CLIMATE, RESOURCES, NATURAL ENVIRONMENTS

LOCAL SOLUTIONS, GLOBAL IMPACT

APRIL 2025


VINCI
AUTOROUTES

LOCAL SOLUTIONS GLOBAL IMPACT

VINCI plays an active role in powering the environmental transition of the living environment, infrastructures and mobility.

Its pathway to achieve net zero by 2050 is reflected in a number of commitments, such as reducing its direct greenhouse gas emissions by 40% and its indirect emissions by 20% by 2030 by taking action across the entire value chain of the Group's businesses.

As part of this drive and in an effort to address the challenges raised by the climate and environmental emergency, VINCI launched the Environment Awards in 2021, enabling its more than 4,200 business units to work together in developing best practices across the Group's business lines.

IMPACT was chosen as the overriding theme for the second edition of this major internal competition, namely the impact of the Group's positive contribution towards the environmental transition through the solutions developed within its business units.

In all, no fewer than 1,000 emerging or tried-and-tested solutions were entered in the competition. All solutions responded to one of the six main challenges that the VINCI Group has chosen to highlight: mitigation, climate change adaptation, new materials, reuse and recycling, water, and ecological restoration.

These challenges are consistent with the three **pillars of VINCI's environmental ambition: act for the climate, optimise resources through the circular economy, and preserve natural environments.**

Other criteria were taken into account when assessing the solutions, such as the extent of their environmental impact, their business potential and their ability to be replicated in other geographic areas and markets.

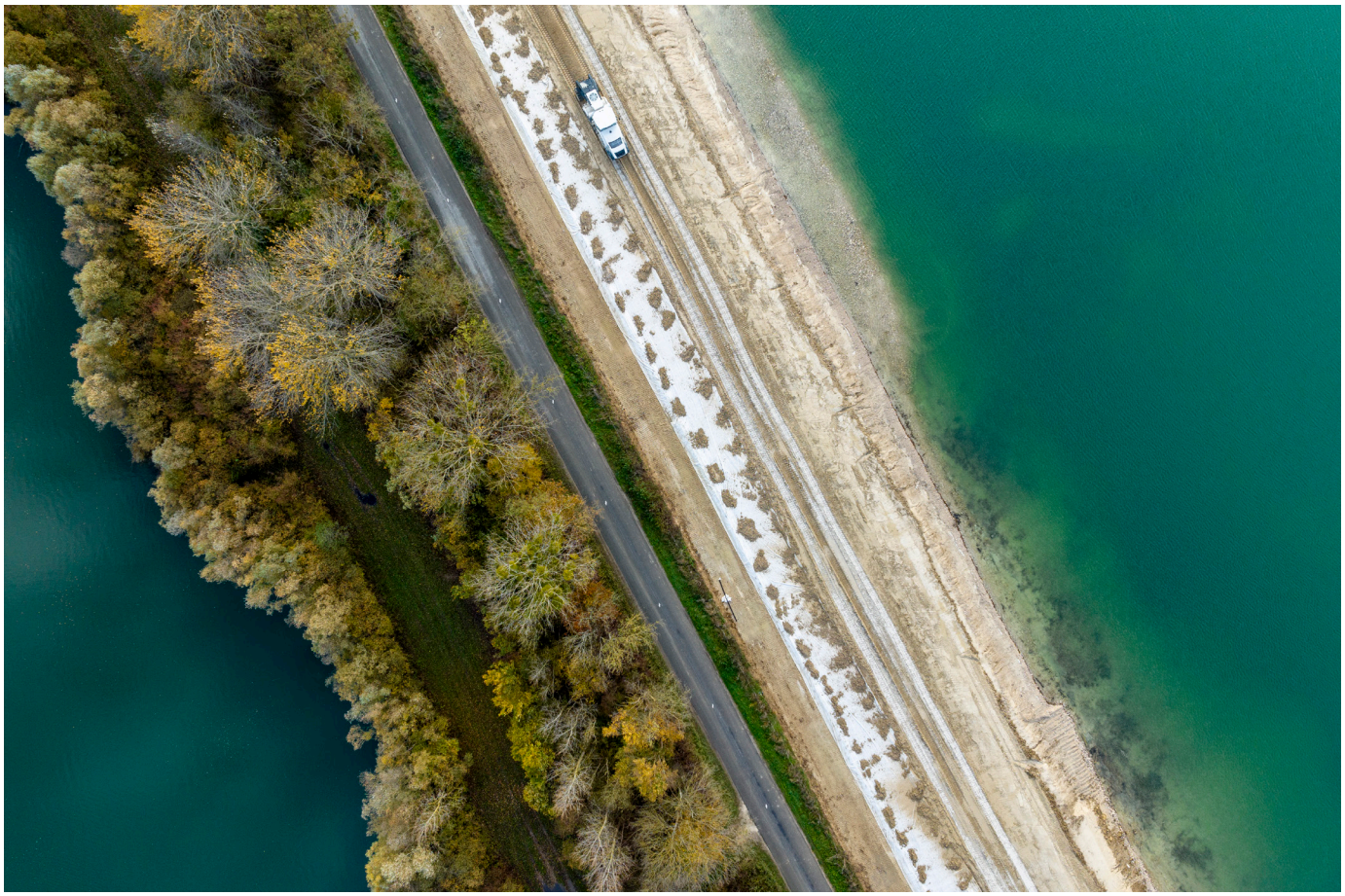
Once the Awards have been attributed, the winning solutions receive a comprehensive support programme from the Group (in partnership with Leonard, VINCI's foresight and innovation platform), including project and financial management guidance, mentoring to improve the product's strategic positioning in the value chain, and assistance in measuring the project's environmental impact.

They share the same objective of forging a sustainable world.

Discover the awarded solutions of the VINCI 2024 Environment Awards, presented at ChangeNOW and detailed in the following pages.

ADAPTATION

In response to the ecological emergency, VINCI's activities are driving the transformation of living environments, infrastructures, and mobility.
Our teams are experimenting with and implementing adaptation solutions to enhance the resilience of cities and regions.



Development of the La Bassée site in Châtenay-sur-Seine (France), to protect the area from flooding by the Seine using Equo Vivo, a VINCI Construction solution for ecological development projects.

Revilo®

Urban planning solution in response to heat islands

ISSUES IDENTIFIED

Cities are on the front line when it comes to climate change, meaning that they need to address several challenges:

- Urban cooling: inner-city temperatures are rising considerably as a result of climate change. In Marseille, ground surface temperatures could reach 90°C by 2050[1].
- Rainwater management: rainwater events continue to strike with greater frequency and intensity, which has the effect of saturating drainage networks due to the growing number of impermeable surfaces in urban areas, thereby increasing the risk of flooding and waterway pollution.
- The need to bring nature back into the city: most French people (92%) feel that there is a lack of nature in the city, and 53% think that nature should be more integrated into the very heart of tomorrow's cities[2].

VALUE PROPOSITION

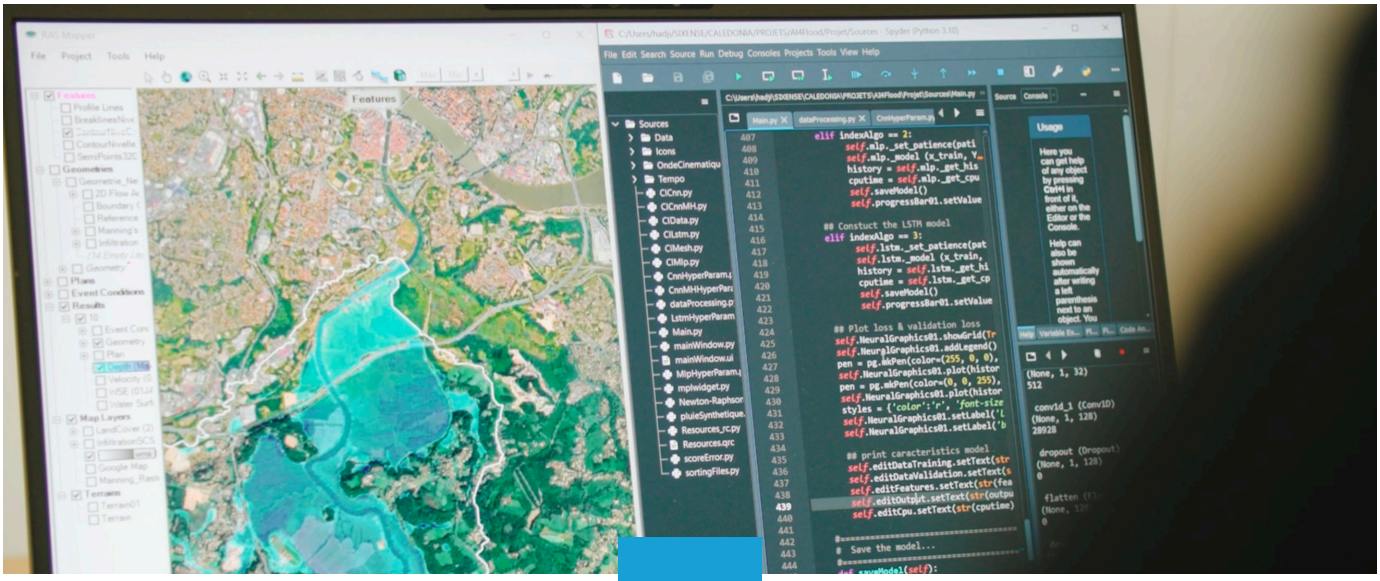
The Revilo® urban planning solution is based on four cornerstones to deliver a comprehensive response to the challenges of urban cooling:

- Rainwater management: store more water from regular rainfall, divide road areas to channel water towards infiltration ditches, and create reservoirs in plant-covered areas.
- Choice of surfacing: light, permeable surfaces for pedestrians and light vehicles to allow rainwater to soak away and reduce heat islands.
- Green space management: use roads and verges to support green spaces, and create planted areas set back with water reservoirs.
- Reconstitute management: amended soil and earth from demolition waste and organic waste to recreate fertile land through short supply chains.

The solution is aimed at local councils and their urban planning departments, and includes an initial explanation stage so that appropriate calls for tenders can be published with support from the project owner and urban services. This flagship project has been in operation since July 2024.

VINCI Construction

1 according to an independent study carried out in 2021 by Inddigo.
2 ibid.



CaledonIA

Fast software to anticipate and predict flood-prone areas due to runoff and rising waters

ISSUES IDENTIFIED

Fuelled by climate change, rain events are occurring more frequently with ever greater intensity.

Therefore, public authorities and asset managers need accurate intel on the potential impact of flooding so that they can take quick responsive action, limit any damage caused to property, keep people safe and adapt infrastructures.

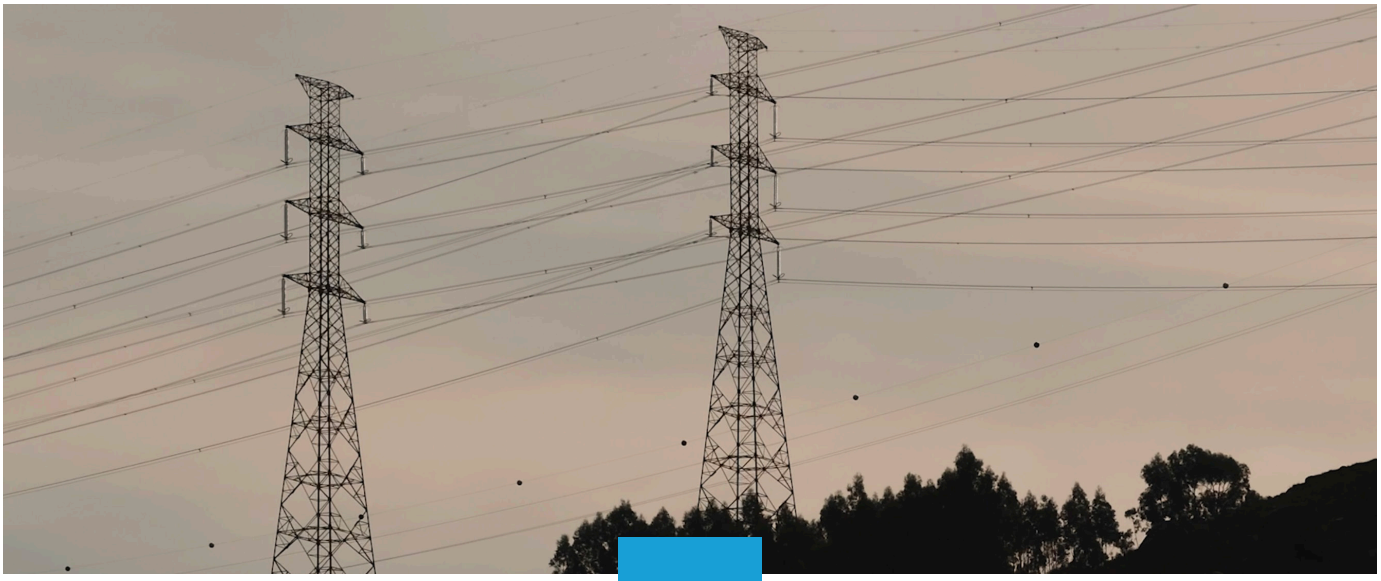
VALUE PROPOSITION

CaledonIA models water flow patterns by combining physical models and artificial intelligence (AI):

- Prior analysis of data from the IGN's digital terrain models (French National Institute of Geographic and Forest Information) and rainfall forecasts from Météo France.
- 2D dynamic modelling and visualisation of zones subject to flooding (flooding depth and duration) and erosion.
- Combined with a neural network to calculate the foreseeable impacts of a sudden downpour on a previously modelled area in near real time.
- Fast simulations of adaptation solutions to strengthen the resilience of the affected infrastructures (motorways, etc.).

VINCI Autoroutes

VINCI Construction



Wildfires prevention

Prevent wildfires caused by contact between vegetation and medium-voltage lines

ISSUES IDENTIFIED

Operators of large linear infrastructures (medium-voltage powerlines) need to be capable of quickly detecting wildfires with the aim of:

- Reducing operating losses
- Minimising restoration costs
- Avoiding criminal prosecution
- Increasing the infrastructure's acceptability

Between 2001 and 2022, 7% of wildfires in Portugal were caused by powerlines, representing over 100,000 hectares burnt in the space of 22 years. In the aftermath of a fatal fire, the Portuguese distribution network operator (GRD) was taken to court and had to come up with solutions.

VALUE PROPOSITION

By detecting power faults in medium-voltage electric transport networks at the substation level, the solution helps prevent wildfires.

These faults are caused by contact between overhead lines and tree branches or conductive materials that have fallen to the ground, which creates the risk of a wildfire during low-humidity and windy conditions.

A high-impedance fault detection system is used with statistical algorithms run by programmable logic controllers to identify slight variations that would otherwise go unnoticed.

The solution has been developed closely alongside the Portuguese distribution network operator, which was responsible for defining which algorithms would be used and delivering on-site support when commissioning the system.
The solution is connected directly to the substation, with one system required for each substation.

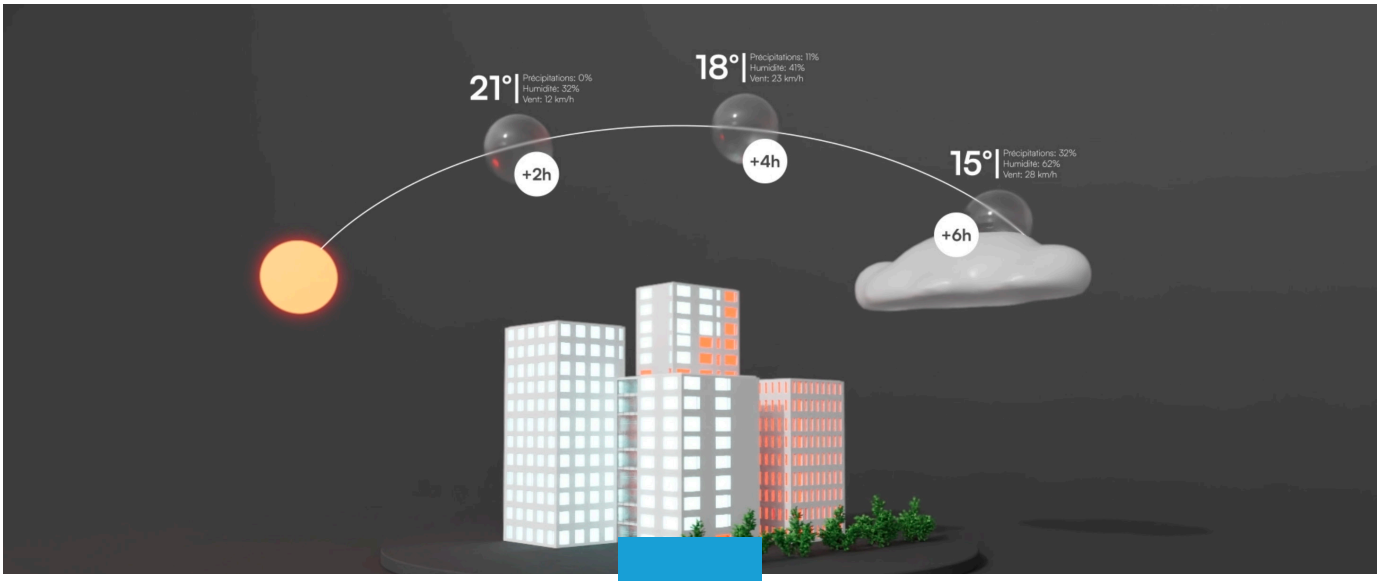
1.7 million tons of CO_2eq emissions could have been avoided

VINCI Energies

DECARBONISATION

VINCI is taking action to remain in line with the commitments of the Paris Climate Agreement and therefore is driving decarbonisation across its entire value chain, both upstream and downstream. To tackle the root causes of climate change, our activities are developing low-carbon solutions for buildings, industry, and urban environments.

Exegy® – Increasing use of low-carbon concrete on VINCI Construction sites as part of the drive to decarbonise activities. Target: 90% low-carbon concrete on all sites by 2030.



WiseBMS

Managing energy efficiency through artificial intelligence

ISSUES IDENTIFIED

In the case of a tertiary building, the energy used by its heating and air conditioning systems is:

- A significant source of greenhouse gas emissions
- A major cost item
- A key issue for users' well-being

The regulations impose:

- A best-efforts obligation by rolling out a building management system (BMS) in tertiary buildings from 2025, in accordance with the French BACS Decree on building automation and control systems.
- An absolute obligation to achieve a 40% reduction in energy use by 2030[1] as set out in the Tertiary Decree for buildings over 1,000 sq. metres, as part of France's ELAN Act on new practices in housing, town planning and digital technologies.

VALUE PROPOSITION

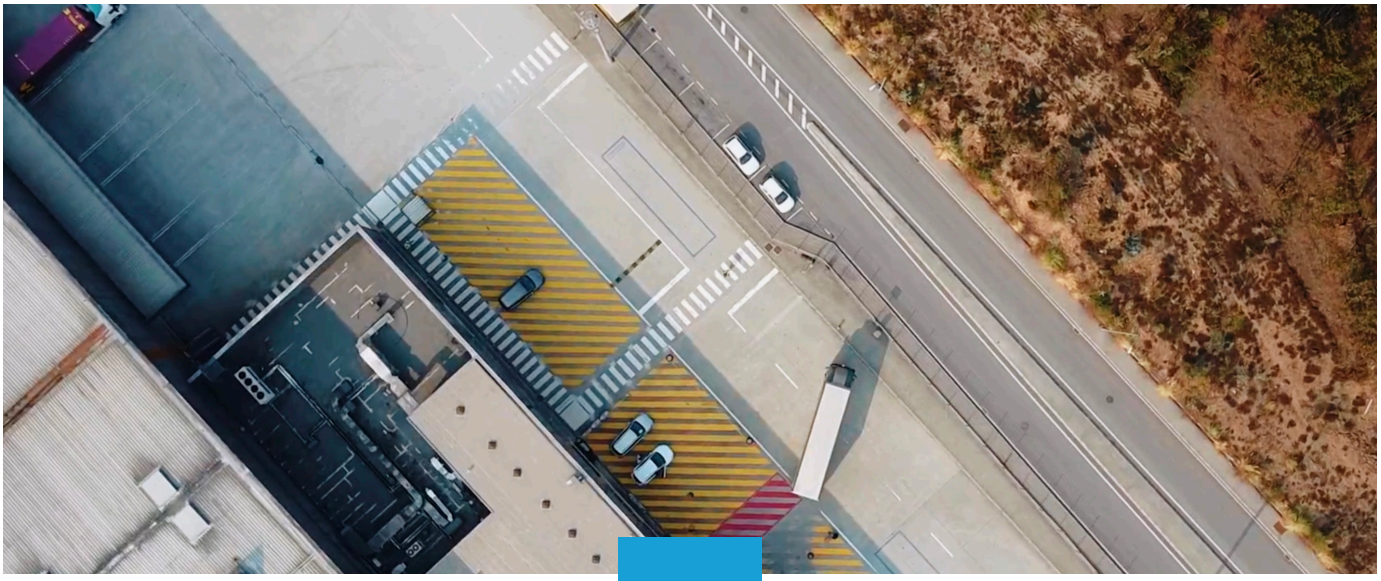
WiseBMS is a proprietary artificial intelligence (AI) solution that allows heating and air conditioning systems to be controlled in any tertiary building equipped with a building management system (BMS).

This commercial solution aims to improve a building's energy consumption by predicting its thermal inertia, such as linked to weather forecasts, while improving comfort for occupants.

Initial results: 15% to 40% energy savings while maintaining thermal comfort for occupants.

VINCI Energies

1 The reference year for calculating the reduction in energy use must be chosen between 2010 and 2019.



ATLoS

Autonomous electric trucks for internal logistics inside industrial sites

ISSUES IDENTIFIED

European industries are facing increasingly stringent requirements when it comes to improving productivity and proving their ability to remain competitive.

Additional constraints are emerging, including:

- The need to lower their environmental impact to comply with current and future legislation.
- The need to enhance working conditions as part of a broader shift toward more sustainable and human-centered operations.

Within production sites, internal transport has a major effect on how time and resources are managed.

VALUE PROPOSITION

The ATLoS (autonomous logistics) solution is designed to replace diesel trucks with self-driving electric trucks, combined with the proprietary driving software application developed by Cobra IS, with the aim of:

- shrinking truck fleets by 15%;
- increasing the performance of vehicle rotations, with trucks used 24 hours a day;
- improving safety and working conditions.

ATLoS covers the internal logistics at production units.

This concept has been successfully trialled at Continental's production site in Portugal.
A further five trucks will be deployed over the coming months.

15% of fleet cutting

Cobra IS

Volucia

Design-construction of new low-carbon collective housing with no additional cost thanks to off-site production of 2D components

ISSUES IDENTIFIED

A pressing need to build intermediate housing (housing with capped rental amounts as an alternative to social and private housing), with a government pact to produce 75,000 such homes over the next three years.

Challenging thermal regulations mean higher production costs for residential buildings.

VALUE PROPOSITION

Build and operate a centre for producing prefabricated 2D components off-site to construct modular multi-family housing units that meet France's environmental standards due in 2031, compared to the 2028 version of the standards[1].

The solution incorporates a software program to ensure consistency and quality from design to on-site assembly.
The solution can be credited to an R&D project that was launched back in 2019 and which is now supported by a full-time team of six people.

Production is set to start in the Greater Paris region in the second quarter of 2025, with an annual capacity of 150 to 300 three-room multi-family homes.

The geographic scope is primarily concentrated in the Greater Paris and Normandy regions, with a preferred internal customer (Adim, a VINCI Construction subsidiaries) for projects of between 50 and 70 homes.

2031 environmental standards

VINCI Construction

1 https://www.consultations-publiques.developpement-durable.gouv.fr/ consultation-publique-portant-sur-le-decret-a3087.html

CIRCULAR ECONOMY

In the context of natural resources scarcity, VINCI minimises the environmental impact of its activities through a proactive circular economy approach.
This strategy focuses on enhancing design and production processes, reducing the extraction of virgin raw materials, and promoting reuse and recycling.

Target of 20 Mt of recycled aggregates in VINCI Construction's total production by 2030 — 16 Mt already reached in 2024.

Inclusive recycling

Minimising waste generation at airports: promoting resource efficiency and social economic opportunities

ISSUES IDENTIFIED

In Cambodia, nearly all household waste is landfilled due to the lack of appropriate treatment systems.

This leads to real difficulties when it comes to managing waste. However, there is an informal recycling market that mainly relies on waste-pickers, who only manage to recycle part of the products, since waste is poorly segregated at the source.

The lack of a waste treatment system in Cambodia leads to the burial of thousands of tonnes of waste in landfills.
For example, the airport at Phnom Penh produces three tonnes of waste a day, all of which ends up in a landfill.

VALUE PROPOSITION

Two years ago, Phnom Penh Airport, operated by VINCI Airports, adopted a 'zero-waste-to-landfill' policy, a solution implemented by Cambodia Airports to reach this goal. To reach it, the airport:

- reduces waste at the source by working with partners and targeting single-use plastics and packaging;
- segregates waste into specific categories to maximise the recovery of the recyclable content;
- increases recycling rates by integrating waste-pickers into the residual materials management chain.

VINCI Airports

Gabarit

Optimising large-scale real estate portfolios through circular urban planning (POPI)

ISSUES IDENTIFIED

As uses continue to change at breakneck speed, combined with increasingly stringent environmental regulations for building owners (especially France's ELAN Act on new practices in housing, town planning and digital technologies), companies and institutions are faced with a number of constraints, such as:

- upgrading / renovating the properties in their portfolio;
- reducing their energy use;
- optimising any unused sq. metres;
- disposing of sites that are no longer fit for purpose / used;
- having to use existing land to expand.

VALUE PROPOSITION

In the wake of the no net land take objective enshrined in France's Climate and Resilience Act, the solution aims to increase the value of property assets through a "circular urban planning" approach. The aim is to repurpose obsolete, underused or unused land and buildings, so that they can once again play a meaningful role in the private or public sphere.

The solution combines two elements:

- The Gabarit software program, which aggregates and analyses urban planning and real estate market data for all the properties analysed and defines their "upcycling potential".
- VINCI Immobilier's expertise and insights into how the properties are used, which can be leveraged to propose scenarios for optimising and enhancing their value (renovating, multi-purposing or greening).

The first stage in this approach (analysis performed with the Gabarit software) has been deployed across VINCI Autoroutes' real estate portfolio, which has helped identify 600 sites with upcycling potential.

30M properties in France where the solution can be applied

VINCI Autoroutes

VINCI Immobilier

Ogêo

A distinctive aggregate solution to promote the adoption of a circular economy

ISSUES IDENTIFIED

Quarried aggregates may be available in large quantities, but they are still a limited natural resource.
Society is putting pressure on the sector to:

- reduce its reliance on quarries by tightening up the rules for granting and renewing quarrying permits;
- use secondary resources.

Recycled aggregates are hard to sell due to a problem with how they are perceived:

- their technical performance is presumed to be sub-standard;
- their visual appearance is non-uniform (colour, size and quality).

VALUE PROPOSITION

Ogêo is a range of high-tech aggregates formulated from primary resources (quarries) and secondary resources (local materials from deconstruction work). The proportion of recycled materials varies according to the quality and quantity of secondary materials available in the local area.

In south-eastern France, VINCI Construction's network of material sites now markets only the Ogêo brand, thereby encouraging secondary resources to be consistently incorporated into the product (an average of 30% by 2023).
With this new solution, which guarantees the quality of the material, customers may not know the exact composition, but they can be assured of the quality of the aggregate for the intended use.

VINCI Construction

NATURAL ENVIRONMENTS

As VINCI's activities impact their natural surroundings, we integrate preservation into our design, construction and operating processes.
We strive to minimise effects on biodiversity, develop solutions to preserve water resources and regreen areas throughout the life cycle of our projects.

Restoring hydraulic continuity by building a fish pass on the river near La Jaille-Yvon (western France) enabling various fish species to swim upstream.

Uxel'eau solutions

Dynamic filtration system for fire water reserves: minimising waste from regulatory draining

ISSUES IDENTIFIED

According to applicable fire regulations, the 11,000 water reserves in France must be drained on a regular basis.
There are several problems with this approach:

- A waste of drinking water, as well as unnecessary filling costs.
- Greenhouse gas (GHG) emissions as a result of treating the drained water, purifying the water used to fill the tanks, and transporting the water.

Taking account of the operation of the conventional system, inspection visits and draining, some 2.6 cu. metres of water are consumed every six years for every 1 cu. metre of water in the fire reserve.

VALUE PROPOSITION

On the one hand, Uxel'eau offers an autonomous dynamic filtration system that is capable of saving up to 91% of the volume of water that is currently wasted during draining.
On the other hand, the system also protects the tanks from frost while consuming only a third of the electricity required by current systems.

The system comprises a compact box connected to the water reserve for the sprinklers[1].
It consists of a PLC that controls a magnetic filter for treating the water. The cover of the box housing the fire-fighting system is fitted with solar panels that help reduce some of the energy used.

91% of water saved during tank draining

VINCI Energies

1 fixed automatic water extinguishing system.

REUT by VINCI

Qualify all non-conventional water resources within the Group to develop treated wastewater reuse projects

ISSUES IDENTIFIED

The number of droughts resulting in water restrictions continues to rise.
This situation is prompting manufacturers, farmers and local authorities to look for alternatives to lower their dependence on drinking water or water sources that are subject to restrictions, as illustrated by the initiative that the Pays de l'Or agglomeration community has taken to water the Grande-Motte golf course.

Reusing treated wastewater is a technically demanding solution that requires a number of conditions to be fulfilled:

- A non-conventional water source must be identified (WWTP[1], quarry lakes, etc.).
- Water quality must be fit for purpose (irrigation, cleaning, etc.).
- A treatment and supply system must be implemented.

VALUE PROPOSITION

Sogea Environnement has developed a solution for watering the Grande-Motte golf course using treated wastewater from a neighbouring wastewater treatment plant (not operated by VINCI).
The facility has replaced 50% of the water that was previously pumped from the Bas-Rhône canal, and includes additional UV treatment, a storage system, a booster pump and an automated valve to control the water's salinity level by mixing it with fresh water if necessary.

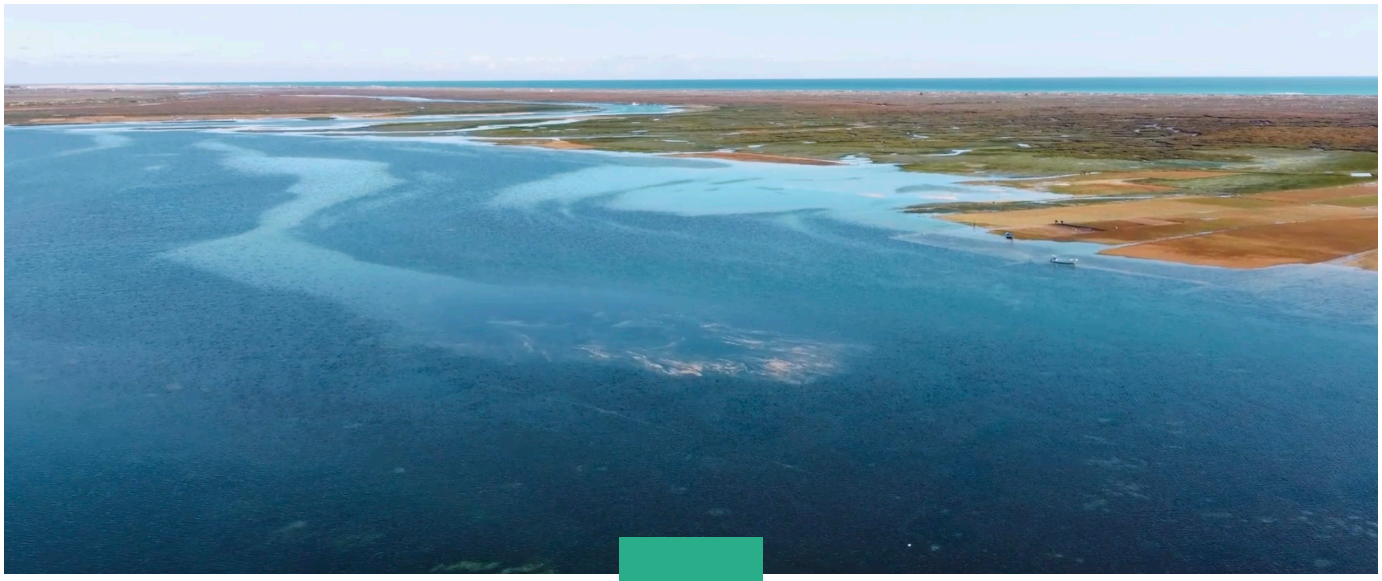
REUT by VINCI, a collaborative effort between VINCI Autoroutes and Sogea Environnement, aims to develop more non-conventional water reuse projects, such as the initiative for the golf course.
This involves:

- Listing all non-conventional water sources within the Group (wastewater treatment plants, quarry lakes, motorway ditches, etc.).
- Identifying prospective customers for each source and offering them a reuse solution.
- Continuing to bid on calls for tenders for reuse projects in competition with the sector's major players.

VINCI Autoroutes

VINCI Construction

1 wastewater treatment plant



Restore seagrass

Seagrass restoration and preservation: a key carbon offset initiative for ANA

ISSUES IDENTIFIED

Seagrass meadows play an essential role for biodiversity, fishing, coastal protection and carbon storage, but they are under threat, especially in south-western Europe.

These marine habitats are declining rapidly due to human activities (boat anchoring, dredging, etc.) and the spread of invasive species.

Nevertheless, seagrass ecosystems capture 30 times more carbon than land plants and help reduce ocean acidification.

VALUE PROPOSITION

Built with the backing of the European LIFE programme, this solution aims to preserve and restore damaged seagrass meadows off the coast of Faro, Portugal, over a seven-year period (2023-2030).

It is being developed with the help of the University of Algarve's Centre of Marine Sciences and eight other public and private partners.

The main initiatives include restoring underwater vegetation, removing invasive algae species and rehabilitating the seabed. Drones and sensors will be used to continuously monitor biodiversity and water quality, and annual reports will be produced to track progress and fine-tune strategies.

The project also intends to generate blue carbon credits as part of a pioneering effort to offset ANA's residual GHG emissions by 2030.

VINCI Airports

ABOUT VINCI

VINCI is a world leader in concessions, energy and construction, operating in more than 120 countries. We are at the centre of the challenges facing today's world, and our ambition is to play an active part in the energy and environmental transition of living spaces, infrastructure and mobility, while fostering social progress as a humanist group that stands for inclusion and solidarity.
We harness our fields of expertise, our quest for innovation, our business model's strength and our teams' engagement to strive towards a goal that our 285,000 employees share: serving a useful purpose and caring for the planet.

www.vinci.com

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