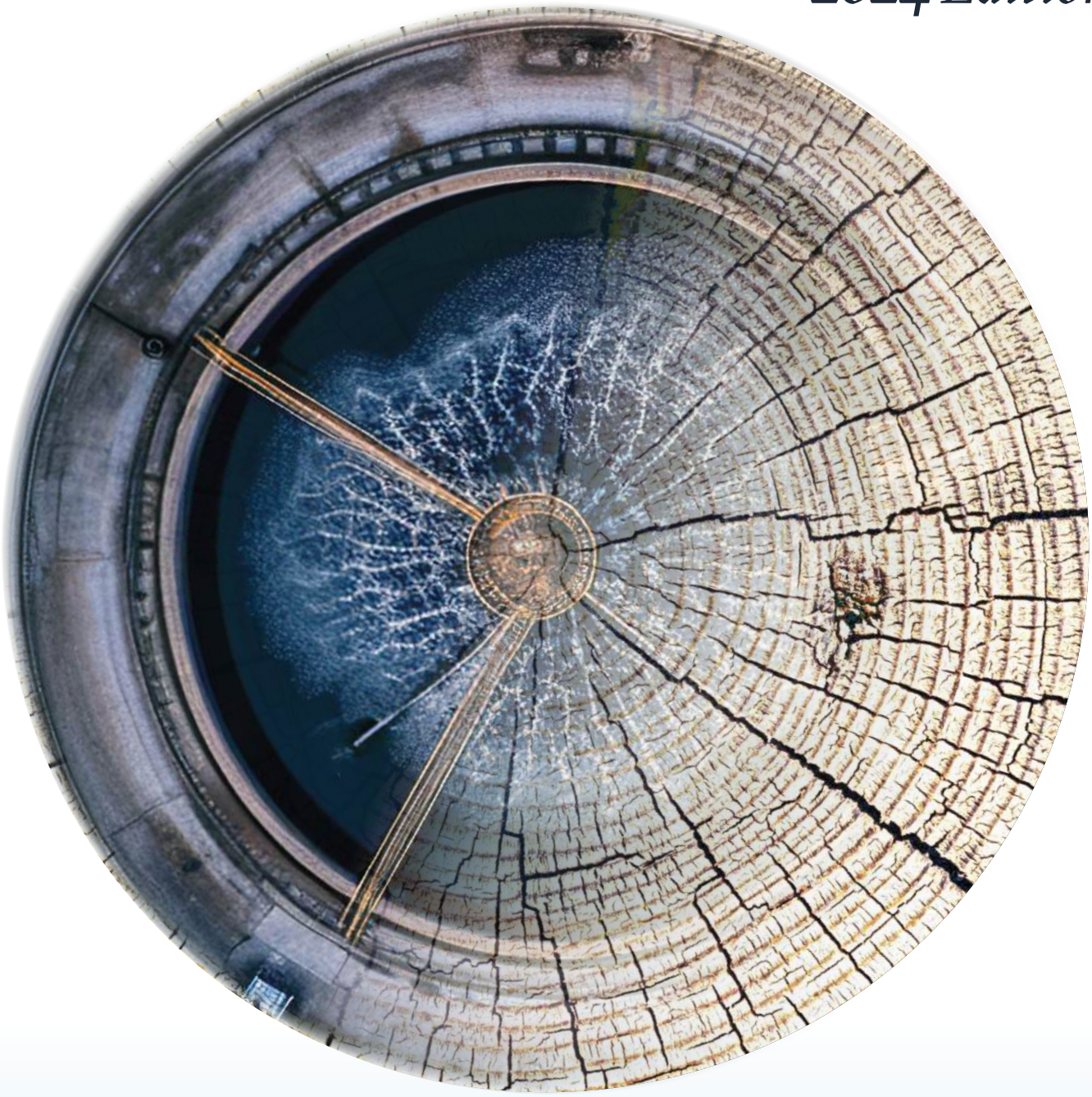
MAGAZINE

2024 Edition



Circular economy

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Haliotis

Haliotis awaits its transformation

What *we stand for*

We draw on our international experience to serve local communities and challenge the status quo. By fostering collaboration and learning from others, we are empowered to turn challenges into opportunities.

OUR PURPOSE

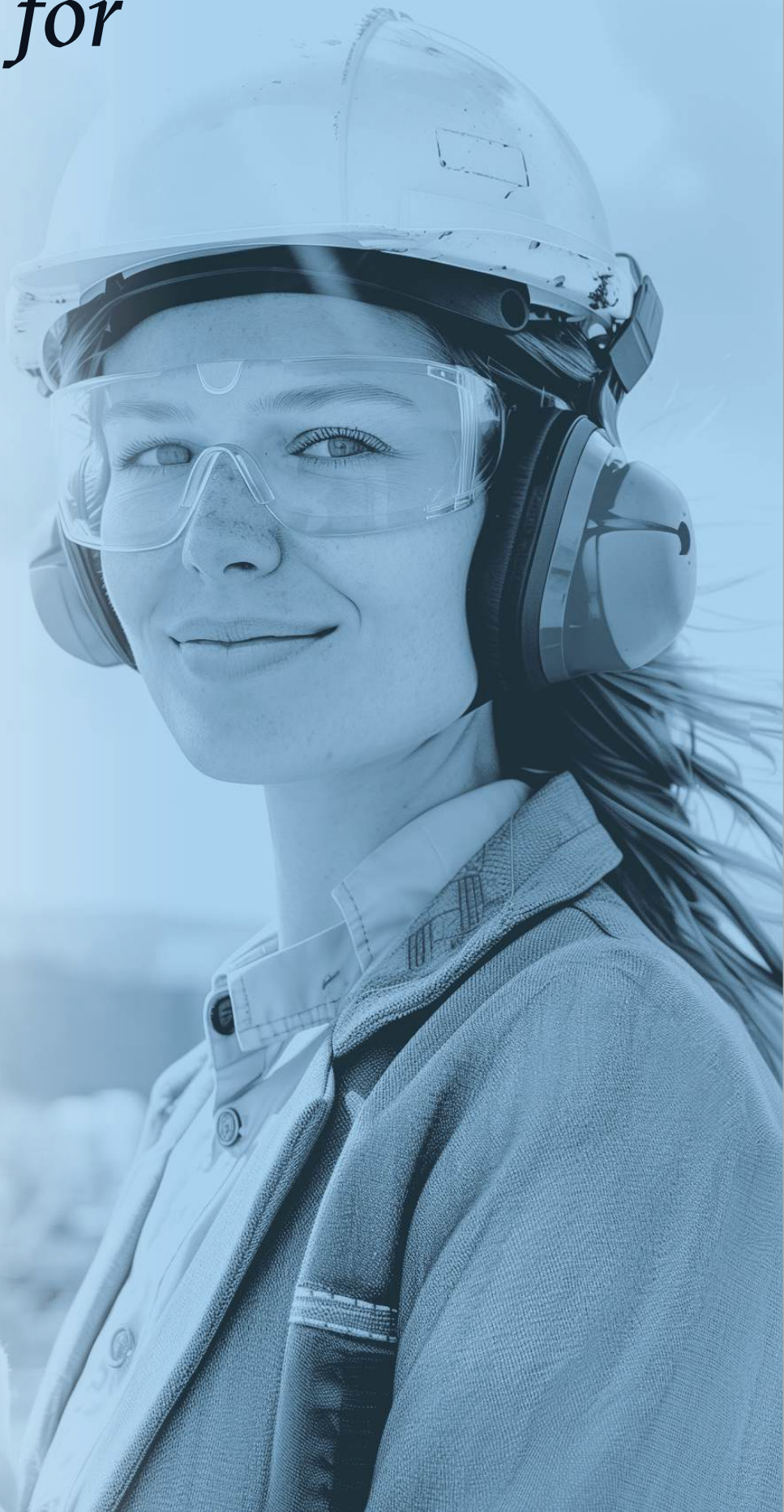
- We exist to future-proof our cities and environment.

OUR BELIEF

- For societies to thrive, we believe that we must all hold ourselves accountable for tomorrow.

OUR GUIDING PRINCIPLES

- We value our people and our reputation.
- We are locally dedicated with international scale.
- We are future-focused and challenge the status quo.
- We foster collaboration in everything we do.
- We have an empowering culture and hold ourselves accountable.



EDITORIAL

"Nothing is permanent, except change."

This idea, often attributed to Buddha, Heraclitus, and Confucius, has endured through centuries and across cultures. The 4th Industrial Revolution we're experiencing today only reinforces what has become a fundamental truth.

In our profession and increasingly demanding industry, we encounter change every day: from the impact of climate transition on infrastructure design to the growing complexity of interdisciplinary projects, the integration of digital technologies into project execution, and the rise of artificial intelligence in our workflows. And that's just the beginning.

These moving forces and shifting dynamics have pushed us to reflect, adapt, and prepare for what's to come. We've sought out excellence and embraced transformation with teams united under the WSP banner, the world's leading engineering consultancy.

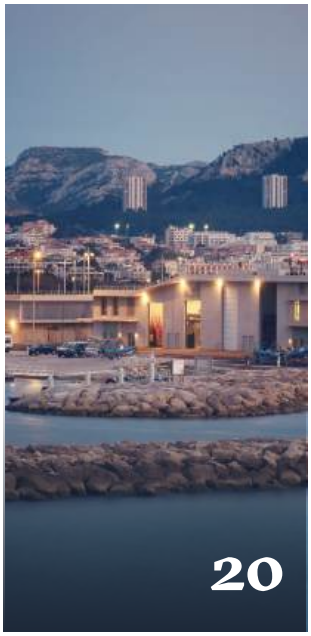
These changes also shape the essence of what we do and how we envision the way we build. How can we reduce our carbon footprint? How can we lower our resource consumption? And how can we bring Heraclitus' concept of "flow" into the value chain of constructed objects and building materials? Today, it's our collective duty to integrate the limits of nature into the way we design and shape the world around us.

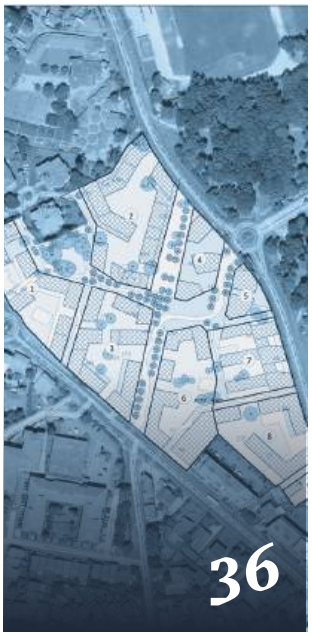
Let's embrace change and move in harmony with the forces of nature.

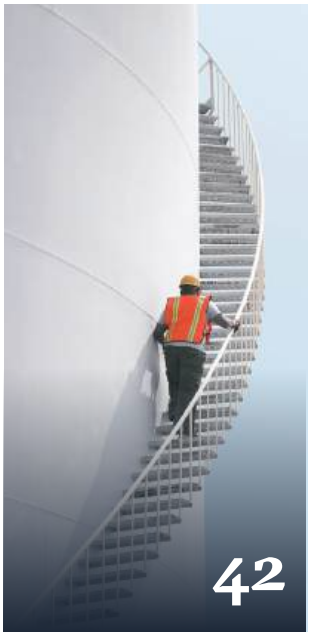
Enjoy the read.

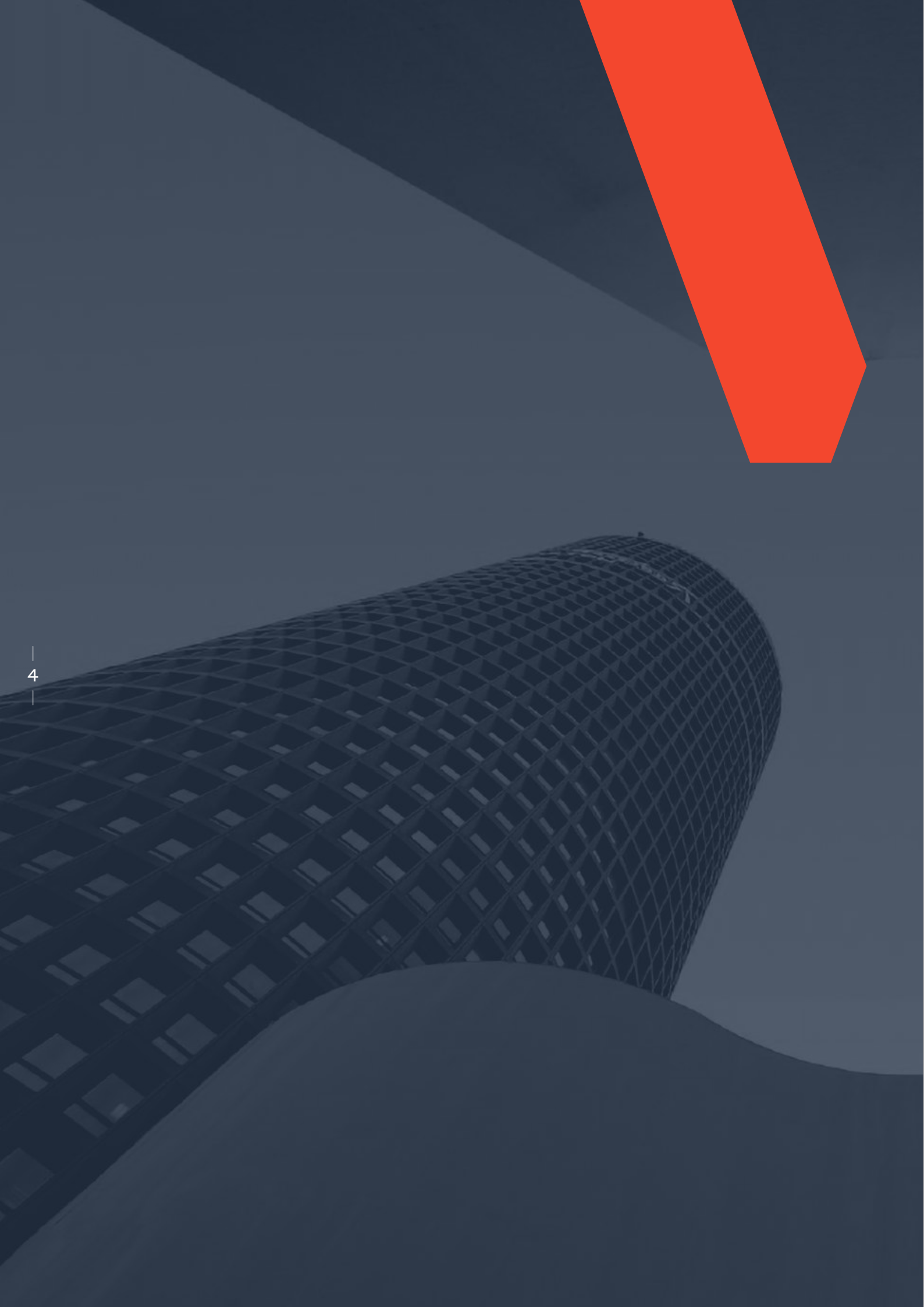
Pierre Epars

CEO, WSP Western Europe









CIRCULARITY:
What if we changed scale?

The circular economy unveils an alternative approach to the traditional production and consumption model. Unlike the traditional linear pattern, where raw materials move from a state of "resources" to a state of "waste," the circular economy aims to extend the lifespan of materials, reduce waste, and optimize the use of available resources. This is a real turning point, where recycling, reuse, and recovery become the watchwords.

ORIGINS AND EMERGENCE OF THE CONCEPT

The concept of a circular economy originates from the economic theories and environmental movements of the 20th century. It emerged in response to growing concerns about the overconsumption of natural resources and the management of waste. The term "circular economy" was made popular in the 1970s by economists and environmental researchers, notably in the academic work of Walter Stahel and David Pearce. Walter Stahel developed the concept of the functional economy. For example, instead of offering a product such as a car, it provides services such as mobility.

CURRENT CHALLENGES AND PRIORITIES

The circular economy has now become a priority for all, with engineering at its core. In the field of construction, this approach is particularly important, given that construction is traditionally one of the most resource-consuming and waste-generating sectors. Demolition and surplus construction materials have long been poorly recovered, accounting for 25 to 30% of the total weight of waste generated at the European level (according to a report by the Ellen McArthur Foundation). However, this sector has a number of options to drive change in this area.

By adopting a circular approach, construction professionals and contracting authorities can make key contributions to natural resource preservation, waste reduction, the creation of a more sustainable built environment for future generations, and the strengthening of local supply chains, among others. Learn all about it in this issue!

Circular construction: *An economic paradigm for the present and the future*

The circular economy is a sustainable approach that rethinks the way we build and manage our buildings and infrastructure. Contrary to traditional models, it optimizes the use of resources, minimizes waste, and promotes sustainability. In Europe, this transition is already under way and requires close collaboration between key parties of the value chain, from regulators to realty developers to the waste management industry.

To fully understand this concept and how it is applied to the construction sector, we must explore its structure, key success factors, and the challenges to overcome.

The three founding pillars

The circular economy applied to the construction sector is based on three main interconnecting pillars: ecodesign, optimization and recovery.

The first, **ecodesign**, reduces resource requirements and waste. It involves building using existing structures, opting for a circular design where elements are interdependent, promoting modular design and the adaptability of buildings, increasing the proportion of recycled or reused materials from the planning phase, anticipating surplus materials, and choosing strategic technical solutions that reduce the quantity of materials needed.

The second, **optimization**, maximizes the reuse of existing materials, as about 30% of CO_2 emissions in the construction sector can be attributed to the production of new materials. The challenge here is to transform "waste" into a "resource," to reduce construction site waste, and to use methods such as Lean Management or Building Information Modeling (BIM) to better manage the quantities of materials needed and minimize waste.

The third, **recovery**, refers to waste reuse and recycling. Once waste is produced, questions arise: What do we do with it? Who recovers it? How? And how does it fit into the value chain? These issues are critical as optimized management of construction waste could reduce waste in the sector by 70%. In addition, CO_2 emissions could be significantly reduced by increasing the lifespan of buildings from 20 to 60 years through practices such as preventive and predictive maintenance enabled by circular design and digital solutions such as BIM FM (Facility Management).

By incorporating these principles, we can not only reduce the carbon footprint of the construction sector, but also achieve substantial savings and create a more sustainable built environment.

COLLECTIVE COMMITMENT: THE KEY TO SUCCESS

The transition to a fully circular built environment requires systematic change across the entire value chain. The key word here is collaboration, more precisely collaboration between all the players in the sector.

Engineers are at the forefront of designing technical solutions for the circular economy. As are architects: through their design talents, they help create flexible and adaptable spaces, ready for future repurposing. By integrating sustainability requirements into their projects, project owners and construction companies send a strong signal to the industry and encourage the entire value chain to adopt sustainable practices that foster the emergence of new ethical sectors. Political decision-makers also play a leading role in framing this approach by creating a legislative framework that supports the development of circular construction processes. Through appropriate laws, regulations and procedures, they encourage companies to adopt sustainable practices, fund innovative projects, and support research. Their involvement is critical for establishing public policies that facilitate the transition to a circular economy.

"CRADLE TO CRADLE" VERSUS "CRADLE TO GRAVE"

In addition to these pillars, let's examine a concept developed by Michael Braungart and William McDonough, that of "Cradle to Cradle." Unlike "Cradle to Grave," the "Cradle to Cradle" concept advocates an approach where materials are designed to be continuously reused or recycled without losing quality. Whereas the traditional life cycle concept often ends in waste disposal, the "Cradle to Cradle" concept offers a closed loop where each element is optimized in the overall process. Braungart and McDonough have created a very purist vision of materials that it almost philosophical.

Michael Braungart and William McDonough, Cradle to Cradle: Remaking the Way We Make Things

Future-proofing construction: **Challenges and opportunities in the circular economy**

The circular economy in the construction sector is transforming traditional building practices, emphasizing sustainability and resource efficiency. While this shift presents numerous opportunities, it also brings significant challenges that must be addressed. In our interview with James Martin, circular economy expert at WSP, we seek answers and explore the barriers and potential of circular economy practices applied to the construction sector.

Circular economy in the construction sector: challenge or opportunity?

An opportunity! The circular economy and sustainable goals apply to every sector and client WSP works with. It's a great opportunity to build better and deliver more durable, easily maintained, and reusable infrastructure. However, like every pioneering method and practice, it comes with its share of challenges. WSP has built one of the strongest corporate profiles in the market regarding circular economy practices, yet this doesn't eliminate the challenges we face.

In the past, engineers and architects would design a project aligned with the client's requirements and budget. Today, we're being asked to address many new considerations: to design for durability, incorporate reused or recovered materials, design for easy repair and maintenance, consider and facilitate future changes in use by tenants, and ensure that over the building's lifespan—from construction to operation to end of life—sustainability is demonstrated through energy efficiency, biodiversity net gain, responsible material use, water savings, and so on.

What are the main challenges circular economy projects face today?

The circular economy is relatively new in the construction sector. However, we're already witnessing rapid progress in various parts of the world. The primary hurdles are economic, legal, and institutional—factors which, although distinct, are often intertwined.

Starting with the economic challenges, circular practices can be more costly than traditional building methods. Recycled materials, for instance, are often pricier than virgin materials due to rising demand and finite supplies. The mission of WSP's engineers is to optimize material use—finding the right material for the right application in the right quantity, while considering reuse options for facades, glass, concrete, MEP, and so on. This approach reduces waste, promotes reuse and repair, and ultimately results in economic and environmental savings. Moreover, adopting circular practices helps develop supply chains, which is crucial for the evolution of the circular economy in every sector.

Institutionally, we face the challenge of ensuring that materials from the circular economy meet performance requirements. This is particularly difficult given the variability in regulations and standards across regions—or even a lack of standards for reused materials. Such inconsistencies would normally challenge the adoption of circular practices. However, WSP's extensive global and local regulatory expertise enables us to work with governments and developers to harmonize these regulations and validate the quality of reused materials. Tools like material passports and Buildings As Material Banks (BAMB) are vital in demonstrating compliance with material standards, origins, and conditions. Additionally, the insurance industry must adapt to accommodate material reuse.

We must also keep developing financial incentives and support programs. Indeed, though the long-term benefits of circular practices are increasingly recognized, the costs are often higher. Therefore, financial incentives from governments and institutions have a major role to play in driving systemic change.

Despite these challenges, the circular economy is gaining momentum. Customers and shareholders are requesting more sustainable practices, and regulators and policymakers are pushing for greener construction. This creates a push-and-pull effect, driving every sector forward. The circular economy now prompts us to ask, "What can we do? How do we do it? And when do we start?"

How can engineering help solve the challenges of the circular economy in the construction sector?

Firstly, proactive client engagement is crucial. Often, clients aren't fully aware of the possibilities that circular economy practices offer. This is where engineering steps in, challenging the remit and showcasing best practices and successful examples from other projects. We offer ideas that can enhance quality, yield economic savings, and boost environmental credentials. For instance, suggesting the use of recycled materials or modular construction methods can provide significant benefits that clients might not initially consider—in terms of costs and environmental savings but also health and safety improvements on site. Our interdisciplinary teams collaborate to identify the best alternatives.

Secondly, engineers are increasingly influential in shaping public policy. Our role extends beyond projects to advising policymakers on advancing sustainable practices. By presenting evidence-based recommendations, we help steer regulations in a direction that supports the circular economy. WSP has worked with over 15 international governments—from the UK to Bulgaria, Rwanda, Morocco, Poland, Croatia, etc.—to develop stakeholder-approved interventions. These interventions help reduce marine plastic pollution or increase material efficiency in key economic sectors such as automobiles, steel, chemicals, oil and gas, and renewables. This collaborative effort with various sectors ensures that our recommendations are technically robust and impactful—while giving WSP the strongest possible suite of knowledge and best practices—unmatched by any other consultancy. Our engineers' voices resonate in public policy, driving systemic change at the macro level.

On a more micro level, our engineers are redefining how we conceive and design projects. Longevity and adaptability are always at the forefront in a wide range of projects such as water treatment plants, waste recycling facilities, metro systems, railroads, hydrogen infrastructure, master planning, or airports. Our engineers think about the lifecycle of materials, designing for repair, upgradeability, and future use changes. This long-term vision ensures that buildings can evolve without needing extensive refurbishments or dismantling. Engineers anticipate future needs by incorporating design layers, such as creating buildings where facades can be replaced without disturbing the entire structure or offering services that facilitate easy upgrades and repairs.

Additionally, navigating best practices and sustainable procurement standards is a key part of our role. We help clients procure sustainable materials, future-proof their projects, and establish collaborative supply chains to minimize waste. An overlooked reality is that the supply chain is a surefire way of facilitating sustainability objectives. Our goal is also to provide added value to local communities through social and ecological benefits, like supporting local businesses, skills development, and nature-inclusive designs that enhance biodiversity. This is the framework we apply to all our projects.

How do you see the circular economy evolving in the coming years, both in Europe and globally?

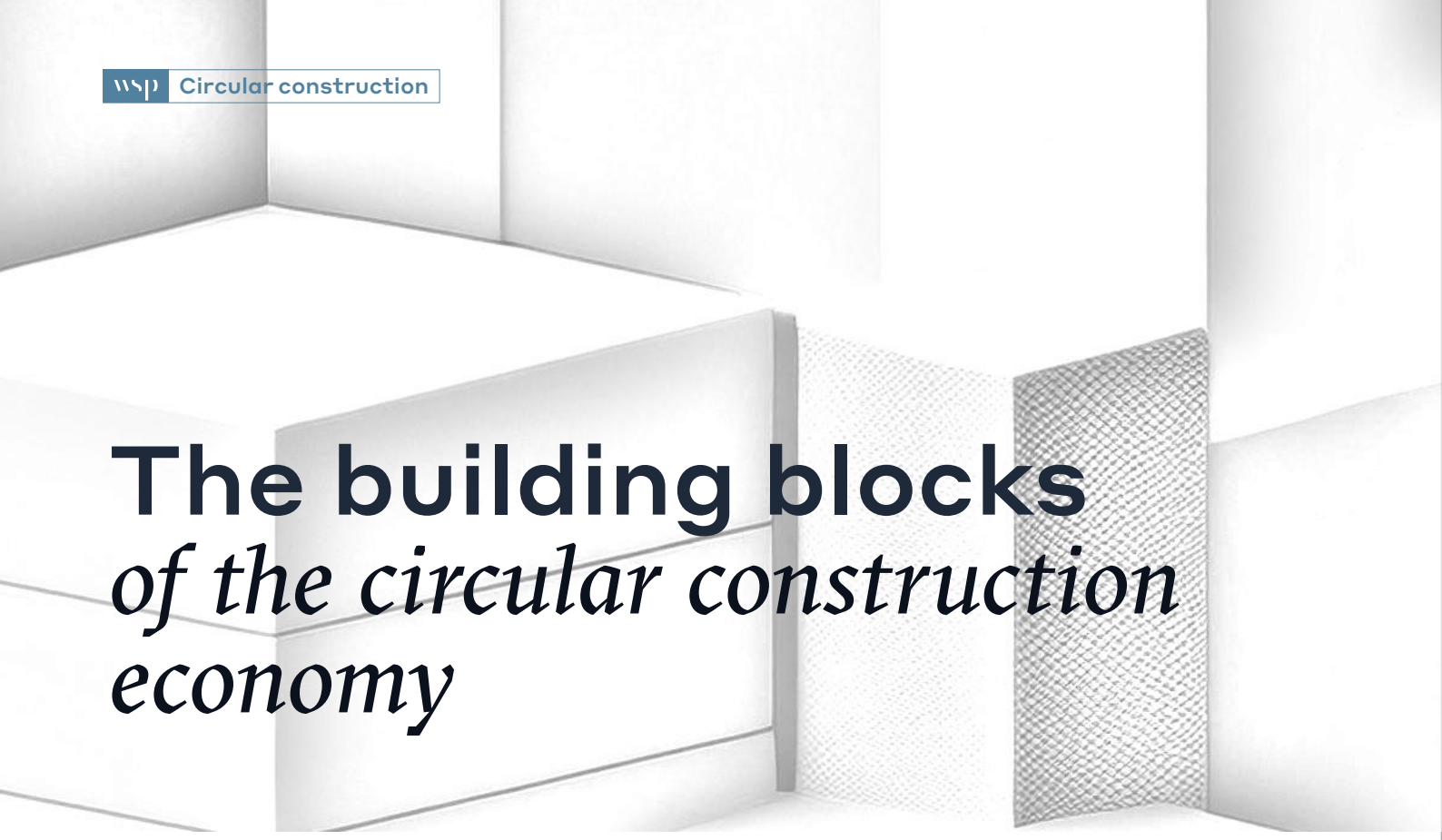
One of the most transformative developments will be the implementation of Border Carbon Adjustments (BCAs). In Europe, this type of mechanism is known as the CBAM (Carbon Border Adjustment Mechanism). This is a new European regulatory instrument designed to impose carbon pricing on products imported into the EU customs territory, equivalent to the pricing applied to European manufacturers. The primary aim of this scheme is to level the international playing field and avoid carbon leakage, in light of heightened climate ambitions at the European level.

BCAs are expected to be a game changer for the circular economy, especially for industries that rely heavily on imported materials like steel. Our clients in the offshore sector are already starting to rethink their strategies in response to these upcoming regulations. They're exploring ways to reduce imported materials, extend the lifespan of their assets, and source locally through the development of circular supply chains. At WSP, we're collaborating with these companies to identify sustainable alternatives and best practices.

In parallel, material passports and Buildings As Material Banks (BAMB) could also gain momentum. Material passports provide detailed information about the origin, composition, and lifecycle of materials used in buildings, facilitating their reuse and recycling. Companies are increasingly adopting this practice to track materials more efficiently. BAMB takes this concept further by creating databases of materials and assets within buildings. This allows for precise planning of maintenance, repair, and decommissioning, ensuring that valuable materials can be recovered and reused. Technologies like blockchain and digital tracking systems are helping in this process, enabling transparency and traceability.

Moreover, the development of supply chains is starting to pay off. The availability of sustainable materials is improving, with recycled steel and aggregate becoming more accessible, for instance. This trend is essential for the circular economy as it provides the necessary resources to support sustainable practices at a reasonable cost. The market is responding to the increased demand for circular solutions, and we expect to see rapid progress for different kinds of materials: for example, wood is being increasingly sourced from sustainably managed forests and reused in construction. The circular economy is set to evolve significantly in the coming years, both in Europe and globally.

James Martin
Circular economy expert at WSP



The building blocks *of the circular construction economy*

The circular economy is a fully-fledged solution to meet the numerous environmental challenges faced by every sector and aspect of society, since it allows us to rethink the way we produce and consume goods. Let us now explore the key building blocks of this concept: ecodesign, optimization, and recovery.

ECODESIGN

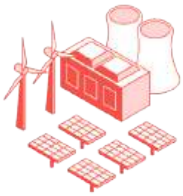
Ecodesign and multi-purpose buildings are the driving force behind the circular economy in the construction sector

Applying the key principles of the circular economy to construction means designing buildings that can be easily modularized, repurposed, or recycled. Rather than erecting monolithic structures that are difficult to transform, architects and engineers design modular, forward-looking buildings, which offer greater flexibility and extend the useful life of the built environment. WSP's Valais Hospital project is one example of this kind of building. In the transport and infrastructure sector, the evacuation passage built alongside the Cap Estel road tunnel to ensure user safety also features a cycle path to enhance mobility. This is an excellent example of multi-purpose construction. For more information on this project, see page 26 of this magazine.

OPTIMIZATION

Maximizing the use of existing resources

In the construction sector, one of the key objectives of the circular economy is to reduce waste and maximize the use of existing resources. This involves rethinking how materials are produced, used, and disposed of throughout the lifecycle of a building or infrastructure. For example, rather than utilizing unsustainable materials that are difficult to recycle, we can opt for bio-based or recycled materials. This includes using wood for building structures or a combination of steel and low-carbon concrete for foundations to reduce environmental impact. To do this, engineers play a proactive role in promoting and proposing more sustainable alternatives to developers, thus facilitating the decision-making process. To reduce waste and maximize resources, the right choices must be made during the design phase.



RECOVERY

Reusing and recycling construction waste

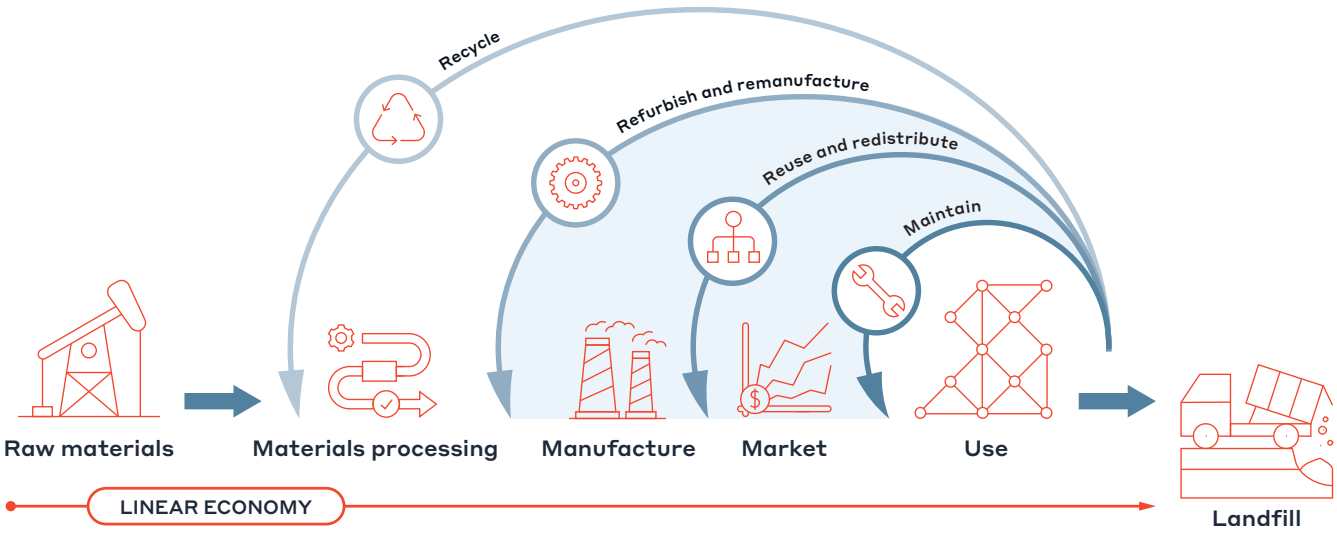
When waste is produced, another important aspect of the circular economy in construction is waste recovery. Rather than sending waste directly to landfill, it may be sorted, recycled and reused for future projects. Certain waste streams specialize in recovering and reusing construction materials from demolition sites, enabling waste materials to be used a second time. Aside from waste, the circular economy also raises the issue of recovering resources such as water and energy.

Energy efficiency and water recovery

Energy efficiency and water recovery are essential aspects of the circular economy. Energy efficiency aims to maximize the production and utilization of energy, and minimize energy loss. This may be achieved by adopting more efficient technology, adapting the physical design of buildings (window size, energy strategies, performance assessments) and implementing effective energy management policies. Water recovery involves reusing and recycling treated wastewater using specific techniques. Implementing innovative treatment processes enables wastewater to be purified and used for other purposes, such as watering green spaces, as in the Haliotis 2 project (see page 30 of this magazine). Water therefore has its own recovery cycle.

The service economy: A creative approach to engineering

The term "service economy," coined by Walter Stahel, gained public prominence in the 1970s. Stahel recommended using services rather than owning products. This concept favors the provision of services over simply selling products, which encourages maximum product usage and lifetime and minimizes waste. Engineers play a key role in applying this principle, by proposing creative solutions and technology to support this transition. For example, in the energy efficiency field, an engineer who optimizes a heating system could receive a percentage of the energy savings. This kind of approach can significantly contribute to promoting the circular economy in the construction sector.



Rethinking construction: The impact of digital technology

The construction industry extracts 40 billion metric tons of sand and gravel each year, producing 39% of global greenhouse gas emissions and almost 30% of all waste in Europe. This makes the sustainability of the sector more urgent than ever before. Beyond the way we work with materials, the digital ecosystem can also contribute to more sustainable and circular construction practices.

To explore this topic, we interviewed Catherine De Wolf, Assistant Professor of Circular Engineering for Architecture at the Swiss Federal Institute of Technology Zurich (ETH Zurich), Switzerland.

How can digital tools help create a circular economy in the construction sector?

There are many technologies that can help. Thanks to artificial intelligence, LIDAR, augmented reality and blockchain, it has become possible to shift from a linear to a circular construction economy: one in which we use the full lifetime of resources through reuse and renovation. For instance, we can now scan buildings and survey the materials they contain with an aim to reusing them if the building is deconstructed, rather than sending them to landfills.

What are the main difficulties with implementing the circular economy in construction?

There are several obstacles to developing new solutions. Existing standards sometimes have strict frameworks that can slow the adoption of innovative circular practices (like choosing more local and sustainable materials to repurpose). The industry's significant fragmentation is another major hurdle. These separate silos hamper collaboration and knowledge sharing, which are both essential for innovation and the implementation of large-scale circular solutions. Inertia is another notable challenge: deep-seated habits, established economic models, and cultural resistance to adopting new practices present major barriers.

Are there practical changes we can make to overcome these barriers?

Collaboration between all the stakeholders in the value chain is essential. The digital ecosystem makes it easier for architects, material suppliers, transporters, demolition experts, providers of third-party apps, and clients to communicate with one another. This was one of the objectives of the Innosuisse Circular Building Innovation Booster, launched in 2021. The program offers an inspirational, agile way to connect the Swiss building and construction trades with the main innovation and research hubs. We are continuing this work with our Innosuisse flagship project, SWIRCULAR (the Swiss Digital Circular Construction Ecosystem), enabling us to partner with various stakeholders ranging from architects to policymakers.

BIM has become a fundamental construction tool. How does it make circularity easier?

BIM is mainly used in the design and implementation phases. Yet it could be employed throughout a building's lifetime to help us plan for and anticipate the required energy and materials during the entire lifecycle. A proactive approach like this could bring major energy savings and more efficient resource management, leading to tangible benefits on both economic and environmental levels.

What advice would you give to construction businesses and professionals hoping to take a circular economy approach?

You really need to surround yourself with people and companies who are already active and experienced in this area, so they can give you valuable guidance for undertaking the often-complex measures. I would also recommend tapping into the younger generation's enthusiasm and thirst for change. That's what I find when I teach: young people are motivated to do meaningful work that has a positive impact on the environment. They can breathe new energy and novel ideas into circular economy projects.

> Collaboration between all the stakeholders in the value chain is essential.

Catherine De Wolf
Assistant Professor of Circular Engineering for Architecture at the Swiss Federal Institute of Technology Zurich

Learn more about the SWIRCULAR project

Catherine De Wolf is Assistant Professor of Circular Engineering for Architecture at the Swiss Federal Institute of Technology Zurich (ETH Zurich). She is the director of the Chair of Circular Engineering for Architecture (CEA) lab, where her research into digital innovation supports circularity in the built environment. De Wolf has also co-founded several companies and labs and serves on various boards and committees. Before joining ETH Zurich, De Wolf worked in design and construction management at Delft University of Technology (TU Delft) in the Netherlands. She did her postdoctoral research at EPFL, the Swiss Federal Institute of Technology in Lausanne. She obtained a PhD in building technology at the Massachusetts Institute of Technology (MIT) in the United States, and has considerable experience in structural engineering.

Our projects *for the circular economy*

Discover how WSP addresses the challenges of the circular economy through our projects.

The Terra project, *the tallest timber frame building in Occitania*

A new symbol of sustainability in the Cambacérès neighborhood

The largest timber frame building in Occitania has taken shape in Montpellier's Cambacérès neighborhood (France). Ecodesign, reuse, recycled resources, locally sourced materials, environmental labels and certifications: the property developers Nexity, ENGIE, and Cirrus Construction have made sustainability the watchword for this large-scale project. Every aspect has been carefully considered, from the bio-based wooden structure to waste recovery to connection to the district heating network. Read on for more details.

Aurélie Croze
Project Manager
at WSP France

The project is part of ongoing development in the Cambacérès Designated Development Area (ZAC), close to downtown Montpellier, at the intersection between several transportation facilities (tram, airport, highway, new high-speed train station). The seven-floor timber frame building offers 7,600 square meters of space for around 700 offices. "This project is a model of sustainable construction," said Aurélie Croze, engineer and project manager at WSP. The project has higher performance requirements than the rest of the neighborhood and is aiming for the highest Low Carbon Building rating—LCBI Excellence.

A solar PV system on the roof will provide energy and the building will be connected to the district heating and cooling networks. Careful thought has also been given to air quality and overall indoor environmental quality. Numerous studies (impact, mobility, bioclimatic) were performed in advance to ensure a coherent and sustainable approach.

RECYCLED, BIO-BASED, AND REUSED MATERIALS

The project is also at the cutting edge of the circular economy since it seeks to integrate recycled or reused materials to avoid extracting new resources: carpets are made from fishing nets recovered from the sea (Aquafil); the building is insulated with recycled glass wool; and the façades and floorboards are made of cross-laminated timber, which is known for its high load-bearing capacity. These design decisions allow the building to store large quantities of plant-based carbon, the equivalent of 160 kilograms of carbon dioxide per square meter, which represents around 20% of the project's carbon footprint. This was achieved by using resources that can naturally store carbon, like wood.

© Aurélie Croze

REDUCING AND MONITORING WASTE

Project managers adopted a particularly rigorous approach to resource recovery: special care was taken to manage the waste produced, with on-site monitoring to ensure that 90% of this waste was recovered. In addition, the decision to use prefabricated wooden structural components also reduced waste.

REGIONAL AND SHORT SUPPLY CHAINS

Throughout the project, the regional economy and short supply chains were prioritized. Nexity mainly chose to work with construction companies from the region. The structural timber came from sustainably managed forests in the Landes region.

A GROUNDBREAKING PARTNERSHIP BETWEEN WSP AND NEXITY

For this project, Nexity once again placed its trust in WSP's engineering team. Their cross-disciplinary skills and ability to provide integrated engineering services were key differentiators. "We are very pleased to have worked with WSP to build the TERRA project. The expertise and know-how of the WSP team—especially Aurélie Croze—have enabled us to achieve our very ambitious goals for this program. We are looking forward to continuing our successful partnership in future projects," said Nicolas Morin, deputy program director at Nexity.

AN EXTENSIVE MANDATE FOR WSP'S EXPERTS

WSP applied its expertise to various aspects of the project. The team provided strategic Project Management Assistance (AMO) for the project owner, thus contributing to overall project management, planning, and cost tracking. By integrating the Environmental Quality in Buildings approach (EQB), WSP helped assess and manage the building's environmental effects, including designing and improving its energy efficiency.

The WSP team also relied on solar insolation studies, bioclimatic charts, and carbon footprint assessments to ensure that the building was designed to minimize energy consumption. The EQB approach and building certification process focused on compliance with environmental best practices to ensure that the project met the highest standards in sustainability.

The BDO label

The Occitania Sustainable Buildings (BDO) label was established by the Occitania/Pyrenees-Mediterranean region, in conjunction with various partners including the French Agency for Ecological Transition (ADEME), the Occitania Regional Directorate for the Environment, Planning and Housing (DREAL), and stakeholders in the construction and environmental sector. This regional initiative seeks to promote sustainable construction and encourage the Occitanian construction sector to adopt eco-friendly building practices. The BDO label was designed to fit the region's specific characteristics, while remaining aligned with national and European targets to achieve sustainable development and fight climate change. The BDO certification aims to promote the construction and renovation of eco-friendly buildings in Occitania. To obtain this certification, buildings must meet strict criteria in terms of energy efficiency, resource consumption, indoor environmental quality, water management, and integration into the environment. In short, the BDO certification promotes sustainability and improves comfort for building occupants while reducing the environmental impact of buildings.

Low Carbon Buildings (LCBI) label

The LCBI label is a certification for buildings in Europe that attain high energy performance and significantly reduce their carbon footprint throughout their lifecycle. It recognizes buildings that use low-carbon materials, sustainable construction techniques, and energy-efficient systems, all of which help fight climate change. This label has four pillars: construction (intelligent mix of materials and ecodesign); operation (low-carbon energy); carbon storage (use of bio-based materials); and the circular economy (selective deconstruction, reuse of products, shared spaces, and the potential to repurpose or extend buildings). It certifies that the building has an exemplary carbon footprint.

Energy-Plus Building & Carbon Reduction label

The Energy-Plus Building & Carbon Reduction label (E+C-) is a French certification that assesses the capacity of buildings to produce more energy than they consume (energy plus) and to reduce their greenhouse gas emissions throughout their lifecycle. This label encourages the consumption of renewable energy, the implementation of energy-efficient solutions, and the use of lower-carbon building materials.

For more information about these labels or any other requests regarding the circular construction approach and timber frame buildings, please contact our experts: we.expert@wsp.com

LABELS THAT RECOGNIZE THE PROJECT'S ENVIRONMENTAL APPROACH

"Our team managed the building certification process, which enabled the project owner to obtain the bronze BDO label, the highest Low Carbon Buildings (LCBI) rating (Excellence) and the Energy-Plus Building & Carbon Reduction (E+C-) certification. These certifications recognize the whole building's energy efficiency, sustainable resource consumption, indoor environmental quality, water management, and integration into the environment," said Aurélie Croze, project manager at WSP.

This timber frame building in the Cambercérès neighborhood is a major step toward a more sustainable future for Montpellier. By combining the circular economy, decarbonization, energy efficiency, and quality of life, this project sets the standard for future constructions in the region and beyond. The building demonstrates that urban development can go hand in hand with environmental protection, while offering high-environmental-quality living and working spaces.

Toward a sustainable, innovative neighborhood: The Baar Süd project

The development of the Baar Süd neighborhood in Zug, Switzerland is an ambitious initiative: the aim is to create a dynamic urban area that meets the needs of the local community. This project's approach hinges on innovation and sustainability, highlighting sustainable building practices. We spoke to Andreas Jäger, manager of the Baar Süd project for Implenia.

Can you give us an overview of the Baar Süd development and its main aims?

The Baar Süd development is a mixed district that will offer some 400 apartments and around 1,000 jobs. It's being built on a plot known as Unterfeld Süd in the south of Baar, right next to the Lindenpark commuter rail station. The overarching concept was devised in conjunction with the local authority, with and for the Baar community. Implenia is responsible for developing four buildings in the first two phases, on behalf of investors in the individual construction sites. To complete the area, a third phase will be carried out at a later date by a community of heirs.

To meet local demand for a diverse housing offer, about a quarter of the apartments will be affordable rental housing, and the rest will be rental and owner-occupied apartments in various sizes and price categories. The local population will be given priority when the housing is allocated. Around 29,000 m² of commercial premises will provide space for attractive offices, and the buildings' ground floors will be used for services such as small shops, cafés, and restaurants, enhancing the overall offering and bringing the area to life.

Three high points in the built fabric will allow the neighborhood to be densely populated, making economical use of the available land. Given the population density, demand for open space is especially high, so we're incorporating a variety of green spaces to enhance liveability.

«

WSP is the planning team's local partner for structural planning, building services, fire protection, building physics, and sustainability. We really value the fact that WSP brings together so many planning disciplines under one roof—this makes it much easier to coordinate day-to-day activities.

Andreas Jäger

Manager of the Baar Süd project for Implenia

Which particular aspects of the project involve circularity and sustainability?

The buildings were planned in line with criteria from the Swiss Sustainable Building Standard (SNBS). This ensures we've fully considered all three aspects of sustainability: the environment, society, and the economy. The Baar Süd location is an advantage in itself. For example, the excellent transport links mean we need around 25% fewer parking spaces than the number calculated by the Swiss Road and Traffic Association (VSS).

In terms of the environment, we're planning to construct a substantial part of the buildings in both phases from timber, which saves on embodied energy. An ingenious rainwater management system uses the precipitation collected to passively cool its surroundings while reducing the volume of water fed into the wastewater system.

Concerning society, we quickly introduced a participatory process to obtain regular project feedback from the local community. This helps us keep the project requirements up to date. At the start of the project, we established the underlying urban planning structure by working with the Baar population and experts, with leadership from the municipality of Baar. We also regularly organize open meetings on specific topics to discuss the ongoing work with stakeholders.

As for the economy, we aim to create value for the region and have adopted a whole life-cycle approach.

What role does WSP play in the project?

WSP is the planning team's local partner for structural planning, building services, fire protection, building physics, and sustainability. We really value the fact that WSP brings together so many planning disciplines under one roof—this makes it much easier to coordinate day-to-day activities. The difficult site conditions here mean we strongly rely on WSP engineers' experience with other local developments.

Have you used innovative technologies for this project, such as BIM? Is WSP supporting you with this, and how does the technology add value?

Since the first architectural competition opened for the Baar Süd project, Implenia has focused on digital planning. For instance, we submitted a digital 3D model of the buildings instead of using plaster; it contained all the necessary figures, making evaluation easier. We systematically used BIM for planning from the start, and our project partners at WSP have also helped us effectively coordinate planning between the different specialist roles.

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The Roucas-Blanc marina: *A sustainable project for the 2024 Games and beyond*

The Roucas-Blanc Marina was designed to host the Olympic sailing events at the Prado beaches in Marseille, France. This infrastructure is intended to last long after the Games, becoming home to the municipal sailing center and national sailing center (Pôle France de Voile). It could also be made available to the town's clubs and organizations based on calls for projects.

Hadrien Freydefont
Project Manager
at WSP France

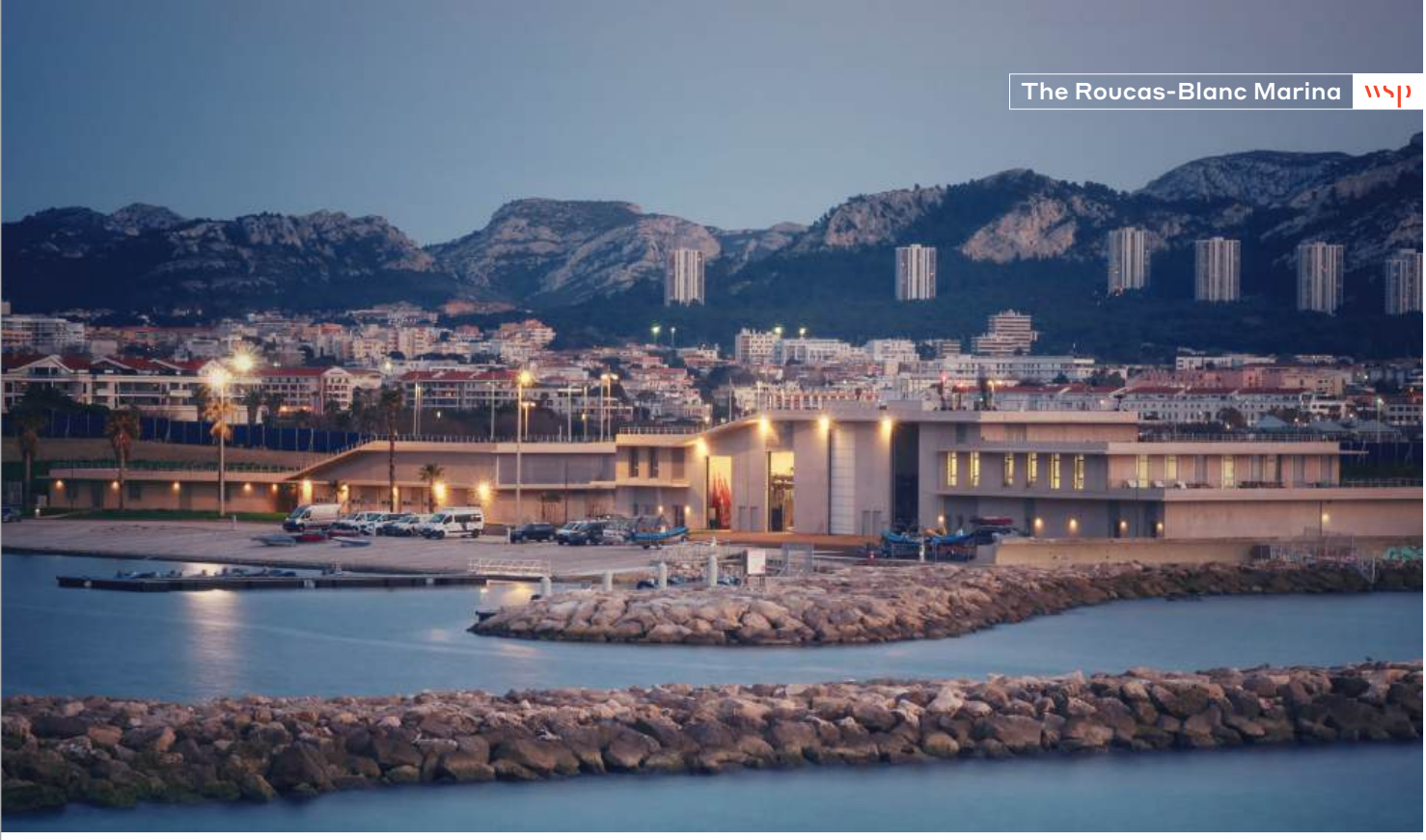
MODULAR DESIGN TO MEET MULTIPLE OBJECTIVES

From the outset, the redevelopment of the Roucas-Blanc Marina was designed to meet two objectives: to host the sailing events of the 2024 Summer Olympics bringing together 330 athletes from 10 different disciplines, and to transform it into a watersports complex after the Games for clubs and organizations in Marseille. In order to succeed, the town, working with WSP, opted for modular infrastructure.

"As a multi-discipline engineering consultancy, WSP took care of all the technical elements and environmental studies. We also helped the client obtain the Mediterranean Sustainable Building certification (BDM)," said Hadrien Freydefont, project manager at WSP.

SUSTAINABLE DESIGN TO FULFILL A LONG-TERM VISION

The Roucas-Blanc Marina was designed according to strict environmental standards, meeting the BDM label and passive building consumption requirements. A resource evaluation was also carried out beforehand to maximize the reuse of materials, either on site or from other construction sites in the region. The project incorporated a large portion of bio-based or recycled materials, such as recycled cellulose insulation, marmoleum floors (a bio-based product derived from wood waste), or recycled aluminum joinery. The use of 40% low-carbon concrete also reduced the construction's carbon footprint.



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OPTIMIZATION AND RESILIENCE

Design efforts were also aimed at making the infrastructure resistant to very hot weather. Although the marina is intended to be used all year round, special attention has been paid to its thermal inertia in summer. A bioclimatic study was carried out to ensure optimal comfort in summer without the need for air conditioning, in compliance with BDM standards.

Fixed sun breakers were installed to reduce the energy consumption of heating and cooling. The orientation of the buildings and the facades were designed to respond to local weather conditions. The buildings also meet the E3C1 certification standards, attesting to their high energy performance and low carbon emissions.

RECOVERY IN ALL ITS FORMS

Whether before, during construction, or at the time of use, the recovery of materials, resources, and waste was at the heart of the approach.

The existing buildings were used as a base for construction and storage before being moved and transformed into watersports complexes in Corsica. The second life given to these structures illustrates the project's circular component and closed loop design.

Another element was also designed in a closed loop: water. "As the construction site is close to the Mediterranean and not connected to the local rainfall run-off network, we had to pay close attention to water use and treatment," said Hadrien Freydefont. Wastewater from showers is reused to preheat domestic hot water. In addition, localized rainwater treatment and the recycling of construction-related water through a mini-treatment plant have made it possible to recover this resource and avoid discharging pollutants into the Mediterranean."

Regarding biodiversity, the Roucas-Blanc Marina has obtained the Effinature certification, which attests to the environmental performance of buildings, with an emphasis on the preservation of local biodiversity. It assesses how projects incorporate measures to protect and promote flora and fauna, such as the creation of animal lodges and the sustainable management of green spaces. This certification ensures that the building meets rigorous criteria for sustainability and ecological integration. As part of the Roucas-Blanc redevelopment, bird houses, insect hotels, and permeable surfaces were installed and branches were preserved during the work to provide temporary shelter for local wildlife. This ecological component was taken into account throughout the project, in collaboration with biodiversity experts.

Waste was also subject to several recovery measures. Thanks to careful sorting and recovery, a 90% recycling rate was achieved, well above the 70% required by regulations. Each type of material was sent to specialized channels for optimal recovery.

A MODEL TO FOLLOW

The Roucas-Blanc Marina is an inspiring example of integrated engineering. It demonstrates the engineers' ability to provide tailor-made solutions to address multiple challenges on all scales and at all stages of a project. By combining sustainability, innovation, and resource optimization, this project has become a model for the construction of buildings and infrastructure that better serve communities.

E3C1 certification

The E3C1 certification is an energy performance and carbon footprint label awarded to buildings that meet specific criteria.

› E3 (energy performance level 3)

- Primary energy consumption: Must be less than 40 kWh/m²/year for new residential buildings (according to current regulations).
- Thermal performance: Buildings must have a heat transmission coefficient (U) of less than 0.15 W/m².K for walls and ceilings.
- Equipment efficiency: Heating, cooling, and ventilation systems must be more than 90% efficient.
- Renewable energy: Renewable energy sources must make up at least 20% of the building's total energy needs.

› C1 (Level 1 carbon emissions)

- CO_2 emissions: Buildings must have a carbon footprint of less than 10 kg CO_2/m²/year for the entire lifecycle, including construction, use, and demolition.
- Building materials: The materials used must have a low global warming potential (GWP) and a low carbon footprint, with emissions of less than 200 kg CO_2/m² of usable surface area.

Mediterranean sustainable buildings (BDM) certification

The BDM certification evaluates buildings according to criteria specific to the climatic and environmental conditions of the Mediterranean region.

› Energy efficiency

- Primary energy consumption: Buildings must have a primary energy consumption of less than 50 kWh/m²/year for residential buildings, including all forms of energy used.
- Heat transfer coefficient: The requirements are usually around 0.20 W/m².K for walls and roofs, depending on the specific climatic conditions.
- Heating and cooling systems: Equipment efficiency must be greater than 85% for heating systems and 90% for cooling systems.

› Environmental impact

- Reducing carbon emissions: Buildings must aim for at least a 30% reduction in CO_2 emissions compared to traditional building standards.
- Environmentally friendly materials: Materials with a reduced carbon footprint must be used, with specific criteria for local and sustainable materials.

› Comfort and health

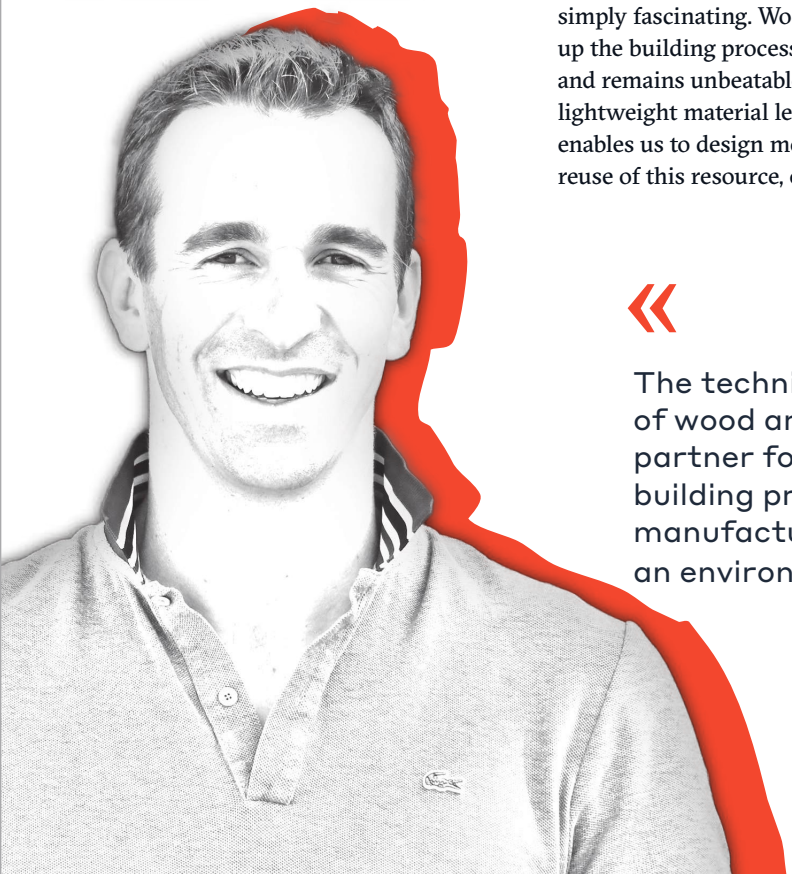
- Indoor air quality: VOC (Volatile Organic Compounds) levels must be less than 0.5 mg/m³ in indoor air.
- Natural lighting: Spaces must have a daylight factor of 2% or more to ensure sufficient lighting without using artificial lighting alone.
- Acoustics: Noise levels must comply with acoustic comfort standards, with a minimum sound insulation of 45 dB between private and common areas.

A symphony of wood, *or how timber is gaining ground in sustainable construction*

Wood is one of the most remarkable materials for sustainable buildings, due to its qualities, potential, and the enthusiasm it inspires. It opens up an infinite palette of technical possibilities, offering much more than its naturally low environmental impact and excellent energy performance. Wood provides endless inspiration—whether in the form of solid timber, which sparks the ingenuity of designers and promotes local traditions—or engineered wood, which pushes back structural limits and enables bold architecture. All in all, wood is a rising star in modern, sustainable, and circular construction. We spoke to Yohann Jacquier and Bastien Grandet, two experts in wood construction at WSP, based in Switzerland and France respectively, to hear both their viewpoints.

Wood is often said to be a key material for the circular economy and sustainable construction. Why?

Yohann Jacquier: The technical characteristics and environmental benefits of wood are simply fascinating. Wood is the perfect partner for the construction industry: it speeds up the building process with its Lego-style assembly of pre-manufactured components, and remains unbeatable from an environmental perspective. This natural, renewable, lightweight material leads the way in sustainable and circular construction. Wood enables us to design modular structures that can be dismantled. This encourages the reuse of this resource, extending its lifecycle and reducing construction waste.



« The technical characteristics and environmental benefits of wood are simply fascinating. Wood is the perfect partner for the construction industry: it speeds up the building process with its Lego-style assembly of pre-manufactured components, and remains unbeatable from an environmental perspective.

Yohann Jacquier
Wood construction expert at WSP, based in Switzerland

Bastien Grandet: Wood has a very different carbon footprint from other, more traditional construction materials like concrete. It's therefore a pivotal solution for eco-labeled buildings, such as Biobased, Low-Carbon Buildings (LCBI) or E+C-. Timber frame construction is set to play an important role in reducing the carbon footprint of buildings, as new French environmental regulations (RE 2020) will soon apply to the healthcare and industrial sectors. On the one hand, using wood lowers building structure emissions, which are the main source of emissions in most concrete structure projects. On the other, timber frames help reduce the project's overall carbon footprint, quite simply because wood naturally stores biogenic carbon. Wood is considered a "carbon sink" because it absorbs carbon dioxide (CO_2) from the atmosphere as it grows, which it stores as biogenic carbon. Trees absorb CO_2 from the air during photosynthesis and use this carbon to form their structure. Once trees have been transformed into structural timber, their wood continues to store carbon as long as it remains intact. This means that using wood in construction can help reduce a project's overall carbon footprint by capturing and storing carbon.

In your opinion, what are the main benefits of using wood in construction projects?

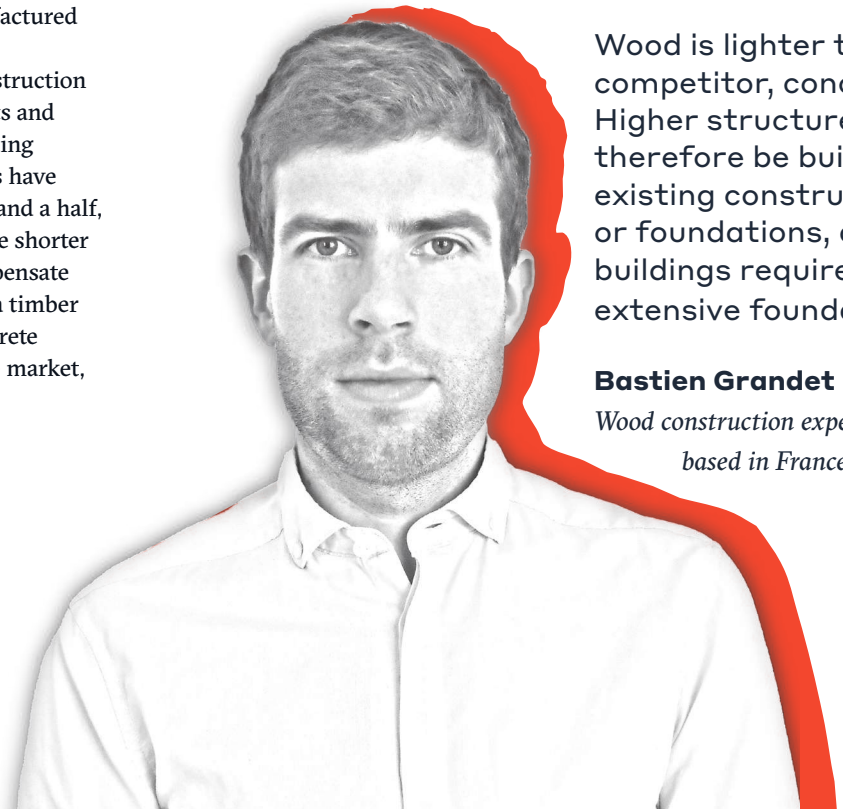
Yohann Jacquier: Wooden building components can be pre-manufactured and easily assembled, which considerably shortens the construction process, helping to reduce costs and increase the efficiency of building projects. Timber frame schools have already been built in a month and a half, during summer vacation. These shorter construction timeframes compensate for the slightly higher cost of a timber frame in comparison to a concrete structure, about 3 to 5% on the market, depending on the country.

Bastien Grandet: Wood is lighter than its competitor, concrete. Higher structures can therefore be built on existing constructions or foundations, and new buildings require less extensive foundations. Another advantage is that timber frame building sites are less noisy, produce less dust, and take less time. Furthermore, the architects we partner with particularly appreciate the warm, natural effect of wood, as well as the flexibility it offers for construction.

In your opinion, what are the main challenges to maximize the use of wood, both from a technical point of view and in relation to the circular economy?

Yohann Jacquier: One major challenge is to ensure that timber is correctly proportioned to meet building regulations and structural constraints, while providing occupants with equivalent acoustic and thermal performances in comparison to standard materials. From a structural point of view, wood has the same potential as steel or concrete. Building spans must therefore be adapted to the potential of wood, to ensure that timber structures are well proportioned. To ensure fire safety, a performance-oriented approach is taken. By sizing timber to resist fire for 30 to 60 minutes, as is the case for other materials, buildings can be safely evacuated if there is a fire. Active or passive protection measures are taken to shield wooden structures from fire. Active protection includes systems like sprinklers or smoke detectors, which are automatically activated if a fire breaks out. Passive protection involves treating wood with fire retardant or using fire-resistant construction materials to prevent flames from spreading.

Bastien Grandet: Although timber structures are one of the oldest construction methods, reinforced concrete structures have been used for the vast majority of buildings in France for over 50 years. Many construction sector players may be reluctant to use wood. It's the engineer's role to raise awareness about the technical and physical capabilities of wood, propose solutions, and highlight this material's exceptional performance, which is often overlooked. Wood opens up infinite possibilities!



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Wood is lighter than its competitor, concrete. Higher structures can therefore be built on existing constructions or foundations, and new buildings require less extensive foundations.

Bastien Grandet

Wood construction expert at WSP, based in France

10 WAYS
THAT WOOD ADDS VALUE
for construction and the circular economy

As a construction material, wood adds significant value at every stage in the building process, and contributes to outstanding technical, security, economic, and environmental outcomes. Wood stands out in the following ways:

1. SUSTAINABLE AND ECOLOGICAL: Wood is a renewable material that reduces a building's carbon footprint by 30% and cuts greenhouse gas emissions by 50% in comparison to concrete, thus helping fight climate change.

2. QUICK TO INSTALL: Using pre-manufactured components, timber frame constructions can be built 20 to 30% faster, reducing construction time and efficiently meeting urgent building requests.

3. CIRCULAR ECONOMY: Wood can be dismantled and reused, thus contributing to sustainable resource management.

4. PERFORMANCE: Wood provides excellent thermal and acoustic insulation, improving the comfort and energy efficiency of buildings, and reducing heating and air conditioning costs.

5. ATTRACTIVE AND FLEXIBLE: Wood offers a wide variety of architectural possibilities, inspiring diverse and innovative designs.

6. RECYCLABLE: At the end of their lifecycle, 90% of wooden materials can be recycled or reused, reducing construction waste.

7. COMPETITIVE: Although wood is slightly more expensive than concrete (about 3 to 5%), it compensates for this price difference by reducing building time by 20 to 30% and decreasing loads on foundations, making it economically viable over the long term.

8. FIRE SAFE: Effectively designed timber buildings meet fire safety standards and enable safe evacuation in an emergency, offering fire resistance of up to 90 minutes.

9. EFFICIENT: Wood lessens the load on foundations (it is up to 50% lighter than conventional materials), reducing the amount of concrete used, which saves resources and cuts costs.

10. WELL-BEING: Wood creates soothing, comfortable indoor environments, improving quality of life for occupants and increasing productivity by 15% in workspaces.

Integrating wood into construction offers many advantages from an environmental and a practical perspective. This material is a wise choice for projects that prioritize sustainability, efficiency, and occupant well-being.

Infrastructure gains multiple uses: *The Cap Estel Tunnel*

Under the famous Cap Estel Cliff, in the village of Èze, the tunnel that connects Nice (France) to Monaco is undergoing major transformations. The existing tunnel will be brought up to standard to comply with European regulations on road tunnel safety. An emergency gallery and escape routes will be built parallel to the tunnel. To top it all off, a bicycle path will complete the project.

Célie Jeu
Project Manager
at WSP France

A PROJECT THAT COMBINES SAFETY AND MOBILITY

The Cap Estel Tunnel, which links Nice to Monaco, is the scene of a large-scale project as part of an initiative to improve the tunnel's infrastructure and safety. This 618-meter-long bidirectional structure, inaugurated in 1993 in Èze, will be brought up to standard. The program includes: the construction of evacuation galleries and emergency exits; upgrades to the smoke evacuation systems and safety equipment; and the building of an additional gallery to accommodate a bicycle path on the Monaco to Nice side, allowing cyclists to travel safely from one side of the Cap Estel Tunnel to the other.

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OPTIMIZING THE USE OF INFRASTRUCTURE BY MULTIPLYING ITS USES

In leading this ambitious project, the Nice Côte d'Azur Metropolitan Area is addressing two issues: road safety and sustainable mobility. By modernizing the Cap Estel road tunnel to comply with European standards, it will meet regulatory requirements while providing cyclists with a new path by pooling uses. This new infrastructure, integrated into the 2021-2026 Metropolitan Bike Plan, aims to support the local cycling policy by developing adapted infrastructure.

By optimizing the use of this gallery and combining evacuation and rescue functions with sustainable mobility traffic, Nice Côte d'Azur Metropolitan Area is demonstrating its willingness to design projects that best meet users' varied needs. "Choosing to implement a bicycle path from the design phase ensures that the new gallery is used daily and not only in the event of a fire," said Célie Jeu, project manager at WSP.

CHALLENGES FOR THE ENGINEERS

WSP is the project leader managing the tunnel's underground works and equipment in association with the architectural firm Ateliers Prado, which is responsible for the landscape integration of the bicycle path's exit on a Natura 2000 classified cliff. WSP engineers are responding concurrently to the technical challenges arising from the construction of the tunnel in a confined space. Careful planning of the project stages is required to minimize disruption to surrounding residents and the SNCF train line. Measures will be put in place to achieve this objective, from vibration and noise control to controlling the speed of excavation to regulate the transportation of rubble. "WSP has already carried out this type of project, notably for the Siaix tunnel in France, which has both an emergency exit and a bidirectional bicycle path. Our previous experience in this area is essential for the Cap Estel project," said Thibaut Métivier, another project manager involved in the project.

WHEN CIRCULARITY IS ADDED TO MODULAR DESIGN

As part of this project, 85% of the earth excavated by the tunnel boring machine is expected to be reused. In doing so, the project will not only reduce the amount of truck traffic needed to transport these materials, but also significantly reduce the quantities sent to landfill. This approach reflects a real gain both environmentally and logistically, offering a win-win solution for all stakeholders.

> Choosing to implement a bicycle path from the design phase ensures that the new gallery is used daily and not only in the event of a fire.
>
> **Célie Jeu**
> *Project Manager at WSP France*

Twenty thousand leagues under the earth:

Ambitious goals for the CERN FCC project

As part of the feasibility study for the Future Circular Collider (FCC), scheduled to be built between 2033 and 2040, the European Organization for Nuclear Research (CERN) organized the "Mining the Future" innovation competition to seek sustainable solutions to reuse the materials excavated during the project. Jérémy Voiron decided to take up this challenge. Drawing on his own expertise and enthusiasm, as well as WSP's potential for innovation, the engineer and his team won first prize in the competition. Read on for more details.

Today, when engineers design projects, they must also consider materials recovery. This constraint makes their job more complex, but also much more interesting. For Jérémy Voiron, Head of the Geotechnics and Underground Works Group at WSP and a specialist in the management of excavated materials, this is nothing new. With his multidisciplinary team, the graduate of the IMT Mines Alès engineering school in France won the "Mining the Future" European project launched by CERN, which aimed to identify the best solutions to sustainably reuse excavated materials.

VOIRON SET HIS SIGHTS ON FINDING SUSTAINABLE SOLUTIONS TO MANAGE EXCAVATED MATERIAL

The European Organization for Nuclear Research plans to build a new circular collider (FCC) between 2033 and 2040. The construction of this underground tunnel, with a circumference of around 91 km, would generate about 6.5 million m^3 of excavated materials, or three times the volume of the Great Pyramid of Giza. Landfill sites in the French-Swiss border region are overloaded, limiting this form of waste disposal. Solutions to reuse excavated materials must therefore be found. "During my previous projects, I was responsible for managing excavated materials and I was particularly surprised that so few waste recovery chains actually existed," said Voiron. "From a financial, environmental, and social perspective, it makes no sense to waste these materials."

EXCAVATED MATERIALS FROM THE FCC: AN OPPORTUNITY TO TURN WASTE INTO RESOURCES

The geological formations that will be encountered during the FCC project fall into three categories: red molasse of the Lower Chattian, underlying moraines, and limestone formations. Reclaiming molasse is difficult, as this soft sedimentary rock cannot be directly reused as a raw material for industrial processes. That is where the power of WSP innovation comes in. "To meet this challenge, we demonstrated the technical feasibility of the three solutions that we proposed," said Voiron. "We evaluated their environmental impact, identified short distribution chains, and proved that they were economically viable, especially in the local, cross-border market."

INNOVATIVE PROGRESS TOWARD THE SUSTAINABLE MANAGEMENT OF EXCAVATED MATERIALS

The first innovation involves separating and grading sand granules from the excavated molasse by size so that they can be used for various purposes. To do this, the sandstone blocks are crushed and ground to obtain coarse sand. The sand particles are then separated and mixed to produce concrete or bedding sand. The second innovation is the thermal activation of clays to produce low-carbon cement, with just water as a by-product, rather than CO_2. The performance of this cement is similar to conventional

cement. "This component of the project is interesting since cement production is one of the most polluting industries in the world," said the engineer. Non-thermally reactive clays and silts can be used to produce raw earth concrete by adding hydraulic binders and even plant fiber. This type of low-carbon concrete exhibits very good thermal performance in response to temperature variations. Traditionally known as rammed earth, "adobe" or "wattle and daub," it can be used in building construction. The third and final innovation uses artificial intelligence in the excavation and production chains to effectively pre-sort materials before they enter the chain, to improve efficiency and reduce reserve stocks.

One of WSP's many strengths is our knowledge of all the sectors and players involved in every stage of the project. Voiron worked with leading experts in the separation of materials, aggregates, and cement. He also approached local construction companies who will be the direct recipients and users of the materials and resources produced. "Lastly, I called upon leading industry experts to challenge our proposed concepts."

The project developed for the "Mining the Future" competition could set an example for future molasse recovery initiatives in the region and beyond. Voiron and WSP are therefore pioneers in this promising sector.

Jérémy Voiron is an engineer who specializes in underground and geotechnical work. His expertise includes supervising and monitoring construction sites, designing complex geotechnical structures, and digital modeling. He has led projects involving underground work, underpinning, reinforcement, and retaining structures, and has conducted geotechnical studies in specific geological and hydrogeological contexts.

With his wide-ranging skills, Voiron is recognized as a leading expert in his field.

Jérémy Voiron
Engineer specialized in underground and geotechnical work

5 KEY ADVANTAGES of reusing excavated materials

1. Reduce strain on landfills:

By reusing excavated materials, we can avoid sending them to overloaded landfill sites and help reduce pressure on the environment.

2. Promote local resources:

By utilizing locally sourced materials, we can reduce dependence on external resources and foster a more local, sustainable, and resilient economy.

3. Foster circularity:

By incorporating recovered materials into the construction sector supply chain, we can reduce the need to extract more resources, thus promoting a circular economy.

4. Reduce the carbon footprint of buildings:

By using innovative techniques such as the thermal activation of clay or the production of low-carbon raw earth concrete, we can reuse excavated materials to help reduce the overall carbon footprint of construction projects.

5. Create new markets and economic opportunities:

By developing recovery chains for excavated materials, we can foster new economic opportunities for local companies and help develop new sustainable construction markets.

SPOTLIGHT

Haliotis *awaits its transformation*

Haliotis 2, the largest wastewater treatment facility project in France, and one of the most extensive in Europe, is set to become a major reference in its field. The project aims to address demographic and environmental challenges and boost the resilience of the Nice Côte d'Azur Metropolitan Area. The constant emphasis throughout the modernization of this Nice-based wastewater treatment facility will be to increase energy efficiency, promote the circular economy, and foster technological innovation. Olivier Damour, Director of the Haliotis 2 project for Eau d'Azur, the Nice Côte d'Azur Metropolitan Area water and sanitation authority, explains the project in detail.

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A PROJECT TO SERVE THE WHOLE METROPOLITAN AREA

The Haliotis Wastewater Treatment Facility (WWTF) faces several major challenges. Previous modernizations of aging infrastructure mainly date back to 1988 and 1972, so it is now essential to envisage renovation work. “Once we had ascertained the need to modernize the WWTF, we started to plan how this should be done,” said Olivier Damour. The Haliotis 2 project will increase wastewater treatment capacity to serve the equivalent of 680,000 people, enabling the facility to treat effluents from a total of 26 municipalities, including 6 additional municipalities on the right bank of the Var River, taking into account future population growth. “During the modernization of the WWTF and the extension of its treatment capacity, several issues will take center stage, primarily environmental issues: the implementation of resource recovery principles as stipulated by the circular economy (in particular water and energy recovery); the reduction of the facility’s carbon footprint; and innovation to better protect the Mediterranean and preserve high-quality swimming water,” said the project director.

WATER RECLAMATION: A CENTRAL ISSUE FOR THE NEW WWTF

As water stress continues to increase, Haliotis 2 will play a critical role in managing water resources with its new system to reuse treated wastewater. This specific process will treat and purify wastewater so it can be reused for other purposes, such as watering green spaces or cleaning streets and roads. Damour pointed out that Nice has one special feature: the city already has a 250 km raw water network that dates back to the last century. "The water produced by the water reclamation system will be injected back into this network. This initiative should save up to 5 million cubic meters of water per year, the equivalent of 2,000 Olympic swimming pools. This is a very significant step in protecting water resources, as it prevents water being drawn from the natural environment," he said.

By 2028, Haliotis 2 is set to become the first water reclamation facility in France to redistribute water via a multi-purpose network.

A TECHNOLOGY HUB TO PROTECT BIODIVERSITY AND RESOURCES

Haliotis 2 will feature an innovation laboratory to research the reuse of treated wastewater, study micropollutants and microplastics, and evaluate the most effective systems. Damour explained that new treatment processes, coupled with upgradeable system designs, will enable the facility to anticipate and meet the most stringent water quality standards. Proactive management of water networks will also enable better forecasting and management of extreme weather events. Haliotis 2 will use artificial intelligence to analyze data and create virtual representations of its systems. By combining historical data and Météo France weather forecasts, these tools will improve management of weather events and help choose the most effective configurations. For example, if rain is forecast, these systems will enable wastewater flow to be adjusted and tank levels to be optimized, reducing the risk of spillover and protecting water quality in the natural environment.

> This initiative should save up to 5 million cubic meters of water per year, the equivalent of 2,000 Olympic swimming pools. This is a very significant step in protecting water resources, as it prevents water being drawn from the natural environment.
>
> **Olivier Damour**
> *Director of the Haliotis 2 project for Eau d'Azur*

A PROJECT THAT COMBINES EFFICIENCY AND SUSTAINABILITY

Resource recovery, which forms the basis of the circular economy, is one of the facility's main priorities: all the by-products of the wastewater treatment process will be used to generate sustainable resources and renewable energy for the local area.

"We will implement a methanation process to produce biogas, reclaim calories from treated wastewater using a heat pump system, and recover energy from dried sludge," said Damour.

Calories will be recovered from treated wastewater using a heat exchange loop connected to substations equipped with heat pumps, which will produce 27 GWh per year for the Grand Arenas neighborhood and the airport. The wastewater treatment process also generates organic matter, which can be used to produce biogas through methanation. The biogas produced at Haliotis 2 will be injected into the French GRDF gas network, thus producing 43 GWh per year of local renewable energy—enough to drive 290 LNG buses or supply gas for 11,000 homes for a year.

The remaining organic matter after the biomethanation process will be transformed into dried sludge and sent to the Ariane Energy Recovery Facility (ERF). "We are setting up a system where one facility's waste products become resources for another," said Damour. "The dried sludge from Haliotis 2 will be transferred to the Ariane ERF, where it will be incinerated to produce heat and energy from 2025 onwards." The calorific value of this dehydrated sewage sludge will contribute 26 GWh per year to the production of heat and steam at the Ariane ERF.

At the same time, the volume of sludge produced will decrease by 70% in comparison to current operations, resulting in the use of three times fewer transport trucks. In addition, since the sludge will be processed locally (rather than sent to facilities in the Bouches-du-Rhône, Vaucluse, or even Côte d'Or regions), the number of trucks leaving the facility will fall by 70%, and will travel 93% fewer kilometers. The transition will also be made to electric trucks. In total, this will reduce annual emissions by an equivalent of 15,000 metric tons of CO_2.

By implementing biomethanation, energy recovery from liquid and dried sludge, and heat recovery from treated wastewater, the Haliotis 2 complex will produce four times more energy than it currently consumes.

A MAJOR ASSIGNMENT FOR WSP

The Haliotis 2 project is part of a global performance contract that aims to ensure the effective design and optimal operation of the facility. A consortium of companies was formed to tender for the project. Suez Service France will operate the facility on behalf of the consortium, with Degremont (Suez) as the authorized representative and process manager. WSP will act as internal project manager, and will be responsible for ensuring compliance and validating the studies carried out by the various contractors involved in the project, particularly in the following

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fields: water reclamation, methanation and biogas, and sludge dehydration.

As internal project manager, WSP will make sure that the studies conducted by these contractors meet the project's specific standards and requirements. Close cooperation between all the project participants will ensure the effective implementation of solutions for water reclamation, methanation, and sludge dehydration, and contribute to the overall success of the Haliotis 2 project.

The modernization of this WWTF is a major step forward for water resource management in France. The project's holistic approach to resource recovery demonstrates its commitment to sustainability and eco-efficiency. By transforming wastewater into reusable water using its water reclamation system, Haliotis 2 will set a new standard among French multi-purpose WWTFs. By turning wastewater calories into energy using a heat pump system, the facility will help supply energy to the Grand Arenas neighborhood and Nice Côte d'Azur airport. The whole sludge recovery process, first using methanation to produce biogas, then the ERF to produce energy from dried sludge, also illustrates the project designers' holistic approach. This model project, with its blend of technological innovation and environmental responsibility, is an inspiration for the efficient and sustainable management of water and energy resources.

Haliotis 2 key figures

4 times more

energy produced than the facility's current energy consumption

43 GWh/year

of biomethane produced, enough to heat 11,000 homes or run 290 buses

27 GWh/year

produced by recovering calories from treated wastewater using a thermal loop to supply heating and air conditioning for the Grand Arenas neighborhood and the airport

5 million m^3

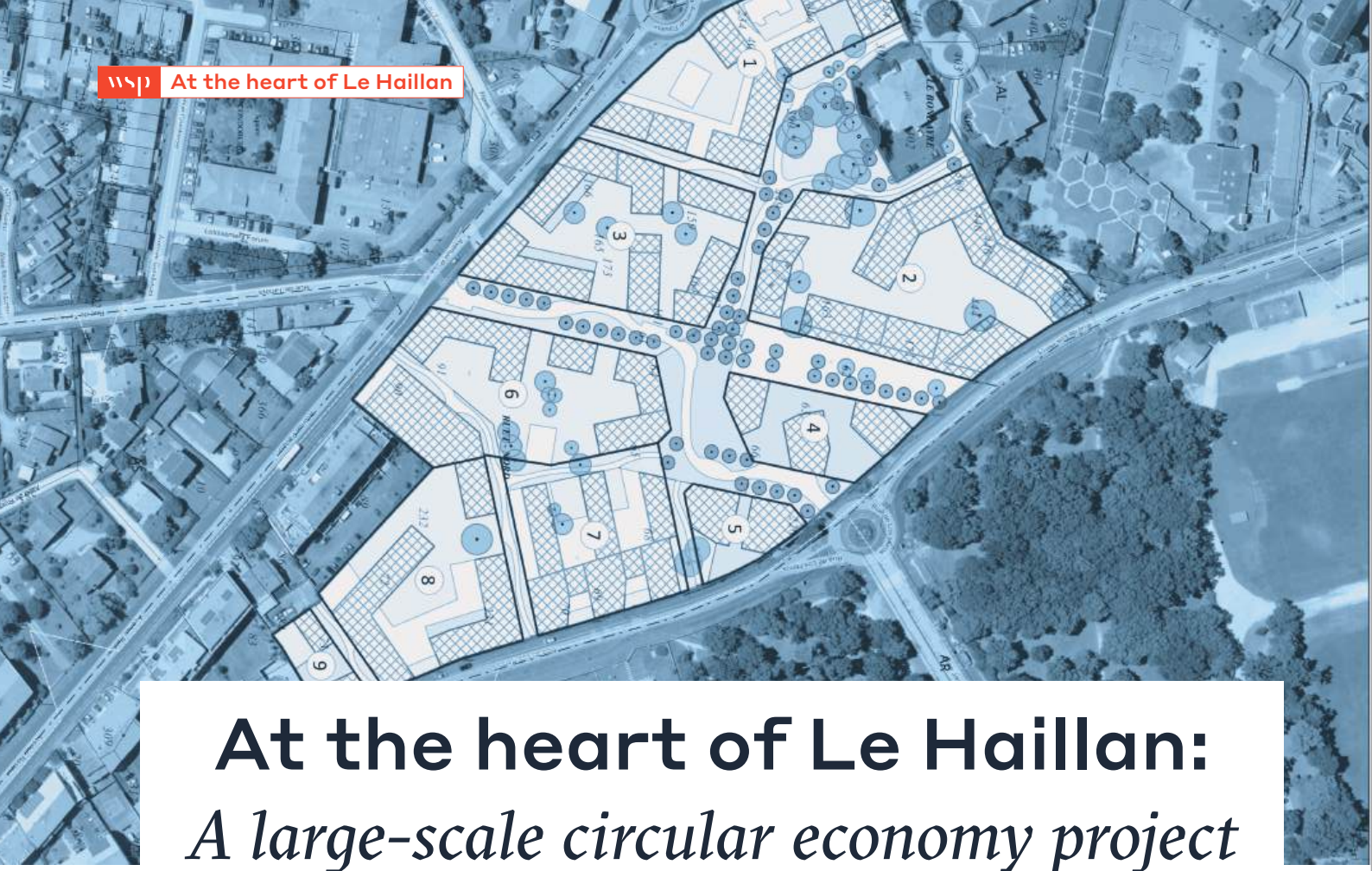
of treated wastewater reused to water green spaces and clean roads

250 km

of raw water networks to distribute and reuse treated wastewater

90%

of microplastics eliminated



At the heart of Le Haillan:
A large-scale circular economy project

An integrated public-sector redevelopment at the heart of Le Haillan in greater Bordeaux, France has the ambitious goal of creating a mixed-use, multigenerational district that embodies circular economy principles on a large scale. This project focuses on the efficient management of materials to cut its carbon footprint, and has a visionary approach to combating fragmented urban sprawl. WSP is in charge of overall planning, management, and coordination between sites, aligning the various participants' needs and schedules to maximize reuse of resources from demolition to construction. We learned more about this in an interview with Project Manager Kemal Yildirim and WSP's Head of Projects Lydie Marin.

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The Cœur de Ville du Haillan development is one of the first project sites to be both a producer and a receiver of materials for recovery.

Kemal Yildirim
Project Manager at WSP

Tell us about the Cœur de Ville project in Le Haillan: What are its main aims in terms of scope and town planning?

Kemal Yildirim: The project to redevelop central Le Haillan covers 4.3 ha, which will accommodate some 500 homes with a total floorspace of 32,000 m². Of these, 35% will be social housing and 30% will be for social or affordable home ownership. These will be combined with 1,000 m² of business premises, including services and office space. The Bordeaux Metropolitan Area—whose developer La Fab is running this project—aims to build a mixed, multigenerational district that brings dynamism to the very heart of Le Haillan, hence the project's name, "Cœur de Ville."

Lydie Marin: This project is part of a wider program called "Living and thriving—50,000 naturally accessible homes," which aims to provide affordable, quality housing along public transportation corridors. The program intends to combat urban sprawl and meet housing demand for the Bordeaux metropolitan area. As part of the Cœur de Ville project, an express bus will also link Le Haillan with Bordeaux's old town in 20 minutes.

What is the circular aspect of this Cœur de Ville project?

Kemal Yildirim: The Le Haillan development is part of La Fab's "urban metabolism" approach, run with project management assistance from the CANCAN architects' collective, who are experts in reusing materials. This initiative aims to connect building sites that produce materials—particularly through demolition—with projects seeking materials. This promotes reuse within the metropolitan area and covers all sorts of materials including windows and timber frames. The Cœur de Ville du Haillan development is one of the first project sites to be both a producer and a receiver of materials for recovery.

Lydie Marin: Yes, with resources becoming increasingly scarce and the growing need for homes and infrastructure, this way of working resonates with more and more people. We have experience with this approach from other projects in Nantes, Bordeaux, and Paris, as more and more clients are advocating for recycling, the creation of brownfield sites, and resource recovery. The key is anticipating flows and working with existing resources. With reuse, fewer materials need to be transported, waste streams are less congested, the project's carbon footprint is reduced, and there is less disruption for neighboring residents and the urban environment.

What is WSP's role in this project?

Kemal Yildirim: Our role in this project is overall planning, management, and coordination between sites. In other words, we oversee projects and maintain channels of communication between clients, partners, real-estate operators, the general contractor, and subcontractors. In this case we also include district heating network operators. The guiding principle here is circularity in flows and materials, and the aim is to maximize the transformation of waste from demolition into resources.

Lydie Marin: We work far upstream of each project phase to manage these flows so that we fully exploit the resource reuse potential. The goal is to forecast the materials required

for each step in the project, to identify the resources available on site, and plan out the project phases accordingly. Overall, we adjust the project's phases to the requirements, thus minimizing the length of time materials are stored given the site's size constraints. For example, with other projects such as Pirmil-Les Isles in Nantes, France, we scheduled terracing and works on public areas so we could reuse all the earth from the site on the site itself, minimizing the need for storage.

You mentioned material reuse, recovery, and flows. How do you take these into account?

Kemal Yildirim: We make sure to concentrate flows thanks to storage on site and at a reuse platform (called La Base du Réemploi, in Mérignac). The goal is to share resources so other project managers in the region can potentially reuse them.

From a technical perspective, we schedule the various works packages in phases, but we also do the same for material, sourcing, and storage flows. We coordinate between the different sites so we can optimize these flows at all times. This means ensuring that material from a producer site finds a receiver project as quickly as possible.

Lydie Marin: We routinely implement green construction charters that set out provisions to reduce the quantity of waste produced, introduce waste sorting, and establish where resources will be stored on site. These charters also tell operators which circular economy actions they must take on the project. In short, we operate our circular economy strategy through scheduling, site regulations, and flow management. This also allows us to establish waste recovery streams and create links and consistency between building sites across a given area.

How do you think the circular economy will develop in your sector and in your own work?

Kemal Yildirim: During my research, I noticed that priorities have changed. In the past, the aim was to build

quickly. Now, we take the time to conduct studies and engage in dialogue to best meet future demand in our constructions. Two particularly useful tools for this are modularity and reuse. The way we build is evolving.

Lydie Marin: I agree, the industry is undergoing several transformations. The circular economy is becoming the norm, so we are finding it easier to build circularity into our projects. As Kemal explained, projects no longer follow the same timescales. In the past, projects had to be implemented quickly, which truly limited our ability to adopt a circular economy approach. These days, local authorities and developers are placing growing importance on the upstream phases, which allows us to take the necessary action to recover materials and resources. However, our work is becoming more complex. The zones where we build are ever denser, which poses a real challenge to engineers as they need to dream up increasingly ingenious solutions to reuse materials. Either they create reuse platforms on site, by working on phasing and optimizing how the site is organized, or they can opt for shared platforms outside the project itself.

Is this an area with opportunities for development?

Lydie Marin: Yes, it really is! The regulatory framework is changing. For example, in France, the net zero soil artificialization target introduced by the new climate and resilience law will require us to build on increasingly dense, already urbanized zones. These generate resources for reuse, either in situ or nearby.

Kemal Yildirim: I agree, the law that introduced net zero soil artificialization aims to halve the use of greenfield sites (natural, agricultural, and forestry sites, known in French as ENAF) by 2031. The ultimate target for 2050 calls for the speed at which urban sprawl is eating away at our green spaces to be reduced by half every ten years.

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We operate our circular economy strategy through scheduling, site regulations, and flow management. This also allows us to establish waste recovery streams and create links and consistency between building sites across a given area.

Lydie Marin
Project Manager at WSP

WSP today

69,300
employees across the world

150,000
active projects on all continents

500 offices
in 40 countries to connect with our clients

Committed
to delivering sustainable value to our shareholders and exceptional professional services to our clients

+ Learn more about WSP, our strategy, and our financial performance.

Data for September 2024

OUR STORY

From our earliest roots in the US over 135 years ago to our vast international presence today, WSP has enjoyed continuous growth and expanded our services. Every milestone reached has enabled us to better fulfill our purpose of preparing our communities and environment for the future.

Read more

INSIDE

Harnessing the power of the collective through our internal programs

At WSP, we know that the talent and commitment of our employees are the driving force behind our success. That's why we place a special emphasis on encouraging and promoting this strength through various internal programs designed to foster excellence, innovation, and diversity. Here's a spotlight on the CETF and WSP Global Excellence Awards.

WSP Global Excellence Awards

WSP is primarily a community of experts ready to tackle current and future social, societal, and environmental challenges. Each year, we hold a company-wide competition, the WSP Global Excellence Awards, to highlight the exceptional contributions of our employees and teams.

During the last edition, WSP Western Europe was honored with several awards.

Project of the Year

The "Project of the Year" award went to the "*La Molasse, un nouveau minerai*" project from the Mining the Future competition launched by CERN to manage excavation materials for its Future Circular Collider (FCC) project. The consortium led by Jérémy Voiron, Group Leader at WSP Switzerland, demonstrated our ability to push the boundaries of material valorization and circularity.

Best Display of Leadership

Geoffrey Quintas Neves, Head of the "Sustainability & Energy" business unit at WSP Switzerland, was recognized for his exceptional leadership. His strategic vision and commitment to excellence were acknowledged as an inspiring example for the entire organization.

Best Display of Future Ready

Under the leadership of Geoffrey Quintas Neves, the "Sustainability & Energy" business unit at WSP Switzerland won the "Best Display of Future Ready" award. This distinction underscores our ongoing commitment to innovative and sustainable solutions in the fields of building, energy, and territory.

These achievements reflect our dedication to excellence. Each awardee played a key role in advancing our collective mission, leaving a lasting impact on our projects. We are proud of our teams!

CETF: A laboratory of innovative ideas

Founded in 2016, the Central Europe Task Force (CETF) brings together young WSP talents with diverse backgrounds and roles, working in different countries and selected for their willingness to drive organizational transformation and their ability to collaborate. The CETF's members work closely with the Central Europe management team to design and deploy strategic initiatives. This two-year program allows participants to develop their professional skills, build an international network, and engage in innovative and structuring projects for the company.

About the CETF :

A few years ago, we created the Central Europe Task Force, an initiative to cultivate growth, foster development and provide our employees with opportunities to apply their expertise as in-house strategic advisors for WSP.

The Central Europe Task Force is a group of young, talented, diverse, and non-executive employees under the age of 35 collaborating with the Central Europe leadership team on strategic initiatives.

This group aims to introduce fresh perspectives to WSP's leadership and support strategic decisions to drive change and innovation.

Their focus is to assess WSP's opportunities to navigate this journey while driving commercial value for clients.

« The CETF is a fantastic opportunity to think outside the box and view the business from a broader perspective. It's a great chance to meet young talents, build a strong network, and connect with people from various departments and fields around the world.

Pinar Dalkan
Mechanical Engineer at WSP Switzerland and former leader of the CETF program

Acting locally on global issues

The Future Ready® program

At WSP, we firmly believe that foresight is key. This is why we developed the global Future Ready® program. This visionary initiative anticipates future trends and challenges and inspires everyone at WSP to deliver solutions that drive innovation and sustainability.

This program focuses on four main areas: climate change, society, technology, and resources. By considering upcoming trends such as net zero, extreme weather, the future needs of societies, and how our projects will be used in an AI-enabled world, we make a difference in everything we do. The Future Ready program is giving us huge purpose as a business, putting us at the heart of preparing infrastructure, cities, and societies for the changes to come.

Learn more about our Future Ready program: See the future more clearly with Future Ready | WSP

Participation in the Conference of the Parties (COP) to advocate for a sustainable future

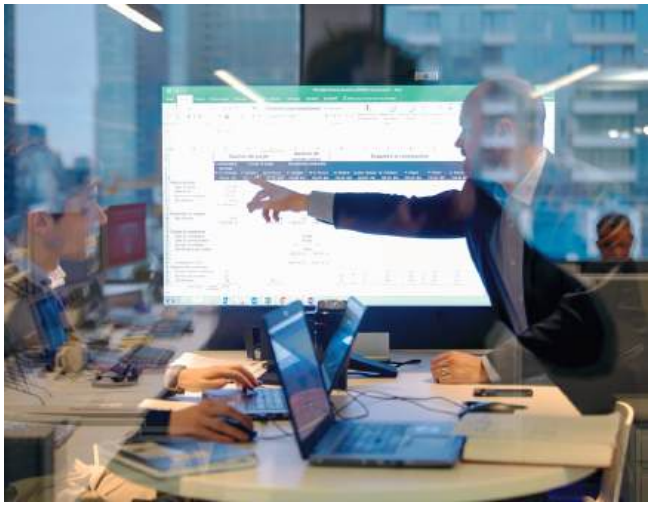
For several years, WSP has distinguished itself through its sustained commitment to COP, becoming a significant player in the global dialogue on climate change. These conferences, which bring together leaders, experts, and decision-makers from all backgrounds, are crucial platforms for defining international climate policies. WSP's presence at these events demonstrates its deep commitment to developing innovative solutions to global environmental challenges.

At COP28 in Dubai, WSP experts shared their expertise on key topics such as climate change adaptation and decarbonization strategies. Their presence enriched the discussions, providing perspectives on how to build a more sustainable and resilient future. By participating, WSP not only demonstrated our commitment to sustainability but also contributed to the dissemination of concrete and effective solutions to tackle global climate challenges.

The more I have read about Future Ready the more I am impressed by the invaluable conversations derived from the key trends. The level of thought that the team drives to achieve is inspiring. This is a great foundation for all of us to deliver solutions for a better future.

Zara Crookes
Senior Opportunity and Framework Manager, UK

Driving innovation in our fields



Open Innovation with the Boost My Startup Challenge

Convinced that collective intelligence and innovation are essential for developing products and services that meet societal needs, WSP Switzerland and UBS's Growth Advisory have joined forces to launch the Boost My Startup Challenge. Since 2021, around 30 startups have registered for this challenge each year, allowing young companies in the fields of engineering, construction, real estate, mobility, and energy to collaborate with WSP and connect with USB-affiliated investors.

In the October 2023 edition, five startups were selected to present their projects at UBS's headquarters in Lausanne: Enerdrape, Exergo, Quanthome, SmartHelio, and Emissium. These innovative companies work in diverse sectors such as geothermal energy, heat and cooling networks, construction data, and greenhouse gases.

At the end of the presentations, Emissium won the Boost My Startup Challenge 2023 for its carbon accounting API, which offers reliable and transparent controls of greenhouse gas emissions from electricity production networks.

In October 2024, WSP and UBS will host the fourth edition of the Boost My Startup Challenge. Stay tuned...

The Innovation Jury for Internal Innovation

WSP Western Europe established an internal innovation process in 2020 to stimulate the development of innovative projects and foster new solutions for clients.

This process is organized in several stages. It begins with the "Idea Factory" phase, where co-creation tools such as creativity workshops and hackathons facilitate the emergence of ideas. Next is project selection, followed by a development stage organized around three innovation areas: Desirability, Viability, and Feasibility. The aim is for the product to be mature and ready to evolve when it hits the market.

This bottom-up process is open to all so anyone can submit an idea to the Innovation Jury. In just two years, it has launched 25 innovation projects.

From projects of all sizes to process improvements to product innovations, this internal initiative allows us to cultivate and grow our employees' ideas.

Maél Péquignot
Business Engineer and Innovation Jury Coordinator at WSP Switzerland

Develop your career with us

Multiple career opportunities: A closer look at learning and apprenticeships

WSP offers many opportunities for students, interns, and graduates.

Participate in flagship projects that have a real impact on the world around you, boost your career, and work on causes that inspire you.

Our openness to the world is matched only by our openness to new ideas. With offices located around the globe, you too could leave your mark beyond borders.

Check out our job offers: Contribute to the change the world needs | WSP

You can do your PhD at WSP!

To stay at the forefront in its fields of activity, WSP participates in France's CIFRE (Industrial Agreement for Training through Research) program. In Western Europe, three doctoral students have started their thesis research at WSP in collaboration with three university laboratories. Baptiste Fenneteau aims to develop operational tools to improve our understanding of the mechanical behavior of rocks in deep structures to anticipate constraints and better size infrastructure. Fanny Josse is working on a decision support tool for public works at the territorial level using digital twins. As part of her PhD, she is analyzing the potential and limitations of digital twins for the environmental design of urban projects. And Gabriel Potzer is focusing on qualifying the erosion of storage center covers based on their geotechnical characteristics and rainfall. His thesis topic falls under one of the "Future Ready" themes supported by WSP.

For more information about our CIFRE program, contact us at: we.innovation@wsp.com

OUR APPRENTICES AND INTERNS SHARE THEIR EXPERIENCES

"As a civil engineering drafter apprentice at WSP, I've had the chance to work on a variety of exciting and challenging projects. From road or rail infrastructure to formwork, reinforcement, or hydroelectric dams, there is a wide range of projects.

What makes my apprenticeship particularly rewarding is the opportunity to follow a project from A to Z, from design to realization. I was even able to visit the construction site to see firsthand what we designed. I must say that seeing our plans and models come to life is truly motivating.

And what I really appreciate about WSP is the availability of the experts I work with. All questions are welcome, which helps me progress. This apprenticeship has truly sparked my enthusiasm for the civil engineering drawing profession."

Joana Tâche
Civil Engineering Drafter Apprentice at WSP

KEY ADVANTAGES FOR WSP: GLOBAL TALENT MOBILITY

At WSP, we recognize that the world is interconnected, and we are committed to providing our employees with unique opportunities to grow both personally and professionally. By seamlessly integrating talent mobility into our Employee Value Proposition (EVP), we offer our employees the chance to work in diverse locations, fostering a dynamic environment that nurtures innovation, cultural exchange, and collaboration.

At WSP, your career is not bound by borders; it's a journey that spans the globe, enriched by diverse perspectives and experiences, creating a workplace that values and celebrates the strength of our global community. There is no limit to where your ambition can take you. You can grow your expertise and broaden your horizons by supporting projects outside of your home city or country through cross-border work, business travel, short or long-term work assignments, and global transfers. In some cases, you may even want to permanently relocate to another WSP office.

"Choosing Sweden for my mobility program was a strategic decision, taking into account the opportunity to learn new ways of designing energy installations and utilizing waste energy sources, particularly in the industrial sector.

As an advocate for sustainability and international knowledge exchange, I find working in this new cultural and professional environment a unique opportunity that I was able to seize thanks to WSP's support.

I am very grateful for the encouragement from my managers at WSP France, who supported my initiative. I also appreciate the support I received from various internal stakeholders, including the mobility manager in Sweden, and the warm welcome from the Stockholm team upon my arrival.

Today, I am a process utility engineer at WSP Sweden, learning daily from experts in my field, and this experience is rewarding both personally and professionally."

Alexandre Boulard

Process Utility Engineer at WSP Sweden – formerly HVAC Engineer at WSP France


Imagine
a better
future for us all
With us
you can

What if you could shape built and natural environments—and the future of those that use them?

At WSP, you can embrace your curiosity in a culture that celebrates different perspectives.

With access to global scale and reach, you'll connect with the brightest minds in the field to make it the best work of your life.

Here, you can always find opportunities to grow, as you make your own path and do what matters to you.

You can be proud of your work and its impact on communities all over the world, making it the best work of your life.

What if you could create the career of a lifetime?

Our goal is to help you achieve your ambitions by collaborating on projects that will shape our environment for years to come.

With WSP's scale and reach, your future has virtually no boundaries as you can work on the best projects almost anywhere in the world.

Check out our job offers: Contribute to the change the world needs

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As one of the largest professional services firms in the world, WSP exists to future-proof our cities and our environment. It provides strategic advisory, engineering, and design services to clients seeking sustainable solutions in the transportation, infrastructure, environment, building, energy, water and industry.

Its 69,300 trusted professionals are united by the common purpose of creating positive, long-lasting impacts on the communities it serves through a culture of innovation, integrity, and inclusion. In 2023, WSP reported $14.4B (CAD) in revenue. The Corporation's shares are listed on the Toronto Stock Exchange (TSX: WSP).

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