centre for 2IDE (Immobilier Insertion Défense Emploi) in Meyzieu in the Greater Lyons region (seven buildings with a total floor area of 11,250 sq. metres) dedicated to the social and vocational integration of young people failing in school (a contract with a value of €10.5 million).

In functional buildings, VINCI Construction France continued the construction of the Pierres Vives complex that will house the Hérault departmental archives in Montpellier and the new rental car centre being built under a PPP contract at Nice Côte d'Azur Airport (the first phase of the 2,500-vehicle capacity building was handed over in 2010). In addition, 71 gendarme stations were under construction under PPP contracts at the end of 2010. **Cultural and heritage building activity** was intense, with the projects under way at the Cité du Cinéma in the Greater Paris area; the Confluences museum in Lyons; the Museum of the Civilisations of Europe and the Mediterranean in Marseilles; the Jacobins cultural centre in Le Mans; and the Cité de l'Océan in Biarritz, a project handed over in 2010 and built under a PPP contract that includes maintenance of the structure for a period of 30 years.

In major sports facilities, key projects included the MMArena stadium in Le Mans, completed in 2010 and inaugurated in 2011. The construction of the 25,000-seat stadium involved five VINCI Construction companies working in synergy with the other Group business lines. In 2010, a new stadium project (with a seating capacity of 25,000 and a contract value for VINCI Construction France of €80 million) got under way in Le Havre and work resumed on the Valenciennes stadium, which will also seat 25,000. The construction of the 35,000seat Nice Stadium under the partnership contract won by VINCI Concessions at the end of the year, which entered into force in 2011, should accelerate business activity growth in this sector.





**01 | In French Guiana,** the Mana high school built under a BEA long-term administrative lease by Nofrayane as a bioclimatic programme accommodates 750 students. **02 MMArena Stadium, Le Mans.** Built by VINCI as a concession, the new Le Mans stadium involved all the Group's works business lines, including four VINCI Construction France companies and Dodin Campenon Bernard. The new facility was inaugurated on 29 January 2011.

**03 Gatwick Airport, London.** VINCI Construction UK, which does substantial work in the airport sector, built the Inter Terminal Transit System that connects the north and south terminals at Gatwick Airport.









In Belgium, a consortium including CFE started work on the construction and renovation (under a contract with a value of €23.5 million for CFE) of the fourth European school in Brussels, which will serve nearly 2,500 students from the start of the 2012 school year, and CFE signed its first PPP contract in the building sector (see page 24).

In Overseas France, public building activity mainly involved: in the education sector, the extension of the Le Moule middle school in Guadeloupe, the rehabilitation of the Melkior high school in Cayenne, French Guiana and the extensions of the university in Nouméa, New Caledonia and the Labattoir middle school in Mayotte; in the health care sector, the hospital extension in Cayenne and the hospital construction in Saint Laurent, French Guiana, as well as the construction of the Mtsapéré medical centre in Mayotte.

In the United Kingdom, public-sector orders bolstered business activity against a backdrop of severe economic recession. In the hospital sector, VINCI Construction UK completed several projects (Aintree teaching hospital, North Manchester general hospital), continued construction of the Cynon Valley hospital and won new contracts for the Circle Hospital in Reading (£27 million), the Community Hospital in Birkenhead (£27 million) and the Royal Oldham Hospital in Manchester (£32.8 million) the last two projects under the national P21 programme.

In the education sector, the Building Schools for the Future (BSF) programme also helped to stimulate activity. As part of this programme, VINCI Construction UK won a £95 million contract to build five schools in Sheffield and continued construction of schools in the cities of Luton, Barnet, Stockport and Liverpool. Lastly, VINCI Construction UK began work on the third instalment of the MoDEL programme (with a total value of £160 million), which involves the structural renovation of a Royal Air Force site in London.

#### 04 Temple of Divine Providence, Warsaw.

The 75 metre high, 67 metre diameter reinforced concrete building has a 4,500 seat capacity and is the largest ecclesiastical structure built in Poland in several centuries. It was built by Warbud.

#### 05 | The new Barnet College buildings, north

of London, accommodate 2,300 students and staff members. The project, carried out without closing the building, was carefully phased to keep school activity going during the works.

#### 2010 BUSINESS REPORT

# CIVIL ENGINEERING



#### EARTHWORKS, TRANSPORT INFRASTRUCTURE

**In France,** in the motorway sector, VINCI Construction worked on two major projects on the ASF network for VINCI Autoroutes. The first involved the extension of the A89 towards Lyons; on this new 53 km section, work entered the full production phase in 2010. VINCI Construction Terrassement is carrying out 13 million cu. metres of earthworks and building about 60 standard engineering structures. The second involved widening the A63 motorway to a dual three-lane carriageway over a 40 km section as it approaches the border between France and Spain; a first 18 km section between Ondres and Biarritz will be handed over in 2012.

In the railway sector, VINCI Construction won one of the works packages (Baudrecourt-Vendenheim) of the LGV Est-Européenne high-speed line (Phase 2), a  $\in$ 184 million contract to build 7.5 km of new lines. In the year's standout event, a VINCI-led consortium won the concession for the future 302 km high-speed line between Tours and Bordeaux, one of the Europe's largest transport infrastructure projects in the current period *(see opposite).* 

VINCI Construction also carried out civil engineering work on several urban transport infrastructure projects, including: in the Greater Paris area, preparatory works for the automation of Line 1 of the Paris metro, covers over the A6B motorway and the tracks at the Gare d'Austerlitz railway station in the new Paris Rive Gauche neighbourhood; and in Tours, construction of the northwestern ring road.

In the airport sector, lastly, business will be boosted in coming years by the construction, in synergy with the other VINCI business lines, of the new Grand Ouest Airport in Nantes, under a concession awarded to the Group; the total amount of the works is close to €450 million.

**In Belgium,** CFE continued to work in a consortium on the Diabolo railway link between the E19 motorway and the Zaventem airport terminal.

![](_page_30_Picture_7.jpeg)

![](_page_30_Picture_8.jpeg)

In the United Kingdom, VINCI Construction Grands Projets completed the 23 km M1 motorway widening project near Nottingham. In London, VINCI Construction UK completed the capacity extension work on the Docklands Light Railway, which serves the eastern outskirts of the urban area, and continued or started work on major underground station renovations at King's Cross, Tottenham Court Road and Victoria. **In Greece,** VINCI Construction Grands Projets continued work on the Athens-Tsakona motorway project, for which VINCI holds the concession, as part of a consortium. The work mainly involved refurbishing and widening of existing sections (totalling 120 km); the project also covers construction of 163 km of new sections including 17 km of tunnels, which are currently being built. Also in Greece, on the Maliakos-Kleidi motorway, another concession in which the Group is participating, VINCI Construction Grands Projets

**01 Docklands Light Railway, London.** For this project, carried out in the run-up to the 2012 Olympic Games, VINCI Construction UK worked on 17 platforms, two stations and 70 structure renovation projects.

**02** In Burkina Faso, Sogea-Satom is building the RN5 national highway in several works packages. The third, initiated in September 2010, is to be completed in 15 months.

**03 In Qatar,** QDVC, the Qatari Diar-VINCI Construction Grands Projets joint venture, started the second phase of the Lusail light rail system, totalling four lines and 25 km (of which 6.6 km underground) and 30 stations (of which seven underground).

![](_page_31_Picture_0.jpeg)

03

completed the rehabilitation of 210 km of existing sections and continued the construction of 30 km of new sections comprising three dual-tube tunnels with a total length of 11 km, including the longest tunnel in the Balkans with a length of 6 km. In Poland, Warbud worked on a number of road infrastructure construction and renovation projects. The company, which is responsible for engineering structures, works on this type of project with VINCI's roadworks business line, Eurovia, which handles earthworks and pavements. The two partners completed construction of the Konotopa interchange, continued work on the 17 km S7 expressway between Elblag and Kalsk and started work on a 20 km section of the S5 between Poznan and Gniezno. Again with Eurovia, Warbud is taking part in the construction of the Jaroslaw road bypass in the south-east of the country (11 km of expressway including eight engineering structures). Given the Polish authorities' plans to build 1,100 km of motorways and 2,100 km of expressways, notably in the run-up to the Euro 2012, business activity should remain buoyant in this market in coming years.

**In Slovakia,** group synergies also supported business volume. SMP is responsible for some of the engineering structures on the 52 km R1 expressway being built as a concession by VINCI, with Eurovia overseeing the works.

**In Russia,** VINCI Construction Grands Projets, in synergy with VINCI Construction Terrassement and Eurovia, signed a client support contract for the construction of a first 43 km section of the Moscow-Saint Petersburg motorway project led by VINCI Concessions.

In Qatar, QDVC, the Qatari Diar – VINCI Construction Grands Projets joint venture, won the second phase of the light rail project in Lusail, the new city north of Doha (a  $\leq$ 129 million contract) and the construction, as part of the Lusail Car Parks,

![](_page_31_Picture_7.jpeg)

#### High-speed rail line 302 KM BETWEEN TOURS AND BORDEAUX

The Sud Europe Atlantique Tours-Bordeaux high-speed rail line concession was awarded in 2010 to a consortium led by VINCI and it is expected that the contract will be signed in the first half of 2011. It provides for the construction of 302 km of high-speed rail line and the construction of 40 km of connecting lines between the new line and existing lines. Work is to be completed within 78 months of the entry into force of the contract, and the line is scheduled to begin operating in 2017. At the height of earthworks and civil engineering work, up to 4,500 people will be working on the site. In the second half of 2010, in coordination with the concession grantor, Réseau Ferré de France, the Cosea construction consortium, in which VINCI Construction acts as project manager, undertook the first detailed studies and organisation phases. The first infrastructure works could get under way in 2012.

of a technical tunnel to hold the city's utility networks. QDVC will also be building a 2,000-space underground car park and a landscaped garden in Doha opposite the Sheraton Hotel under a  $\notin$ 264 million contract.

In Africa, the earthworks and roadworks activity, Sogea-Satom's core business, remained buoyant. The major projects currently under way include the RN12 national highway in Burundi and the RN5 national highway in Burkina Faso, including a new works package covering a 6 km dual two-lane urban carriageway and related parking areas. Sogea-Satom also completed the renovation and extension of the Zanzibar airport runway in a record 15 months.

**In Asia,** VINCI Construction Grands Projets signed a memorandum of understanding in Vietnam to build turnkey crossing infrastructure at the Ca pass; the project includes the widening of 9 km of roads and construction of a new 11 km

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section, comprising two tunnels, three bridges and several approach roads. In addition, Soletanche Bachy continued its long term work on the successive Singapore metro projects, notably including a 600 metre cut-and-cover tunnel under existing streets (works package 903). Activity was also intense in Hong Kong, another location where the company has substantial operations (see below).

In Soletanche Freyssinet's other speciality business activities, noteworthy projects included ground consolidation to prepare the construction of two new cities, carried out by Menard in Kuwait (three contracts totalling 11 million sq. metres) and retaining structures built by Terre Armee in South Africa (Gautrain project), India (Badarpur) and Malaysia (100,000 sq. metres of Reinforced Earth® walls for the Ipoh-Padang Besar rail line.

![](_page_32_Picture_3.jpeg)

#### Hong Kong NUMEROUS URBAN PROJECTS

2010 was a busy year in Hong Kong for Soletanche Bachy (Soletanche Freyssinet), which has long operated there. As part of the Express Rail Link project - the rail line linking Hong Kong with Guangzhou on the mainland - the company is building part of the foundations of the future Kowloon Terminus (180 large-diameter piles, 45,000 sq. metres of 1.5 metre thick diaphragm walls, utility line and road diversion), as well as a 270 metre long cut-and-cover tunnel. Soletanche Bachy is also taking part in the work on the Central-Wanchai Bypass, the underground expressway that runs across the island of Hong Kong, for which it is building 37,000 sq. metres of diaphragm walls and barettes in thicknesses between 1 and 1.5 metres.

![](_page_32_Picture_6.jpeg)

#### BRIDGES

In France, above and beyond the many standard engineering structures built as part of road and rail infrastructure projects, VINCI Construction continued or completed several large-scale projects: in Brittany, the Térénez Bridge, a 525 metre long curved cable stayed structure linking the Crozon Peninsula with the mainland in western France; near Orleans, a new bridge across the Loire as part of the A71 widening project on the Cofiroute network, for VINCI Autoroutes; in the Greater Lyons region, the 1,200 metre Côtière design-build viaduct project on the A432; in Bordeaux, the Bacalan Bridge, which will have a 3,500 tonne, 117 metre long central lift span to create a 106 metre wide, 53 metre high passage for ships. During the year a consortium including three VINCI Construction business units also signed a public private partnership contract to build a new suspension bridge with a span of 164 metres in Verdun sur Garonne and maintain it for a period of 25 years.

**On Reunion Island,** VINCI Construction began construction of a 695 metre concrete and steel road bridge over the Saint Etienne River.

In Luxembourg, CFE began construction of the Pulvermuehle viaduct for the Luxembourg Railways. In Trinidad and Tobago, VINCI Construction Grands Projets followed its handover of a motorway interchange in 2009 with the construction of a bridge spanning the Churchill Roosevelt motorway in Aranguez.

Freyssinet applied its specialised capabilities to a large number of projects around the world. The many structures under construction and/or completed during the year included the aforementioned Térénez Bridge in France; the Port Mann Bridge (a 10-lane motorway bridge on which Freyssinet installed 288 stay cables) in Vancouver, Canada; the 152 stay cable Indian River Inlet Bridge on the Delaware coast in the United States; and, in Korea, the 8.2 km bridge and tunnel link between the port city of Busan and the island of Goeje, for which Freyssinet performed the cable stay work. The company also worked on a large number of bridge repair projects, notably in Australia (replacement of the suspensions on the Sydney Harbour Bridge), Mexico (repair of five bridges damaged by flooding), France (the Recouvrance lift bridge in Brest) and Romania (R14 bridges).

**01** In Bordeaux, VINCI Construction is designing and building the Bacalan lift bridge, which rests on piles driven into the bed of the Garonne. The central span is designed to be raised 53 metres. **02 In Korea**, Freyssinet supplied and installed the 160 cable stays of the Geoga Bridge between Busan and the island of Geoje, and took part in the construction of the towers and the prestressing of the deck.

![](_page_33_Picture_0.jpeg)

![](_page_34_Picture_0.jpeg)

#### CIVIL ENGINEERING

![](_page_35_Picture_1.jpeg)

#### TUNNELS

In France, a highlight of 2010 was the handover of the second section of the A86 Duplex in the Greater Paris area. The inauguration of the complete structure in early 2011 marked the culmination of a project that took more than two decades to complete and on which a large number of VINCI companies worked within a consortium led by VINCI Construction Grands Projets. The outsized civil engineering structure is an 11 km tunnel lying

![](_page_35_Picture_4.jpeg)

![](_page_35_Picture_5.jpeg)

#### 03

**01 | In Lyons,** the Group is designing and building the new 1.7 km Croix Rousse road tunnel and simultaneously renovating an existing tunnel. The new tube will be reserved for buses and sustainable transport.

**02** In the Greater Paris area, the second section of the A86 Duplex was completed in 2010, in the culmination of a project that took more than two decades to build and on which many VINCI companies worked within a consortium led by VINCI Construction Grands Projets.

at a depth of 15 to 90 metres, which crosses four aquifers and 13 different geological horizons. It is also a comprehensive transport system, with a supervision system controlling an unparalleled array of safety equipment.

During the year, the cooling water discharge tunnel was also handed over for the EPR reactor in Flamanville, built by VINCI Construction Grands Projets and Soletanche Bachy for EDF, and a number of projects calling on the complementary capabilities of Dodin Campenon Bernard and regional VINCI Construction France subsidiaries were continued: in Paris, the extension of Line 12 of the Paris metro between Porte de la Chapelle and Mairie d'Aubervilliers (a 3,900 metre tunnel, one station and four emergency shafts); in Lyons, the extension of Line B of the metro towards Oullins (1,800 metre tunnel) and the structural refurbishment of the Croix Rousse road tunnel (design-build project involving a new 1,730 metre structure and renovation of the existing tunnel, a project carried out in synergy with VINCI's Energy business line); and on the A89, construction of the 3,900 metre Violay dual tube tunnel for VINCI Autoroutes. VINCI Construction France also continued work on the 1,400 metre Prado Sud cutand-cover tunnel in Marseilles.

In Toulon, Soletanche Bachy continued work on the second road tunnel crossing the city west to east, using compensation injections to control subsidence in a sensitive urban area. In the Greater Paris area, the company is also building a second section of the VL9 wastewater connector in synergy with Dodin Campenon Bernard; a tunnel boring machine built by specialised subsidiary CSM Bessac is being used to construct the 3,185 metre long tunnel with an inside diameter of three metres at a depth of 23 metres.

In the Benelux countries, CFE and VINCI Construction Grands Projets continued underground works on two projects awarded to VINCI as concessions. One is a 16.2 km rail link under the port of Antwerp and the Escaut River (the Liefkenshoek project), which includes a 6 km dual-tube tunnel; the project entered the full production

**03 In Amsterdam,** CFE and VINCI Construction Grands Projets are building a 715 metre submerged tunnel as part of the Cœntunnel project. Pictured here, the site where the future submerged caissons are built.

#### CIVIL ENGINEERING

phase in 2010 with the installation and start up of two TBMs that are simultaneously boring both tunnels, set to be opened in 2014. The other is a 715 metre submerged road tunnel in Amsterdam that will connect the city centre with its northern sector (the Coentunnel); work proceeded simultaneously at the construction site where the caissons of the submerged tunnel are being built and at the project site.

In the United Kingdom, two major contracts won in London in 2010 and early 2011 bring VINCI Construction Grands Projets and Soletanche Bachy together in a consortium with other partners: one involves the construction of a 7 km tunnel (the Lee Tunnel) to collect rainwater and wastewater in the eastern part of the urban area (total contract value: €476 million; VINCI share: 50%); the other covers construction of the tunnels for two stations along the future Crossrail express rail system (total contract value: €275, VINCI share: 37%). Soletanche Bachy also built the walls of the cut-and-cover tunnels for the Tyne Tunnel project in Newcastle.

**In Sweden,** the geologically complex Hallandsås project passed a major milestone with the break-through of the first 8.6 km tunnel *(see page 34)*.

#### PORT AND INLAND WATERWAY WORKS

**DEME** worked on world-class projects. In 2010, in addition to extending the port of Durban in South Africa and continuing the Panama Canal deepening and widening project (involving the dredging of 9 million cu. metres of materials), the company began the London Gateway Port project in the United Kingdom. The construction of this container ship terminal, one of Europe's largest, will require deepening the Thames over a length of 100 km. DEME also won new contracts in Germany, to build offshore wind farms, and in Russia, where the company will be carrying out three significant projects: 1,220 km of rip rap for two offshore gas pipelines (North Stream) linking Russia with Germany via the Baltic Sea; placement of 100,000 tonnes of gravel bedding to support a gas platform in the Kara Sea; and filling the site of the 2014 Winter Olympics in Sochi with sand taken from the Black Sea and transported over a distance of 120 km.

**Soletanche Freyssinet's specialised subsidiaries** also took part in major port projects. In France, Soletanche Freyssinet handed over the last of the 10 berths it built at the Port 2000 site – a project on which a large number of VINCI Construction companies worked for nearly

![](_page_36_Picture_8.jpeg)

![](_page_36_Picture_9.jpeg)

![](_page_36_Picture_10.jpeg)

03

**01** In Brazil, DEC (DEME), which specialises in site remediation, took part in the conversion of a 45 hectare uncontrolled landfill into a new terminal for container ships, by treating the ground in place and re-using over 70% of the materials treated.

**02** In South Africa, DEME completed the restructuring of the port of Durban, the continent's largest project of this type. Work included widening the entrance to the port (from 120 to 220 metres) and deepening the channel (from 12.8 to 19 metres).

**03** In Cotonou, the complementary capabilities of Sogea-Satom, Soletanche Bachy, Dumez-Maroc and EMCC are being used in the port extension project. The first works package, a 300 metre sand barrier, was handed over in 2010.

![](_page_37_Picture_0.jpeg)

a decade. The company is also working in synergy with Sogea-Satom and VINCI Construction France on the port of Cotonou extension project, creating a 600 metre diaphragm wall quay and extending the existing breakwater by 300 metres.

#### INDUSTRIAL AND ENERGY INFRASTRUCTURE

**Industrial civil engineering.** VINCI Construction's very broad range of capabilities was in evidence on its many projects, which included: in Morocco, two cement works in the east-central part of the country; on Reunion Island, the Le Port Grain terminal; in New Caledonia, the nickel

![](_page_38_Picture_3.jpeg)

#### **Chernobyl** FIRST WORKS AT THE SITE

The Novarka consortium made up of lead company VINCI Construction Grands Projets and Bouygues Travaux Publics is building the confinement that will enclose the damaged Chernobyl reactor and its sarcophagus and be used as a dismantling tool. The project entered the operational phase in 2010. By the end of the year, nearly 900 consortium employees, including 120 expatriates, were working at the site and at the design office and the various logistics facilities deployed throughout the region. The 23,000 tonne arch, 105 metres high and 150 metres long, will be assembled at an area set aside to the west of the existing sarcophagus and then slid over it on rails.

![](_page_38_Picture_6.jpeg)

processing plant in Koniambo; in Martinique and on Reunion Island, the EDF PEI power station projects. **Nuclear engineering.** VINCI Construction's work in the nuclear sector includes both construction of nuclear civil engineering structures, where it is able to take on global projects, and specialised nuclear engineering projects, where its subsidiaries operating under the Nuvia brand offer specialised capabilities.

In nuclear engineering, the year's projects included: in Ukraine, the operational launch of the

sarcophagus confinement project at Chernobyl; in France, the Magenta project (a storage facility for nuclear fissile materials to be used in research, which was handed over by VINCI Construction at the Cadarache site; and two extension projects: one at the Areva site in La Hague, the other at the Georges Besse II-north plant at Pierrelatte. VINCI Construction also won the contract to build the containment for the future ITER nuclear fusion reactor (a 130 metre long, 90 metre wide and 50 metre high building). Freyssinet prestressed

**01 In Rotterdam,** ENTREPOSE Contracting, VINCI Construction Grands Projets, CFE and Freyssinet have completed the construction of three tanks with unit capacities of 180,000 cu. metres for the port's new regasification terminal.

**02** In Papua New Guinea, SPIECAPAG (ENTREPOSE Contracting) is carrying out its largest-ever project: a 450 km gas pipeline built in an environment that is partly devoid of infrastructure and requires the construction of access roads. **03** In France, Nuvia (Soletanche Freyssinet) regularly works at the Cadarache nuclear site. The company is notably also building the earthquake protection structures for the ITER reactor.

![](_page_39_Picture_1.jpeg)

![](_page_39_Picture_2.jpeg)

03

the containments of the Kalinin 4 reactor in Russia and the Olkiluoto EPR reactor for Areva in Finland, a project handed in over three months ahead of the contractual deadline.

**Nuvia** carried out several decommissioning projects for EDF, the CEA and Areva in France. Its bids were also selected for the construction of the anti-seismic bearings of the ITER reactor in Cadarache (which follow those of the RJH reactor) and the fire protection systems for the Flamanville EPR reactor and several nuclear power stations in China. In the United Kingdom, Nuvia expanded its engineering activity at the Sellafield site, the main British nuclear power complex, and opened up new prospects in the new construction market by forging a partnership with the shipbuilding group Cammel Laird. Lastly, Nuvia worked as an international consultant for the EBRD (European Bank for Reconstruction and Development) on the unloading of fuel from the Russian Papa class nuclear submarines.

#### OIL AND GAS INFRASTRUCTURE

**SPIECAPAG,** an ENTREPOSE Contracting subsidiary specialising in land-based pipelines, continued work on two major projects in South Africa (a 700 km pipeline between Durban and Johannesburg) and Angola (network of three gas pipelines). At the end of the year it began its largest-ever project, a 450 km pipeline for Exxon Mobil in Papua New Guinea. The project, which has a value of over \$800 million, includes engineering, construction of 450 km of pipeline, installation of ancillary equipment (optical fibre, wiring) and the construction of some 20 km of access roads. Business was also brisk in coastal operations (pipelines built in shallow waters), notably on two projects in Cameroon and New Caledonia respectively.

LNG/LPG storage tanks. In the Netherlands, ENTREPOSE Contracting, VINCI Construction Grands Projets, CFE and Freyssinet completed three tanks, each with a capacity of 180,000 cu. metres, for the new regasification terminal in the port of Rotterdam. In Algeria, the Group continued the construction of three tanks in Skikda. In addition to the projects currently under way, an €83 million contract was booked at the end of the year for the construction of an LPG storage centre in Gabès, Tunisia. ■

### 2010 BUSINESS REPORT

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# HYDRAULIC ENGINEERING

#### DAMS

**Soletanche Bachy's expertise** in deep foundations and geotechnical engineering is frequently in demand for dam construction and renovation projects. For example, in the United States Soletanche Bachy continued rehabilitation of the Wolf Creek Dam in Kentucky, the country's ninth largest retention dam. After installing a waterproof cutoff wall through and under the dam, Soletanche Bachy built a 1,200 metre long diaphragm wall to a depth of up to 85 metres in very hard rock. Execution was in two phases: construction of a temporary wall to protect the body of the dike and then of the final wall drilled through the temporary wall.

In another development, Soletanche Bachy won the contract to build a waterproof cutoff for the Subansiri gravity dam under construction in northern India. The wall will be built from tunnels within the dam, using a small hydrofraise machine developed by Soletanche Bachy.

Hydroplus (VINCI Construction Grands Projets), which specialises in the installation of fusegates that optimise safety and increase the retention capacity of dams, worked, inter alia, on the Kastraki hydroelectric dam in Greece (on which it installed 20 straight fusegates with a height of 1.9 metres and a width of 6 metres) and the Canton Dam in Oklahoma in the United States, where Hydroplus is installing nine fusegates with a height of 9.60 metres, the highest ever built, on a new highwater spillway. The fusegates will allow passage of the full 9,900 to 18,000 m<sup>3</sup>/s capacity. Again in the United States, Hydroplus won a new order for safety work on the Foss Dam in Massachusetts. In France, VINCI Construction Terrassement is taking part in the construction of the dam on the Rizzanese in southern Corsica, a 41 metre high gravity dam with a length of 140 metres, using the roller compacted concrete (RCC) method.

![](_page_42_Picture_5.jpeg)

#### WATER NETWORKS, DRINKING WATER SYSTEMS

**In France,** the hydraulic engineering activity is spread over a large number of medium-sized contracts. VINCI Construction France subsidiaries carry out a large amount of work for local authorities to replace lead pipes and mains and divert utility networks in conjunction with the construction of light rail lines, such as the T3 line in Paris. They also take on more global hydraulic civil engineering projects, such as the new Saint Jean de Mayenne drinking water plant.

**In Africa,** Sogea-Satom started work on the new drinking water plant in Libreville, Gabon, which will involve building two storage reservoirs with capacities of 7,500 and 10,000 cu. metres respectively and laying 12 km of 1,000 mm diameter pipelines. In another project, the company handed over the new Gaba raw water catchment station that now supplies Kampala with 250,000 m<sup>3</sup>/day. VINCI Construction Grands

![](_page_42_Picture_9.jpeg)

![](_page_42_Picture_10.jpeg)

**01 In Libreville,** Gabon, Sogea-Satom is reinforcing the drinking water system in the northern part of the city. Work got under way in December 2010.

**02** In Jamaica, VINCI Construction Grands Projets is renovating the drinking water distribution system in Kingston. The contract includes construction of 19 km of pipelines, renovation of two treatment plants and optimisation of system management by its subsidiary WMI.

**03** In the United States, Hydroplus (VINCI Construction Grands Projets), which specialises in fusegate systems for dams, won a new contract to upgrade safety at the Foss Dam in Massachusetts.

![](_page_43_Picture_0.jpeg)

![](_page_43_Picture_1.jpeg)

Projets and Sogea-Satom handed over the Ouargla sewer project in Algeria, for which they laid 60 km of pipelines and built 10 pumping stations. **In Jamaica,** VINCI Construction Grands Projets followed up the many hydraulic engineering projects it carried out over the last decade by winning a further contract to improve the distribution and treatment of drinking water in the capital city, Kingston – a  $\notin$ 51 million contract that includes 19 km of pipelines and the rehabilitation of two drinking water treatment stations.

Nymphea Environnement (ENTREPOSE Contracting) continued to operate in the niche market for freshwater source detection and site reconnaissance in marine environments, carrying out assignments in Haiti and French Polynesia. ■

#### WATER TREATMENT PLANTS, SEWER NETWORKS AND SYSTEMS

In France, about 15 water treatment plants were under construction or being renovated in 2010, including plants in Corbeil Essonnes, Limay, Cergy Neuville, Meaux, Pornic, Montereau Confluent, Cannes and Ajaccio. At the end of the year a contract was won for the Seine Aval plant in Achères (Greater Paris area), the largest wastewater treatment plant in France. After building a nitrification/denitrification unit there in recent years, VINCI Construction France is part of a consortium that will be rebuilding the pretreatment facilities (overall contract value: €230 million); the new plant, which will be able to treat incoming wastewater flows ranging from 5 to 70 m<sup>3</sup>/s, will be blended into its environment on the banks of the Seine by means of a planted roof. VINCI Construction France also continued the construction of a third storm basin in the Compiègne urban area and completed, in synergy with Soletanche Bachy, the underground storm basin and backflow station for the Sud Pays Basque urban community. On Reunion Island, the wastewater treatment plant construction/renovation activity held steady at a high level with the projects under way in Le Port, Saint Benoît, Sainte Rose and l'Etang Salé. A major new order was booked for the construction of the new Grand Prado plant with a population equivalent capacity of 160,000 to treat the wastewater of the municipalities of Saint Denis, Sainte Marie and Sainte Suzanne (VINCI Construction share: €40 million).

In the United Kingdom, under a new contract awarded by Thames Water for the collection of rainwater and wastewater east of London, VINCI Construction Grands Projets and Soletanche Bachy will build a 7 km tunnel *(see page 36)*, four large-dimension shafts and the equipment and automated systems necessary to manage effluents and raise them more than 80 metres. The work got under way in 2010 and is set to last until 2015.

06

**04 In Poland,** Warbud is working within a consortium to extend the capacity of the Czajka treatment plant north of the capital. Its capacity, raised to 435,000 m<sup>3</sup>/ day, i.e. a population equivalent capacity of 2.1 million, will make it the country's largest.

**05** In France, VINCI Construction France worked on construction and renovation of about 15 treatment plants including the one pictured here in Corbeil Essonnes.

**06 On Reunion Island,** Sogea Réunion, SBTPC and VINCI Environnement are building the new Grand Prado treatment plant. With a population equivalent capacity of 160,000 that can be extended to 235,000, it will treat wastewater from the municipalities of Saint Denis, Sainte Marie and Sainte Suzanne.

![](_page_44_Picture_0.jpeg)

#### Mexico

# SIX VERTICAL SHAFTS

In Mexico City, Soletanche Bachy (Soletanche Freyssinet) is taking part in the very large TEO (Tunel Emisor Oriental) outfall project, boring a 60 km tunnel at a depth ranging from 40 to 150 metres, which ends at the site where Latin America's largest water treatment plant is to be built. Cimesa, Soletanche Bachy's local subsidiary, is building six of the project's 24 vertical shafts. The shafts, with a diameter of 20 metres and a depth of between 75 and 100 metres, use diaphragm walls to a depth of 45 metres and then conventional excavation (earthworks, placement of peripheral stays, construction of the wall using fibre-reinforced shotcrete) from there to the bottom.

#### HYDRAULIC ENGINEERING

![](_page_45_Picture_1.jpeg)

![](_page_45_Picture_2.jpeg)

![](_page_45_Picture_3.jpeg)

**01 In Qatar,** VINCI Construction Grands Projets, QDVC and ENTREPOSE Contracting are building a 900,000 m<sup>3</sup>/day pumping station that will channel wastewater from the city of Doha to a treatment plant that is being built. **In Poland,** the Czajka wastewater plant extension project north of Warsaw entered the final phase in the run-up to handover in 2011. The site's capacity will be raised from 240,000 to 435,000 m<sup>3</sup>/day, i.e. a population equivalent capacity of 2.1 million. In addition to civil engineering at the plant and pipelines, Warbud is building a sludge incineration unit at the site as part of a consortium.

**In Qatar,** VINCI Construction Grands Projets, QDVC (the joint subsidiary with Qatari Diar) and ENTREPOSE Contracting continued building a 900,000 m<sup>3</sup>/day pumping station and over 45 km of pipelines to carry wastewater from Doha to a treatment plant under construction.

**In Colombia,** where Soletanche Bachy introduced urban area TBM tunnelling in 2000, the company completed the construction of a 9.4 km long, 3.75 metre diameter sewer collector

**02** In Colombia, Soletanche Bachy Cimas is building a 9.4 km sewer collector in Bogota and 16 connection shafts. The tunnelling machine was built by CSM Bessac (a Soletanche Bachy subsidiary), which is also taking part in the works. main in Bogota (the Interceptor Fucha Tunjuelo) and continued construction of a similar structure (10 km Interceptor Tunjuelo Bajo, with diameters of 0.60, 1.60, 2.20 and 2.45 metres). The two contracts have a combined value of €105 million. In Mexico, Soletanche Bachy continued the construction of six shafts for the TEO outfall in Mexico City *(see opposite).* ■

#### Environment

## FROM CIVIL ENGINEERING TO SERVICES

**VINCI Construction France's Environment** business line develops integrated water treatment products and services. The companies belonging to it carry out civil engineering for treatment plants and also implement a wide variety of processes (biological treatment, membrane filtration, sludge treatment, etc.) with their specialised partners. They also operate facilities. The same approach applies to waste treatment, where the Environment business line implements a range of processes (thermal, biological, fume treatment, etc.). VINCI **Construction France is building the** new waste treatment plant in Morsbach including rollout of the biogas and compost production process (Kompass process).

![](_page_45_Picture_13.jpeg)

#### MAIN VINCI CONSTRUCTION COMPANIES

	SUBSIDIARIES	FRANCE	EUROPE	AFRICA	AMERICAS	ASIA	OCEANIA
А	Arbonis						
В	Bateg						
	Botte Fondations						
С	Campenon Bernard Construction						
	Chantiers Modernes						
	CMP Dunkerque						
	Cofor						
	Conren						
D	Dodin Campenon Bernard						
	Dodin Guadeloupe						
	Dumez						
	Dumez-GTM Calédonie						
Е	EMCC						
	ENTREPOSE Contracting						
	ENTREPOSE Services						
F	Freyssinet						
G	GEOCEAN						
	Getelec						
	Groupe CFE						
	Groupe DEME						
	GTM Bâtiment						
	GTM Guadeloupe						
J	John Jones (Excavation)						
L	Lainé Delau						
	Les Travaux du Midi						

	SUBSIDIARIES	FRANCE	EUROPE	AFRICA	AMERICAS	ASIA	OCEANIA
M	Menard	1.1					
Ν	Nofrayane						
	Nuvia						
Ρ	Petit						
	Prumstav-FCC						
Q	QDVC (Qatar)						
S	SBTPC						
	Sicra						
	SIMP						
	SMP CZ						
	Sogea						
_	Sogea (Antilles)						
	Sogea-Satom						
	Soletanche Bachy						
	Soletanche Freyssinet						
	SPIECAPAG						
Т	Taylor Woodrow						
	Terre Armee						
V	VINCI Construction Terrassement						
	VINCI Construction France						
	VINCI Construction Grands Projets						
	VINCI Construction UK						
	VINCI Environnement						
	VINCI Networks						
$\mathbb{W}$	Warbud						

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PAGES 18-19: Lagny-sur-Marne hospital, Seine-et-Marne, France. – PAGES 28-29: Phu My bridge, Vietnam. PAGES 40-41: Czajka wastewater treatment plant, Poland.

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![](_page_49_Picture_1.jpeg)