



LNG & LPG TERMINALS



LNG & LPG TANKS



40 YEARS EXPERIENCE IN EPC CONTRACTS FOR LNG & LPG PROJECTS

Our dedicated division within **VINCI Construction Grands Projets** efficiently coordinates the resources of the VINCI group in one project team to satisfy Oil & Gas companies' needs. Thanks to our **multidisciplinary skills and technical expertise**, we are the partner you need to **secure the delivery** of your EPC projects.

ENGINEERING:

Our engineering division participates in the development of all major engineering projects, **from defining initial specifications to final commissioning**. Throughout the design process, we **analyse each decision and its impact** on every aspect of the project.

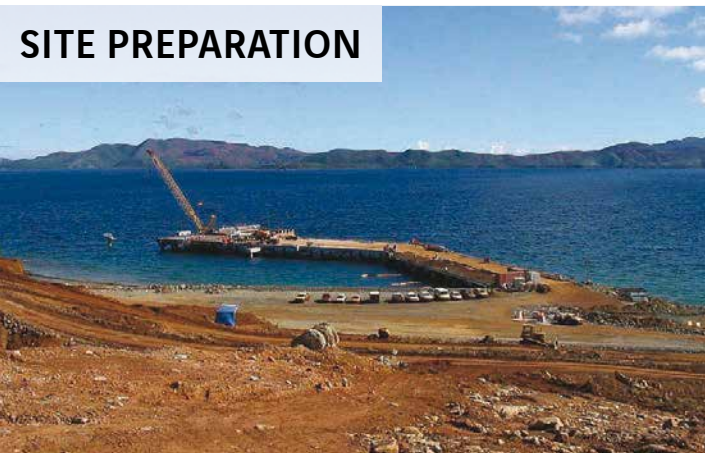
PROCUREMENT:

We **proactively manage supplies and logistics** as a key factor to meet the project's schedule. Our extensive international experience enables us to operate **in very challenging environments**, such as remote locations and extreme climates.

CONSTRUCTION:

We provide **in-house world-class project management teams**, committed to provide a **safe working environment** while meeting the client's expectations. Focusing on our values, we implement **win-win partnerships with local companies and communities**.

SITE PREPARATION



MARINE WORKS





Wheatstone Project (Western Australia)



Yamal (North Siberia, Russia)



Costa Azul (Mexico)



Skikda (Algeria)

OUR CORPORATE SOCIAL RESPONSIBILITY & SUSTAINABLE DEVELOPMENT POLICY



The **Safety First** policy applies to **everyone within the organization**, at every level, to ensure that worksites remain safe and that each and every person's well-being is respected. Safety is also a source of progress, as it fosters work quality and contributes to our know-how, experience and competence.

Since 2012, **Skill up** has operated as a **mobile training school for workers around the world**. Project managers identify tasks on which local workers need to be trained (knowledge and skills), in order to achieve our quality and safety criteria.

- 697 workers attended Skill up training (on site).
- 12 Skill up trainers.



VINCI is committed to protecting the environment at its worksites through the protection of natural sites, plants and wildlife on all its worksites, active pollution prevention, improvement to the comfort level of neighboring populations, better communication with stakeholders, and more.

VINCI signed on with the principles of the Global Compact in April 2003 (a UN initiative). The company is committed to respecting the 10 principles of the Global Compact, in the areas of human and labor rights, environmental protection, and anti-corruption efforts.

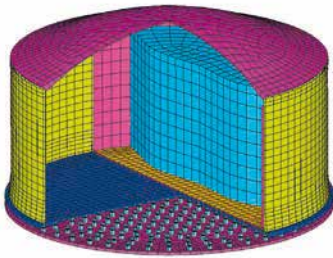
VINCI Construction Grands Projets is certified:



Ras Laffan (Qatar)

OUR IN-HOUSE ENGINEERING **CREATES** A RELIABLE AND OPTIMIZED **SOLUTION** ADAPTED TO VARIOUS AND DIFFICULT PROJECT CONDITIONS

For each project, our **internal design office** conducts basic and detailed design for LNG & LPG tanks and marine works. We have capitalized **an exceptional know-how from FEED to execution**, which enables us to perform an efficient construction-oriented design.

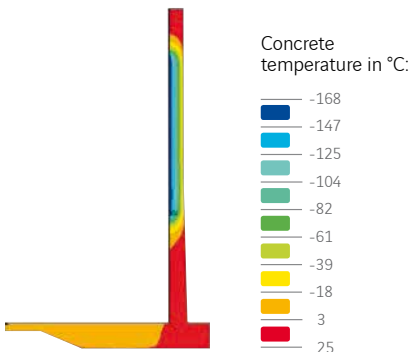


3D modelization with "Pendulum" foundation system

- Design adapted to all international technical standards.
- Solutions for **high seismic activity** such as base isolation and anti-liquefaction soil treatment.
- **Foundation solutions for any type of soil conditions**, with experience of both deep and shallow systems.
- **Construction methodologies adapted to the project's constraints**, with experience of modularization to reduce the schedule, **warm weather** concreting in the desert (**beyond +40°C**), **self-climbing formwork** for a hurricane-sensitive area with **scarce labor**, **sliding formwork** and **cold weather** concreting in arctic conditions (**down to -45°C**).

SiD - SAFETY IN DESIGN

Safety is driving the design and construction methodology from the beginning of the engineering phase



Thermal analysis in a LNG spillage case

Our main fields of expertise:

- **Structural** engineering: linear, non-linear and dynamic analyses.
- **Geotechnical** engineering: soil survey definition and interpretation, conceptual and detailed design for foundations, earthworks, soil improvement, hydrogeology, etc.
- **Concrete**: project requirements, supplier specifications, material selection, batching plant definition, mix design, testing, production monitoring, training.

Using dedicated software such as: RM 2006, CESAR-LCPC, RGB/ICW, GP 3D, PLAXIS, SOFISTIK, HERCULE, LS DYNA, ANSYS, RIDO, TALREN, EFFEL.



Innovative pile design in the permafrost

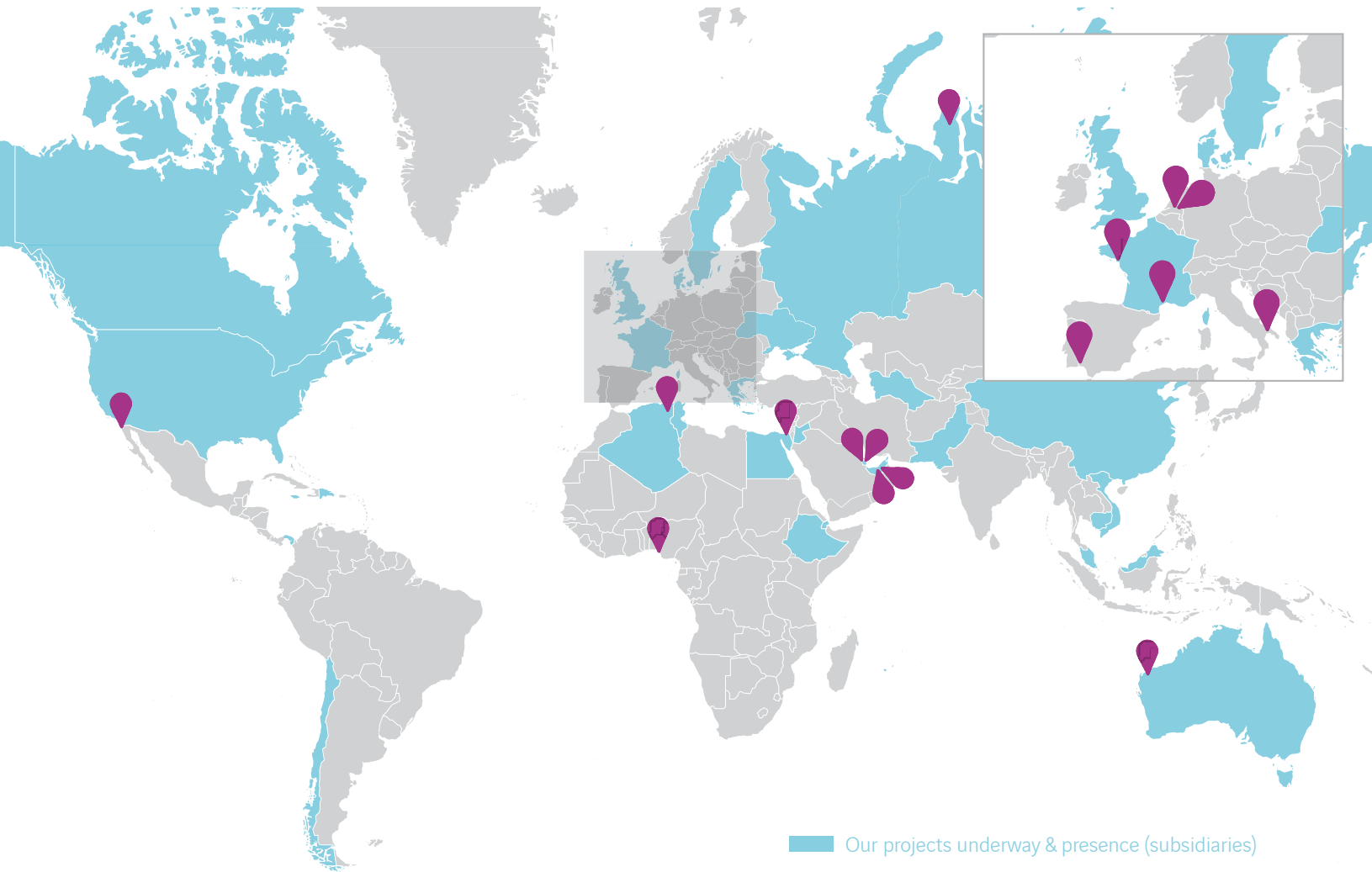


Self-climbing formwork in remote warm region




Wall slip-forming in arctic "summer"

WORLDWIDE PRESENCE OF VINCI CONSTRUCTION GRANDS PROJETS AND REFERENCES IN THE LNG & LPG SECTOR



 Our projects underway & presence (subsidiaries)

 LNG & LPG sector: projects underway & references*

In Europe

Rotterdam (The Netherlands, 2007-2011)*
 Brindisi (Italy, 2005-2008)*
 Huelva 2 (Spain, 1990-1991)*
 Montoir de Bretagne (France, 1981-1983)*
 Terneuzen (The Netherlands, 1980-1982)*
 Fos-sur-Mer (France, 1976-1978)*

Around the world

Yamal (Russia, from 2013)
 Wheatstone (Australia, from 2012)
 Skikda (Algeria, 2008-2012)*
 Costa Azul (Mexico, 2005-2007)*
 Ras Laffan (Qatar, 2004-2007)*

Idku (Egypt, 2002-2005)*
 Bonny Island (Nigeria, 1996-1999)*
 Ras Laffan (Qatar, 1995-2000)*
 Das Island (United Arab Emirates, 1982-1986)*
 Ruwais (United Arab Emirates, 1979-1981)*

VINCI Construction Grands Projets

LNG Department
 5, cours Ferdinand-de-Lesseps - 92851 Rueil-Malmaison Cedex, France
 Phone: (+33) 1 47 16 38 44
 E-mail: lng@vinci-construction.com

www.vinci-construction-projects.com



GRANDS PROJETS