

Environmental Solutions by VINCI

Environmental impact: measuring for better performance





Measuring impact: a dual challenge for VINCI

The notion of impact lies at the heart of the VINCI 2024 Environment Awards, which recognise projects that **positively influence our business performance** and **actively contribute to the environmental transition**. We want our businesses and our achievements to have a positive impact on society; we want to contribute in a meaningful way.

However, understanding our environmental impact begins with measuring our footprint and our interactions with the environment, **to understand and to limit negative effects** on resources, air, water, soil and ecosystems.

These two dimensions are complementary.

We must both **reduce the negative impact** of our activities and projects, in a spirit of respect for the environment; and **maximise the positive impact** of our actions to promote environmental transition.

VINCI's environmental ambitions must be implemented as close to local operations as possible,

first and foremost to adapt to the local environmental context, but also to capitalise on our expertise and build with our local stakeholders.

There is no single answer to the environmental question. Achieving sustainable development is all about finding the right balance, reflected in VINCI's overall performance – economic, social, and environmental.

But everyone must be equipped to make informed choices. That's why **measuring impact is essential** – even when the issue is complex or the data involves some uncertainty.

For a positive impact!

Together, let's work for a sustainable world!

**Isabelle Spiegel,
Global Head of Environment,
VINCI**

Measuring, yes, but how?

Given the complexity and interconnectedness of environmental issues, and the proliferation of reference frameworks, how can we ensure that we're making the right decisions? As a major player in the infrastructure sector, VINCI strives to adopt a tangible and credible approach to impact measurement, contributing to the development of methodologies adapted to the complexity of its activities.

The complexity of environmental measurement

While climate change has consequences at a global level, this is not the case for other environmental issues, which have repercussions primarily at a local level.

Moreover, not all of these can be measured.

Greenhouse gas emissions can be calculated. The GhG Protocol, established at international level over 25 years ago, provides a standardised approach to measuring carbon footprints. The concepts of scopes 1, 2 and 3 have become widely accepted, although there are still several possible interpretations.

This is not the case for other environmental impacts, where the **extent depends on local environmental sensitivity**. While indicators do exist, they are assessed using **varying methods** and remain subject to ongoing methodological refinement or adaptation.

For example, **for the impact on biodiversity, several categories of measurement indicators exist:**

- those that enable a diagnosis to be made, based on the sensitivity of environments or dependence on nature;
- those that measure actions that reduce pressures on biodiversity (such as soil artificialisation);
- and those measuring the ecosystem services provided.

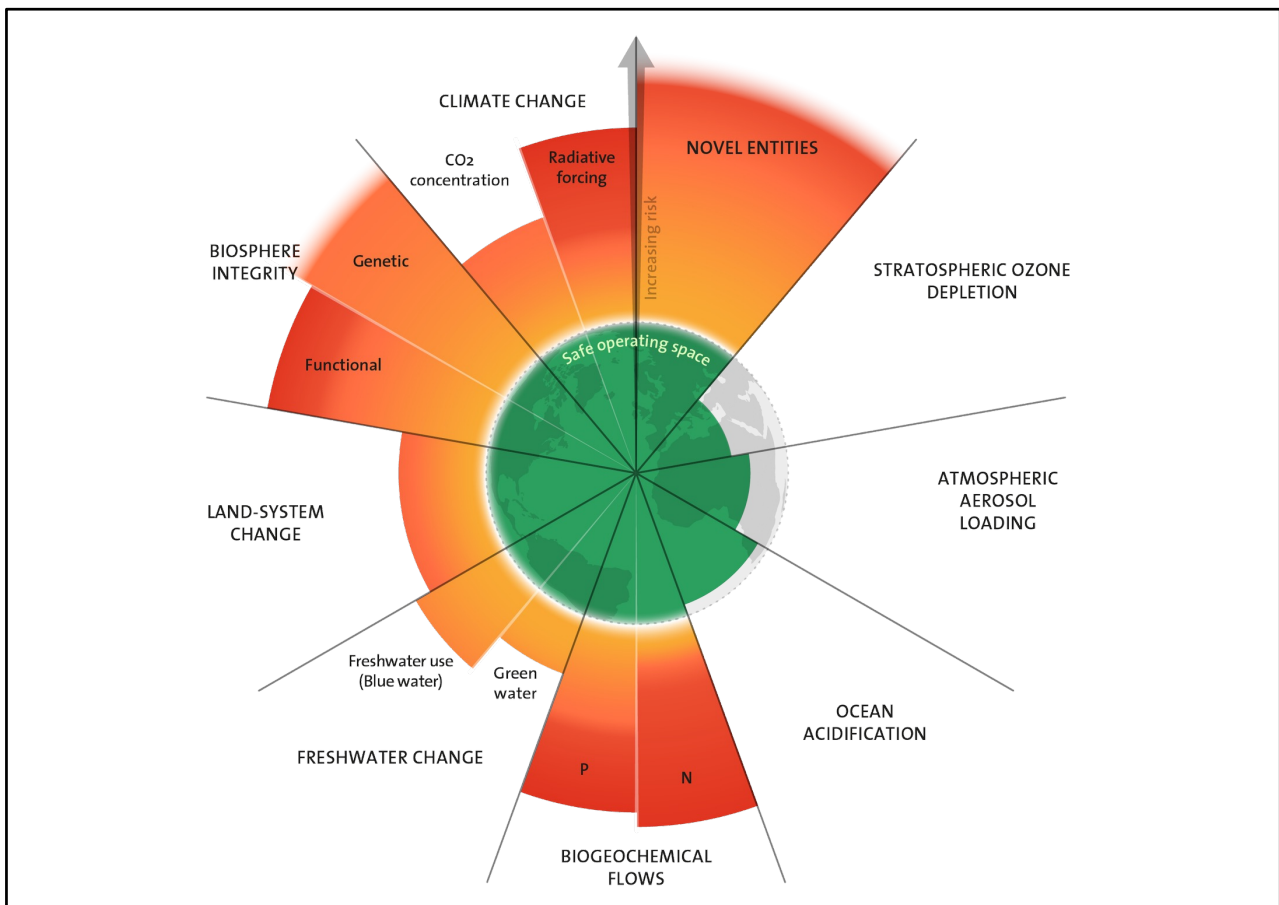
This complexity – which stems from the absence of a single solution and **the need to strike a balance in applying sustainable development principles** – does not, fortunately, prevent progress in measuring environmental impact.

The fundamental principles of impact measurement

Impact assessment is based on a number of key principles.

First and foremost, the scientific approach: any assessment must be based on rigorous scientific data. VINCI relies in particular on the concepts of planetary limits and the carbon budget set out in the IPCC reports.

Secondly, pragmatism: recognising the uncertainties and the complexity of carrying out a systematic detailed assessment, VINCI follows an iterative approach, using orders of magnitude, aware of the associated uncertainties, and progressively refining the data and measurements.



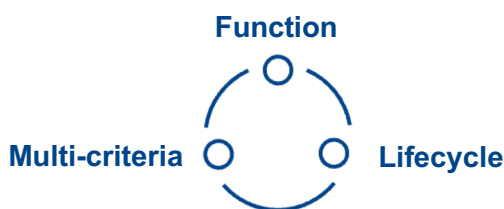
Global limits and their exceedance in 2023 (source: Stockholm Resilience Centre). The dotted circle represents the estimated sustainability limits and the coloured areas the estimated status at the end of 2023, with orange representing an overshoot.

Assessment methodologies: life cycle assessment and carbon accounting

When it comes to measuring an environmental footprint, it is vital to use the life cycle approach, through **life cycle assessment**, or to adopt a simplified approach focusing on climate issues with **carbon footprinting**.

Life cycle assessment (LCA) is a framework based on ISO standards for **assessing the potential impact of a product or service on the environment**. It takes into account the extraction of raw materials, production, use and end-of-life. LCA provides an overall view of the environmental impact and identifies possible ways of improving or even reducing this impact.

The carbon footprint focuses on greenhouse gas emissions. Established by the *Greenhouse Gas Protocol*, it quantifies an organisation's direct and indirect emissions – known as scopes 1, 2 and 3. This tool is essential for defining a strategy or levers for reducing greenhouse gas emissions, expressed in CO₂ equivalent.



THE THREE FUNDAMENTAL PRINCIPLES OF LCA

1. Function: analysis is broken down into a “functional unit”. This enables the comparison of several alternatives that fulfil this function.

2. Life cycle: impacts are analysed not just at one level of responsibility, but across the entire value chain.

3. Multicriteria: a large panel of environmental issues are covered, from resources to emissions into the air, water, soil, etc.



VINCI, measuring its impact

VINCI has taken the subject of impact measurement head on. Using a multi-criteria methodology, the Group assesses and adjusts its interventions to transform its actions and activities into levers for sustainable change.

The role of infrastructure

As an investor, builder and operator of buildings and infrastructure, VINCI is a major player in the transformation of towns and cities. The Group's ambition is to make a difference through its expertise and its methods, on a day-to-day basis and over the long term. Because our projects have a major impact on cities, regions and the quality of life of their inhabitants, **the Group strives for overall performance that is technical, economic, environmental and societal.**

VINCI's global performance approach is based on two complementary principles. The first is to **reduce the environmental impact of projects** and to optimise the socio-economic impact of the Group's activities on local communities and regions over the long term. The second is to **co-design, in conjunction**

with the stakeholders in its activities, the most effective public utility solutions in a resource-constrained economy.

Adopting this global performance approach is all the more necessary given that the uses associated with infrastructures in France represent around **325 million tonnes of CO₂ equivalent per year (i.e. 50% of France's carbon footprint)**,¹ and that the design, construction and maintenance by public works companies represent around **22.9 million tonnes of CO₂ equivalent per year, i.e. 3.5% of total emissions.**

¹ The role of infrastructure in France's low-carbon transition and adaptation to climate change – Summary, Carbone 4, 2021.



A SIGNIFICANT SOCIO-ECONOMIC FOOTPRINT

VINCI plays a key role in the French economy. The Group supports 462,000 jobs – or 1.6% of national employment – and pays €4.9 billion in tax and social security contributions. It thus represents 1.5% of the national GDP. Each job created by VINCI generates around 3.8 additional jobs in the local economy, demonstrating the impact of its activities on the country's socio-economic fabric.

At regional level, VINCI contributes to economic development and social cohesion, by promoting purchasing in France and from VSE/SMEs (Very Small Enterprises and Small and Medium-Sized Enterprises), as well as social enterprises. VINCI makes 95% of its purchases in France from French suppliers, including 48% from VSEs/SMEs, representing a total of €16 billion in purchases from French suppliers.



1.6%

This is the proportion of national jobs supported by VINCI.



x 4,8

Each VINCI employee supports 3.8 jobs in the local economy.

An innovative methodology for measuring impact

As part of the Environment Awards, VINCI has developed a **multi-criteria impact analysis methodology** to quantify the emissions reduced or avoided by each of the solutions (proposed by VINCI teams and subsidiaries) and their projected impact potential over three years. The method enables us to **assess environmental impact in the same way as economic potential**. The aim is to inform strategic decisions and deploy the solutions that make the greatest contribution to the Group's environmental ambitions.

The methodology is based on a **simplified life cycle analysis**, assessing the impact of solutions according to specific quantitative indicators. It was developed with the support of a scientific committee made up of environmental, financial and scientific experts.

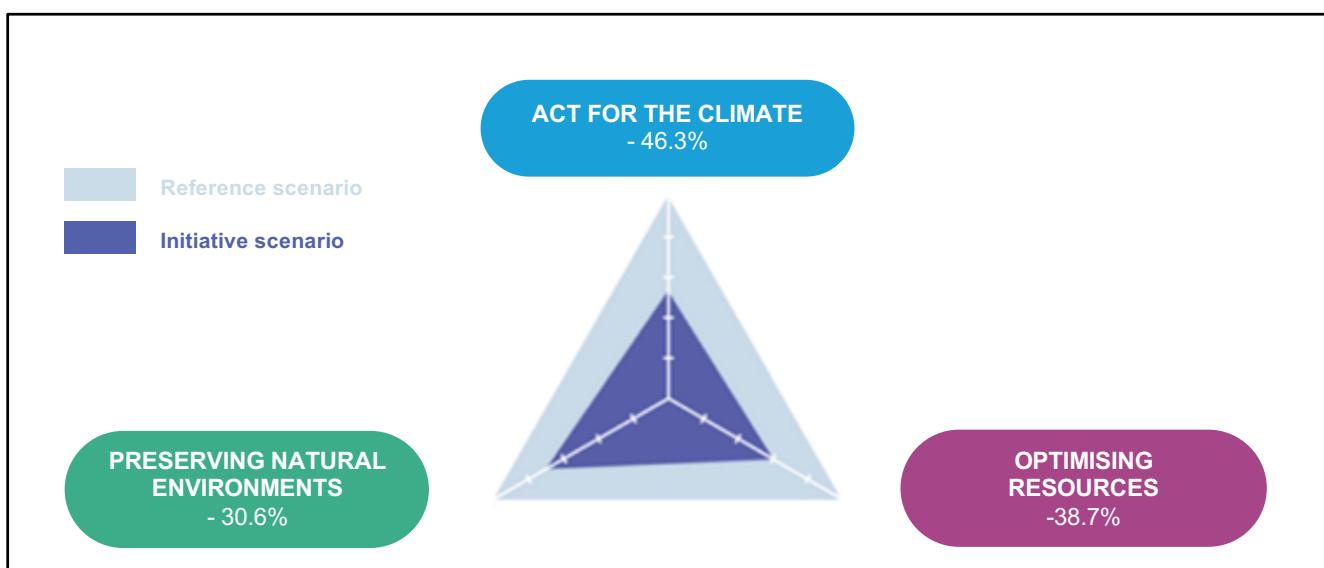
Simplified LCA at every stage of the Environmental Awards

The life cycle approach is adopted at each stage of the selection process, firstly on a declarative basis, and then with a simplified LCA carried out in the same way for all the finalist projects.

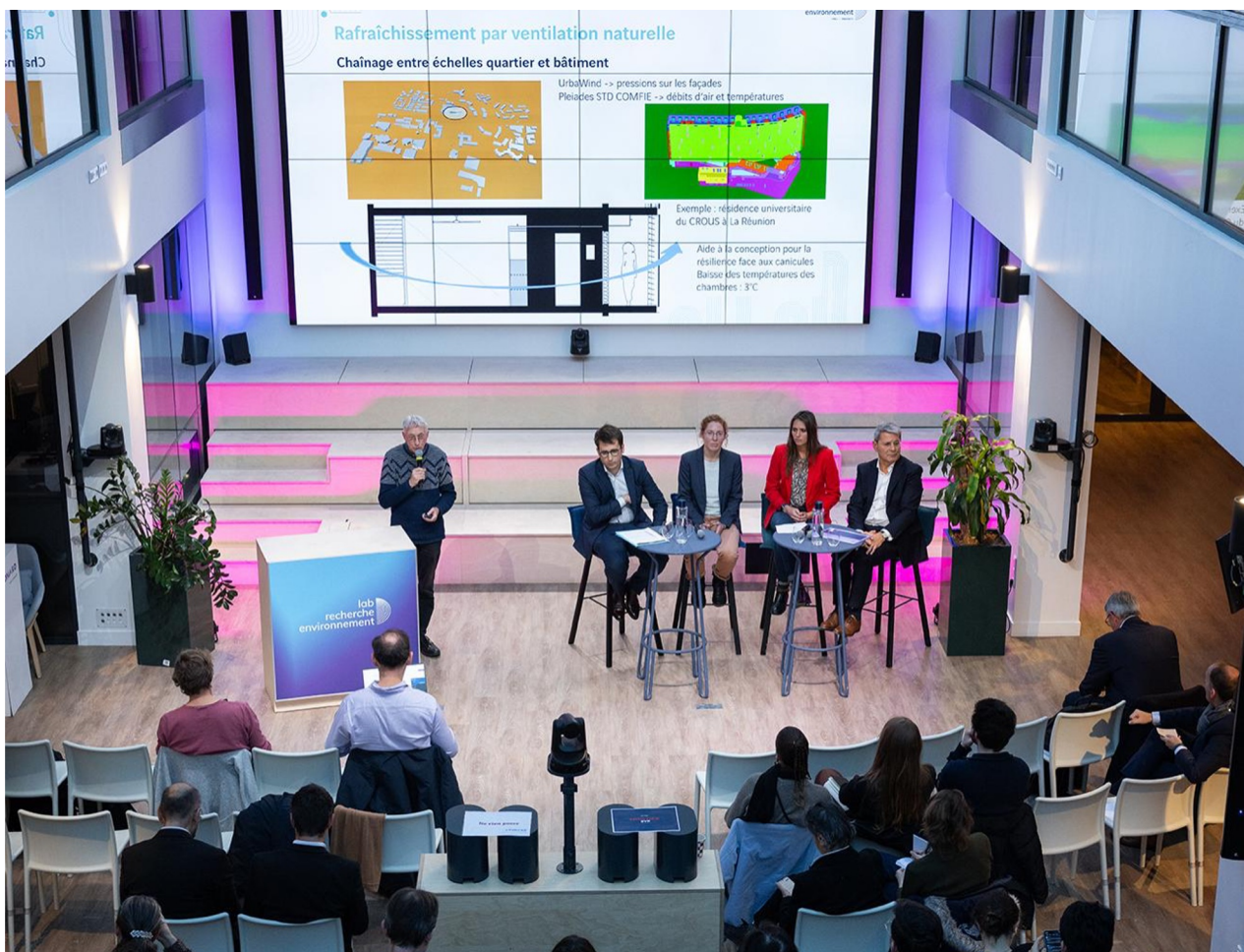
1. Submission of entries: To be eligible for the Environment Award, the solution had to include a carbon footprint, and, as a minimum, a qualitative assessment of the project's other impacts. Candidates who wished to do so could provide quantitative information on all environmental impacts.

2. Expertise in the regional phase: 800 regional experts were trained to assess the solutions according to their environmental impact. Without resorting to a detailed systematic LCA, the assessment was based on orders of magnitude of impact, so as to be able to position the solutions in relation to each other. For example: 1 m³ of conventional concrete is equivalent to 300 kg of CO₂, the construction of a detached house is equivalent to 100 tonnes of CO₂, etc.

3. Measuring environmental impact in the final phase: An in-depth analysis of the 50 projects selected was carried out in the final phase, in a uniform manner for each of the projects. The initial methodology, based on a simplified LCA, was developed in 2021 by consultants (Quantis-BCG then I Care-Bearing Point since 2024). The results of this analysis are presented for each pillar of VINCI's environmental ambition, for the solution assessed, in comparison with a reference scenario.



The results of the impact analysis for each project are presented according to each pillar of VINCI's environmental ambition, in comparison with a reference scenario.



University 2023 Environmental Research Lab.

"Now indispensable at project or organisational level, LCA enables solution providers to identify the right levers for action while providing the expected service."

MAXIME TROCMÉ,

Director of R&D deployment
- Leader, environmental research
lab VINCI ParisTech

FOCUS ON THE LAB RECHERCHE ENVIRONNEMENT

Created in 2008 and dedicated to environmental impact assessment, the lab recherche environnement (environment research lab) was born of a partnership between VINCI and three engineering schools: AgroParisTech, Ecole des Mines Paris-PSL and Ecole nationale des ponts et chaussées. Its teams design tools to reduce the environmental impact of buildings, neighbourhoods and infrastructure, using VINCI projects as testing grounds. They address four key areas of eco-design: LCA of neighbourhoods, biodiversity, energy efficiency and sustainable mobility.

SOME CONCRETE EXAMPLES OF PROJECTS ANALYSED



Exegy® – VINCI Construction

Concept:

Low-carbon concrete construction solutions to reduce the carbon footprint of construction. 2030 target: 90% low-carbon concrete on VINCI Construction sites.

Value proposition:

Introduced by VINCI Construction, this low-carbon concrete solution makes it possible, thanks to its formulations, to reduce CO₂ emissions by up to 60% compared with traditional concretes. This solution also offers equivalent resistance and durability properties, at similar costs. Exegy® was used in the construction of archipel, VINCI's head office in Nanterre, as well as Universeine – Athletes' Village in Saint-Denis and a new hospital in Nantes.

Key figures:

Across the 20 emblematic sites deployed since 2021, in France and abroad, 28,924 tonnes of CO₂ equivalent were reduced or avoided, and the consumption of 103,974 m³ of water was prevented.



Revilo® – VINCI Construction

Concept:

An urban development solution in response to heat islands.

Value proposition :

Developed by VINCI Construction, the Revilo® offer responds to and plays a concrete part in cities' adaptation strategies to combat climate change. The offer uses 4 levers to cool cities: increasing vegetation, managing water on a parcel-by-parcel basis, rebuilding living, fertile soils and using light-coloured road surfaces. In France, urban cooling island projects have been carried out in Bordeaux, Toulon, Nice, Bergerac and Paris.

Key figures:

Difference between the initial and final project conducted at the Place Goiran in Nice, France:

- green spaces increased from 21% to 25%;
- habitat diversity increased from 58% to 73%.

(Results calculated using the Biodi(V)strict tool. Learn more about the tool at: <https://urbalia.fr/vinci/loutil-biodivstrict/>)



Motorway maintenance – VINCI Autoroutes

Concept:

Reduction of the impact of motorway maintenance, by optimising recycling rates while reducing the carbon footprint.

Value proposition:

Thanks to an eco-designed plant located close to motorway maintenance sites, the recycling and reuse of asphalt off-cuts can be maximised by between 35% and 70%. This reduces the need for transport, while using bio-sourced fuels. Between 2022 and 2024, 12 motorway maintenance projects were carried out in France, with an average recycling rate of 46%.

Key figures:

For 6 sections totalling 120 km of motorway on the A20, A28, A68 and A89:

- 24,625 tonnes of CO₂ were reduced and avoided;
- 224,800 tonnes of materials were recycled;
- 203,990 m³ of water not consumed.



Wave Platform – VINCI Energies

Concept:

A solution for managing the energy efficiency of buildings.

Value proposition:

Deployed in 2023, the Wave Platform web application makes it possible to visualise each of a building's components and to analyse their individual consumption – making it possible to optimise consumption, in particular by detecting malfunctions.

Around 700 of VINCI Energies France's buildings are monitored by this solution, which provides a strategic lever for implementing energy-saving measures.

Key figures:

Installing a Building Management System (BMS) can save between 15% and 30% of a building's energy costs.



SunMind – VINCI Concessions

Concept:

Make access to solar technologies a reality.

Value proposition :

SunMind, a subsidiary of VINCI Concessions, is developing solar self-consumption projects, at injection or via long-term power purchase agreements (off-site PPA). 6 installations with a capacity of 25 megawatt-peak have been deployed in France and Portugal.

Key figures:

Of the 6 projects to be deployed by 2024, with a photovoltaic output of 25.6 MWp, 3,136 tonnes of CO₂ equivalent will be avoided and the consumption of 67,651 m³ of water will be prevented.

What's next?

From measuring to reduce, to making a positive contribution

We're measuring our impacts to better reduce them – but also to identify opportunities for environmental innovation.

To factor the measurement of environmental impact into its decisions, VINCI is proposing **real advances on the development and adaptation of measurement methods**. However, there is still a long way to go before each project, solution or entity can be assessed in a consistent, credible and recognised way. Subjects like climate change adaptation, circularity and biodiversity are still being researched at academic level. The Group is continuing its **efforts to develop methodologies for measuring its overall performance**. Given the proliferation of benchmarks and initiatives, our approach is pragmatic and selective.

The example of scope 3 offers a good illustration. Around 50% of scope 3 emissions are calculated from activity data, making it possible to monitor the implementation of 10 to 12 specific actions. The other half is based on monetary ratios, using purchasing data. The aim is to be able to **extend this approach to the entire value chain**, in collaboration with partners and suppliers.

The Group's ambition is to **move from a “do less harm” approach** (or reduce negative impacts) **to a “do more good” approach** (to make a positive contribution). This involves taking into account positive contributions to society, integrating positive impact criteria into project evaluation and developing innovative solutions that have a beneficial effect on the environment and society.

More than ever, VINCI is committed to a global impact measurement approach. This approach helps guide the Group's strategic and operational decisions and actively contributes to building a more sustainable future.



The series *Environmental Solutions by VINCI* deciphers the challenges of environmental transition and highlights VINCI's point of view and the solutions implemented within the Group to help improve living spaces, infrastructure and mobility.

These documents embody the Group's determination to put action at the heart of the rollout of its environmental ambition based on three priorities: acting for the climate, optimising resources through the circular economy and preserving natural environments.

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1973, boulevard de La Défense
CS 10268
92757 Nanterre Cedex – France
Tél. : +33 1 57 98 61 00
www.vinci.com



VINCI.Group



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