



Sustainability Report 2022





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“ Technology is no longer the issue. By working with the cement industry, we can radically accelerate a reduction in emissions by 50% by 2030. ”

Letter from Founder and Group Managing Director

LOOKING BACK

2022 was a year to remember for many reasons including some we would like to forget. We faced fallout from the continuing war in Ukraine and its impact on energy costs and logistics. Soon this became the new normal as we and our customers dealt with fluctuating costs. It was also the year that COP 27 brought home to us all the reality of keeping 1.5 alive. Emissions must peak before 2025 and reduce by 43% by 2030 - only seven years away. The focus was firmly on the need to move from pledges to implementation. The world needs solutions that can deliver at speed and scale if we are to limit global warming and the cement industry, responsible for over 7% of all global emissions must rise to this challenge.

as one of four leading technologies, and the only cement business, that has the potential to change the world for the better. Technology is no longer the issue. By working with the cement industry, we can radically accelerate a reduction in emissions by 50% by 2030. We intend to work closely with cement producers and make the technology as widely available as possible.

DONAL O'RIAIN
FOUNDER AND GROUP MANAGING DIRECTOR

In 2022 we can look back and see that we have made significant progress both in terms of our sustainability goals and compliance as a company, and perhaps more importantly with the introduction of our industry-changing low carbon cement technology ACT, a scalable, rapidly deployable technology, which can deliver a 70% reduction in emissions from cement. We have built a business with a unique focus on low carbon technology solutions and products, we have invested time and energy in collaboration and bringing our voice to the debate to help shape an ambitious response to the carbon challenge facing the cement industry and deliver practical solutions that can make a real difference to our industry and to the world.



LOOKING TO THE FUTURE

As we look forward to 2023 and beyond, we begin the next chapter. We are reinforcing our reputation for innovation, and as a partner and trusted manufacturer and supplier of low carbon products, and we are accelerating the development of our innovative low carbon solutions and technology. Our announcement in November 2022 about our ACT technology marks the beginning. As evidence of this we featured in a documentary “Solving for Zero” inspired by Bill Gates’ book on climate change,



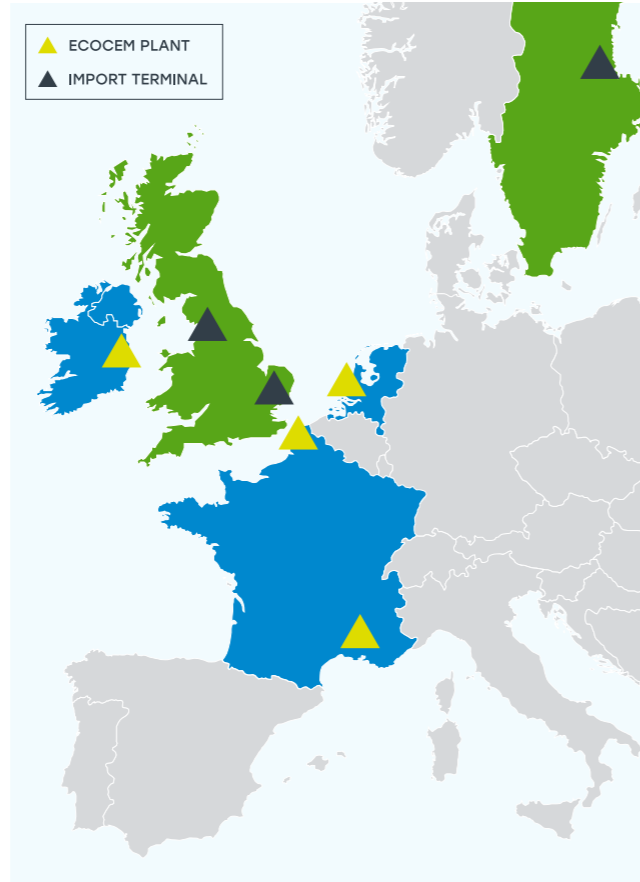
Who We Are

Ecocem is on a [mission](#) to accelerate decarbonisation in the construction sector by developing, breakthrough low carbon products for the concrete and cement industries, that can radically reduce emissions within the decade. We've been pioneers for over 20 years, including helping to develop the lowest carbon cement ever used in Europe at scale.

We are proudly independent, run a world class innovation centre and have four manufacturing facilities across Europe. You will find our cement everywhere from Le Grand Paris Express to Dublin's Aviva Stadium.

We are committed to working with the cement industry to reduce emissions by 50% by 2030 and our products and technology can play a key role in building a more sustainable future for all. Our vision is bold and achievable and by collaborating with motivated partners, we will make it a reality.

All our people live by a set of shared values which serve as the building blocks for our culture and underpin how we work with our colleagues and stakeholders.



CONTEXT OF THE REPORT

This sustainability report highlights our performance against targets set in 2021 for our sustainability pillars (Workplace, Ethics and Governance, Environment and Community) and their sub-categories.

From low carbon product innovation to partnerships with leading industry players, this report gives us an opportunity to focus attention on our efforts to accelerate CO₂ emissions reductions at speed and scale in the cement and construction industries. Finally, this report allows us to shine the spotlight on some of our team members working behind the scenes to make these targets a reality and gives a snapshot of some of Ecocem's projects.

OUR MATERIAL PRIORITIES

A materiality assessment is our preferred tool for determining our approach to building long-term value for all our stakeholders. The assessment of our business is conducted through an independent third party, assuring stakeholders of complete confidentiality and full impartiality in the findings. Our most recent materiality assessment was carried out in December 2021. We worked closely with our internal and external stakeholders including employees, suppliers, clients, and charitable organisations, asking them to consider and

prioritise emerging material environmental, social, and governance (ESG) issues that Ecocem should address.

The outcome was a refreshed ESG materiality matrix that articulates critical elements now factored into our business decisions. The topics have been grouped to form the four pillars of the Ecocem sustainability strategy:



ECOCEM MATERIALITY ASSESSMENT

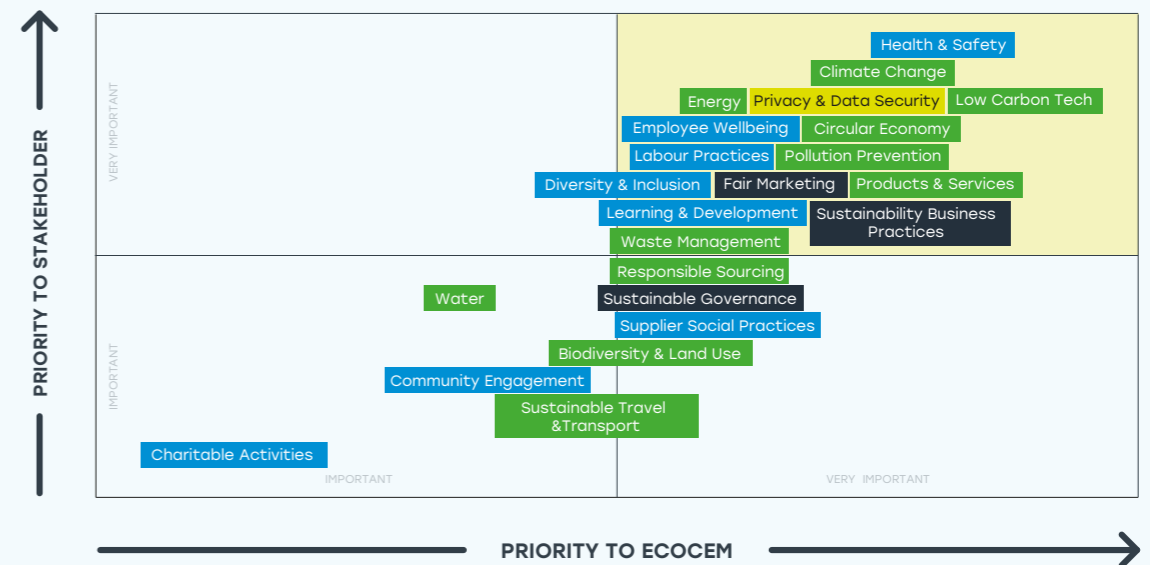


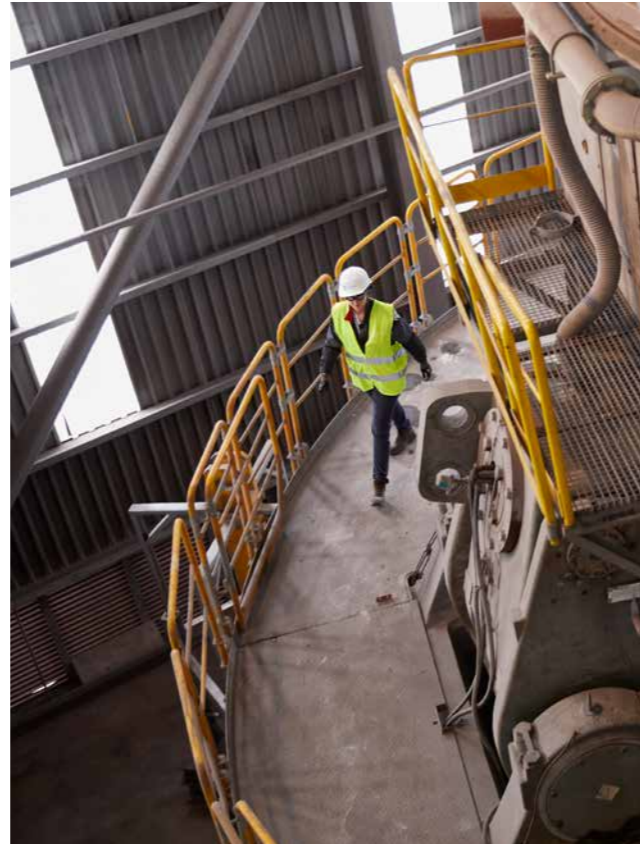
Figure 1 Materiality Assessment Matrix



OUR APPROACH TO SUSTAINABILITY

The cement industry’s CO₂ emissions are expected to increase as global urbanisation and population growth continue. A New York-sized city will be built every month for the next 40 years, so reducing emissions from cement, currently responsible for over 7% of all global emissions, is critical to addressing global warming.

At Ecocem, our ESG strategy reflects our role and responsibility as leaders in the development of low carbon cement technologies, to help solve one of the toughest challenges within the construction industry/built environment sector – decarbonising cement. Our ESG strategy is part of our business model and is evidenced in our product and service offerings. As our ESG priorities continue to evolve, to address ever-changing realities around the world, we remain committed to sharing our progress – transparency, and accountability are key to success.



under the action pillars identified in our materiality assessment: Workplace, Environment, Community, Ethics, and Governance.

Our sustainability actions are aligned with the UN SDGs, ensuring actions across the group are taken in accordance with its principles.

Ecocem is committed to minimizing our CO₂ emissions and since measurement is essential to effective management, we have expanded our Scope 3 register. Having established a robust database and baseline for our internal emissions, and identified emission reduction technologies and projects, we are now working to develop a detailed carbon reduction roadmap in line with 1.5C by investigating the feasibility of identified projects.

Ecocem will continue to develop and deliver high-performance, cost-effective technologies that deliver low carbon alternatives and significantly reduce CO₂ emissions in the cement and construction industries.

At Ecocem, we place a high value on our own internal sustainability and governance performance and consider material topics relating to our stakeholders when making decisions. We have used the Sustainability Development Goals (SDGs) to ensure our corporate strategy and actions align with and contribute to the global sustainable development agenda.

Looking at our own business operations, environmental and social principles guide all our decisions ensuring society and the environment are at the centre of our business strategy and practices. Our performance against our targets and initiatives across all our operations is available on our website and via this sustainability report. We operate ISO-certified sites across Europe and maintain compliance with our local permits. Our growth and development are assessed against the targets set out in our sustainability strategy



ACT: The Next Generation of Low Carbon Cement Technology

At the end of 2022, we launched ACT, our next generation low carbon cement technology which can deliver a globally scalable 70% reduction in the cement industry’s carbon footprint as early as 2035, compliant with the Paris Agreement to limit global warming to 1.5°C.

In the words of Ecocem Founder and Group Managing Director, Donal O’Riain “ACT is a step-change in low carbon cement technology. It is cost-effective, globally scalable, and significantly decarbonising. The cement industry faces a huge immediate challenge if we are to deliver meaningful reductions in CO₂ in the next decade. Technology is no longer a barrier to decarbonisation and for everyone to benefit fully and rapidly from the potential of low carbon cement technologies like ACT, the industry and policymakers need to work together. There has rarely been a more exciting time to be part of the industry.”



Some members of [the senior management team](#) at a recent meeting to progress low carbon developments

ACT is a breakthrough cement technology, that combines a range of technical innovations with the use of widely available low carbon materials to decarbonise the production of cement by as much as 70%, while enhancing the strength and durability of the concrete it is used to manufacture. Our technology is fully scalable and can be deployed globally. It can be produced within existing cement plants without significant investment or modifications and can be deployed rapidly and cost-effectively.

ACT is the culmination of a decade of innovation in the scaling of sustainable, low carbon, competitive cement technologies. It has been subject to extensive technical validation and has been successfully demonstrated in industrial trials. A CE mark is expected in 2024, first commercial applications will follow with full market access by 2025 in the European markets where Ecocem is present (France, UK, Benelux, Ireland).

“But the stakes are high...” says Donal O’Riain, Ecocem managing director, “We are eager to work closely with the cement industry and with policymakers to support the scaling and development of this new generation of low carbon cement. Current policy priorities on decarbonising cement have now been overtaken by technology. Fully effective deployment of ACT requires the industry, regulators, and policymakers to provide effective support”. Historic reliance on Carbon Capture and Storage (CCS) as the sole solution to emissions reduction needs to be broadened to include low carbon cements that avoid emissions production from the outset.



Summary of Performances and Targets

	Issue	Performance Index	2021	2022	Target	Status	SDG Goals
WORKPLACE	Occupational Health and Safety	Incident rate	0.80	0.70	< 1 per 100,000 hrs worked	100% Achieved	
		Fatalities	0	0	0 fatalities		
		Increase spend on safety training	123%	160%	100% on 2020		
		Toolbox Talks	112	144	min of 80 talks		
	Non-Discrimination	Increase of female workforce on 2020 levels	19%	17%	No target	No target	
		Increase of staff	59%	72%	10%	100% Achieved	
		Staff trained in diversity	100%	100%	100%		
	Employee Well-Being	Management on external training courses	75%	100%	25%	100% Achieved	
		Training needs analysis on sites	100%	100%	100%		
Wellness programmes on sites		100%	100%	100%			
ETHICS AND GOVERNANCE	Anti Corruption and Modern Slavery	Judgements, prosecutions and rulings	0	0	0	100% Achieved	
	Compliance and Environmental Regulation	Formal Audits	37	37	37		
	Customer Health and Safety (Impacts)	Education presentations delivered to customers	212	307	200		
Innovation Partnerships		50.00	50.00	50			
ENVIRONMENT	Environmental Impact of Products/Services	GGBS Carbon Emissions (kgeCO ₂ /tonne) GROUP	23.3	21	-5%	100% Achieved	
	GHG Emissions (Impacts)	CO ₂ Savings (million tonnes)	14 million tonnes	16 million tonnes	15.5 million tonnes		
COMMUNITY	Local Community/ Charity Development	Internships per year	3	5	8	63% Achieved	
		Increase in financial support to local charities on 2020	168%	167%	25%	100% Achieved	
		Sites with active Community Engagement Programme	100%	100%	100% of sites		



Our Achievements At A Glance



95% TARGET ACHIEVED





Workplace

- Participation of women in the EU construction sector varies with country, on average this is 4-6%.
- In 2020, more than a fifth of fatal accidents (over 670 fatalities) at work in the EU took place within the construction sector.
- Only 42% of workplaces across Europe provide information and training on well-being and coping with stress.



Workplace

SAFETY IN OUR PRODUCTION PLANTS

At Ecocem, we believe innovation is fostered by the safety, diversity, inclusion, engagement, continuous development, and well-being of our team.

Safety remains our number 1 priority. This is reflected in our performance against our safety indicators.

We are proud of our zero-fatality rate and continue to work on reducing our accident frequency rate through increased employee engagement, continuous safety monitoring, ongoing investment in safety, increased near-miss reporting, training, upskilling, and toolbox talks. ISO 45001 for safety has been embedded in 100% of our sites, promoting an approach to safety that is based on employee engagement and continuous improvement.

Safety is integral to our day-to-day operations, in every action taken in our facilities and offices. The appointment of a group safety officer whose focus is on promoting safety across the business will provide increased support to our local safety officers and facilitate the embedding of a near-miss and good catch culture that will enable us to avoid accidents as we work to achieve our permanent goal of zero accidents.

PILLARS OF ECOCEM GLOBAL PEOPLE AND CULTURE STRATEGY

Our people make our business. Their energy, commitment and belief in our mission are what deliver our industry changing technology and innovation. Their passion and desire to change the world for the better is what sustains us all. We recognise success comes from motivated employees whose contribution is valued and respected.

We have a consistent ethos underpinned by our commitment to our mission and our values which ensures we:

- Have a dynamic organisation
- Are ambitious and deliver for our stakeholders
- Embed structure and process that drives scale
- Have a culture of continuous improvement



Workplace Performance

OCCUPATIONAL HEALTH AND SAFETY

	TARGET	2021	2022	STATUS	SDG GOALS
Incident Rate	<1	0.80	0.70	✓	
Fatalities	0	0	0	✓	
Safety Training	50%+ spending on 2020	123%	160%	✓	
ISO Certification	100% of all sites	95%	100%	✓	
Toolbox Talks	Min. of 80 talks	112	144	✓	

EMPLOYEE WELLBEING

	TARGET	2021	2022	STATUS	SDG GOALS
Management on external training courses	25%	100%	100%	✓	
Training need analysis in place	100%	100%	100%	✓	
Wellness programs in place	100%	100%	100%	✓	

EMPLOYEES BY EMPLOYMENT CONTRACT

	2021	2022
Full Time Employees	155	167.5
Part Time Employees	9	9.3
Permanent Employees	164	176.8
Fixed Term Contract Employees	0	0



NON-DISCRIMINATION

	TARGET	2021	2022	STATUS
% increase in female workforce	-	10%	6%	
% Overall female workforce	-	27%	24%	
% Trained in diversity	100%	100%	100%	✓

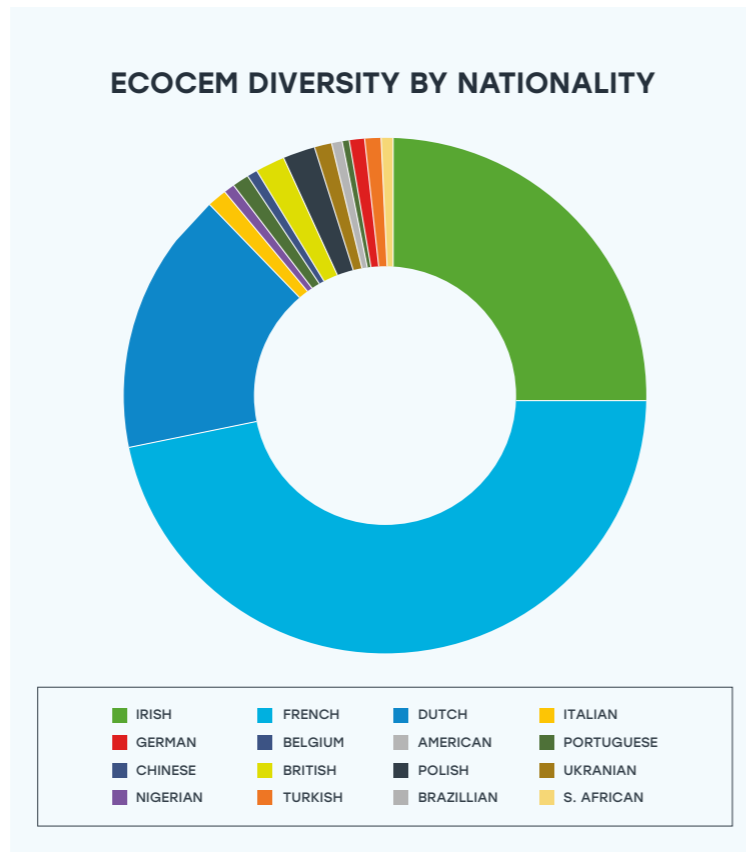
WOMEN IN MANAGEMENT

	2021	2022
Woman at Senior Management Level	2	6
Woman in other Management Level	6	7
Woman as % of Senior Management Level	6%	15%

SDG GOALS

CELEBRATING AN INCREASINGLY DIVERSE WORKFORCE

Ecocem is continually reinforcing its commitment to promoting and embedding diversity, equity, and inclusion. Our team is made up of people of different nationalities, ethnic and racial backgrounds, generations, religions, abilities, and other individual and collective differences.



SAINT-GOBAIN PARTNERSHIP

In October 2022, Ecocem announced a major partnership with Saint-Gobain focused on accelerating the delivery of low carbon products to market. Designed to reduce CO₂ emissions from cement, mortar, and concrete, these products will support the acceleration of the construction industry's transition to a low carbon economy.

“ As the worldwide leader in light and sustainable construction, Saint-Gobain develops innovative materials and solutions that enable the sector’s transition towards a low carbon economy. For many years, we have been forging fruitful and innovative collaborations that enrich our low carbon offers. This partnership with Ecocem is part of this history and is perfectly in line with our goal of achieving carbon neutrality by 2050. ”

BENOIT BAZIN
CHIEF EXECUTIVE OFFICER OF SAINT-GOBAIN

“ The potential exists today to reduce cement industry emissions dramatically by 2030 and to align with the targets set by the Paris Accord. Ecocem’s new generation of scalable low-carbon cement technologies can deliver on this potential. Our deep partnership with Saint-Gobain will support our efforts to scale these technologies and demonstrate to the world how we can decarbonize the cement, concrete and mortar industries. ”

DONAL O’RIAIN
FOUNDER AND GROUP MANAGING DIRECTOR



L-R: Benoit Bazin, CEO Saint-Gobain; Donal O’Riain, Founder and Group Managing Director



Some members of senior management from Saint-Gobain and Ecocem at the partnership signing



Spotlight: The Quality Team

Quality is core to how we operate as a business and is the foundation of our reputation. A fully integrated Quality, Environment and Health and Safety management system to ISO standards touches all parts of our company. Quality is led by the quality team and like every aspect of our management system, everyone has a responsibility to play their part. The key principle of our quality system is continuous improvement in our systems, processes, and program management and for our people. Everyone has the potential to improve their knowledge, skills, and competencies and this commitment is essential as the company grows and evolves.

Our process or system of work is designed and implemented using the **Plan, Do, Check, Act cycle** for continuous improvement.

Our product quality plan is built on three main pillars, raw material control, manufacture control and quality assurance. Control of our raw materials starts with our relationship with our suppliers and ensuring that we source only the highest quality of materials for our needs. Once sourced, our quality team performs entrance quality control testing, checking that our specification requirements are being met.

Communication and a close working relationship with our manufacturing team set processing targets based on materials received that are checked and monitored to guarantee the quality of the product going out to the market. Finally, quality assurance testing is carried out for 3rd party certification and specific customer requirements. Implementing our product quality plan and having the same consistent high-quality raw materials has given us the ability to supply to our export markets from different manufacturing sites, providing great resilience and flexibility in our operations. The quality plan is living and is constantly improving as changes or new developments come on stream.

The quality team and its processes are driven by continuous improvement as our commercial strategy grows. Our supply of raw materials has diversified and will become more so as we develop relationships with new sources to meet the needs of new innovations and current products. Internal audits and external audits by notified bodies and



benchmarking through industry round robin testing confirms that we are amongst the best in class when it comes to quality. The challenge is to ensure our quality capabilities and capacities keep pace with our developments and product innovations. Quality makes sure that we supply only the appropriate quality products to our customers.



Life at Ecocem

In 2022, Ecocem appointed a global Head of People and culture. As we grow, supporting the development and wellbeing of our teams, living our values and maintaining our company culture remains essential as we continue to expand and deliver our mission. Teamwork is vital in each location and together as

a group. Meeting in person is a great opportunity to develop relationships and for team building. Across the business we have a core belief in joy and in challenging ourselves through various competitions which bring a sense of fun to the team.



Some members of the quality team concluding the annual quality meeting with a Spaghetti making Eiffel tower competition. The Irish team won and, much to the disappointment of the Dutch and French teams, is the holder of the lab accuracy award.



L-R: Susan McGarry, MD Ecocem Ireland; Conor O'Riain, MD Europe; Paul Roos, MD Ecocem Benelux, Gavin O'Riain, Executive Director, Ecocem at the 2022 French- Ireland chamber of business awards in Paris. It was great to see a showcase of excellence across different industries and markets.



The EcoceM bake-off was back in 2022, taking place over a period of 4 weeks in April with lots of hidden talents uncovered. Congratulations to EcoceM's Dayna O'Leary, Office Manager in Ireland, on winning the challenge with her masterpiece - The Ferrero Rocher chocolate cake.



L: EcoceM's Jean Christophe Trassard, Director Marketing of sustainable Innovation, Speaking at the 2022 French Federation of Public Works Innovation Day, about the latest innovations in construction and ecological planning.



L-R: Spot EcoceM's Chisom Ekamaru (Sustainability Manager- 3rd from Left) and Susan McGarry (MD- EcoceM Ireland- 4th from Left) in Technological University Dublin, to mark International Women's Day 2022 with some students from the school of Engineering.



Spotlight: The Athletes' Village

Located some 7 km north of the centre of Paris, overlapping the communes of Saint-Denis, Ile Saint-Denis and Saint-Ouen and less than 5 minutes away from the Stade de France, the village, comprised within a radius of 500m, will be the epicentre of the Paris 2024 design. The 2024 Games in Paris will be unlike any other Games in history as they will be both spectacular and sustainable. The organisers are aiming to halve the emissions arising in relation to the Olympic Games.

EcoceM Ultra which was developed by EcoceM in partnership with Vinci, was used on Vinci's new headquarters in Nanterre, Paris, resulting in a carbon savings of 3382.35tonnesCO₂. Its use at the scale of the Athletes' Village will be a first for France.

The Athletes' village will be transformed into offices and residential housing, known as the "Universeine Eco-District", after the summer.





Ethics and Governance

- Europe has the largest presence by number of companies classed as GPoC (Global Powers of Construction 2021), with 40 groups included in the Top 100 ranking.
- The International Labour Organization (ILO) asserted that 84% of all Modern Slavery cases occur in the private economy and certain industries are more at risk. One of those high-risk industries is construction.
- Globally, around 22% of forced labour victims are found in the manufacture and production of raw materials.



Ethics and Governance

At Ecocem, we encourage, promote, and continuously seek to improve a culture of good governance throughout our business. We have an inclusive open environment and transparency, accountability, risk management, and responsibility are at the core of our organisation. Ecocem is committed to high standards of corporate governance and ensuring the long-term value and success of the company in the interests of all our stakeholders. Our governance framework ensures board-level engagement on all material issues resulting in effective oversight, control, and compliance.

Our Ethics policy is one of our core group-wide policies and translates our values in to actions, by setting clear expectations, guiding decision-making, and the conduct of our stakeholders. We focus on implementing best practices that ensure responsible ethical, environmental, and social performance across our value chain by certifying to ISO 9001, BES 6001, and CSC Responsible sourcing. Stakeholders are identified and documented in an interested party register, and reviewed annually to ensure expectations are identified and being met.

More information on the composition of our [Leadership team and Board of directors](#) is available on the Ecocem website.

OUR VALUES INFORM EVERYTHING WE DO:

COHESION - We strive to build strong meaningful relationships based on trust, reciprocity, and solidarity are essential. We believe in engagement, proactive communication, teamwork, and collaboration. We are aware, agile, and support each other to realize a common goal.

INNOVATION - We prize continuous improvement, creativity, and adaptability. We embrace entrepreneurialism, challenging the status quo and responding to changing needs with pertinence.

TENACITY - Grit, determination, resilience, and perseverance will win the future. We are prepared to take risks and learn from mistakes. We believe in managing change, pressure, and growth in a sustainable way.

EMPOWERMENT - We thrive as a team in an environment where people can express their unique talents, be challenged, develop, and grow. A healthy, positive work culture where people feel happy, confident, and secure means a business full of energy, enjoyment, passion, and prosperity.



Ethics Performance

ANTI CORRUPTION AND MODERN SLAVERY

	TARGET	2021	2022	STATUS
Judgements and Prosecutions	0	0	0	✓

CUSTOMER HEALTH AND SAFETY (IMPACTS)

	TARGET	2021	2022	STATUS
Presentations to Customers	200	212	307	✓
Innovation Partnership	40	50	50	✓

COMPLIANCE AND ENVIRONMENTAL REGULATION

	TARGET	2021	2022	STATUS
Formal Audits	10	37	37	✓
ISO 14001 Certified sites	100%	100%	100%	✓

SDG GOALS

8 DECENT WORK AND ECONOMIC GROWTH

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

SDG GOALS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Business, Climate Risks and Opportunities

Our business risk management framework is designed to systematically identify, assess, and manage current and potential risks that could have a substantive impact on our business in the short and long term. This ensures we put in place appropriate measures to mitigate and minimise these risks and position the business to identify and capitalise on opportunities. Our framework facilitates risk identification, analysis, control, monitoring, and reporting.

IDENTIFICATION: Risks are informed by a range of rapidly changing political, environmental, social, technological, legal, and economic factors. Each year we hold business context workshops at both subsidiary and group levels where our team leads, functional heads, and senior management team complete a SWOT and PESTLE analysis. The output from these workshops guides the annual review of businesses' risk and opportunity registers.

The inclusion of climate risks in the business risk register is now standard practice. For example, transitional climate risks could negatively affect sales or drive policy changes which could affect the availability and relative attractiveness of raw materials such as GGBS.

Physical climate risks can have a substantive financial and strategic impact on our business such as damage to plants or equipment at any of our strategic portside production facilities from flooding or equipment failure due to extreme heat. Financially the cost of repairing or mitigating these risks could be greater than €500k - €1 million and the strategic impact of an inability to supply our customers for an extended period would be much greater.

ANALYSIS: The Group's risk assessment is completed annually by the senior management and the board during the management review. Submissions are made using a top-down, bottom-up approach ensuring a complete overview of potential and existing risks. A scenario analysis is completed for each risk to understand the nature of the impact

on the business. The significance of each risk is determined by the impact of its assessed severity on the organisation and the likelihood of occurrence, before and after control measures.

Risks are classified into time horizons:

- **Short term risks:** the immediate risks and opportunities that will affect Ecocem in coming years.
- **Medium-term risks:** considered to be those risks from 5 years to the next 10 years.
- **Long-term risks:** open-ended and are risks that will take place by the end of the decade. Carbon capture and storage as well as green hydrogen could change the cement and steel industries with which Ecocem collaborates. These longer-term risks are transition-focused, technological risks, as well as physical chronic risks such as rising sea levels.

CONTROL: All risks are assigned to owners responsible for ensuring the appropriate attention, resources, and control measures are directed to the risk. AS one of our core values Cohesion, everyone in Ecocem contributes to risk management.

MONITORING AND REPORTING: The annual review is supported by continuous risk monitoring throughout the year by functional heads and senior management. At a minimum, senior management provides quarterly reports to the Board of Directors on important risk findings and provides updates on the measures taken.

The risk management framework supports the board of directors and the entire management team in strategic decision-making.



Spotlight: The Waterford Cable Stayed Bridge

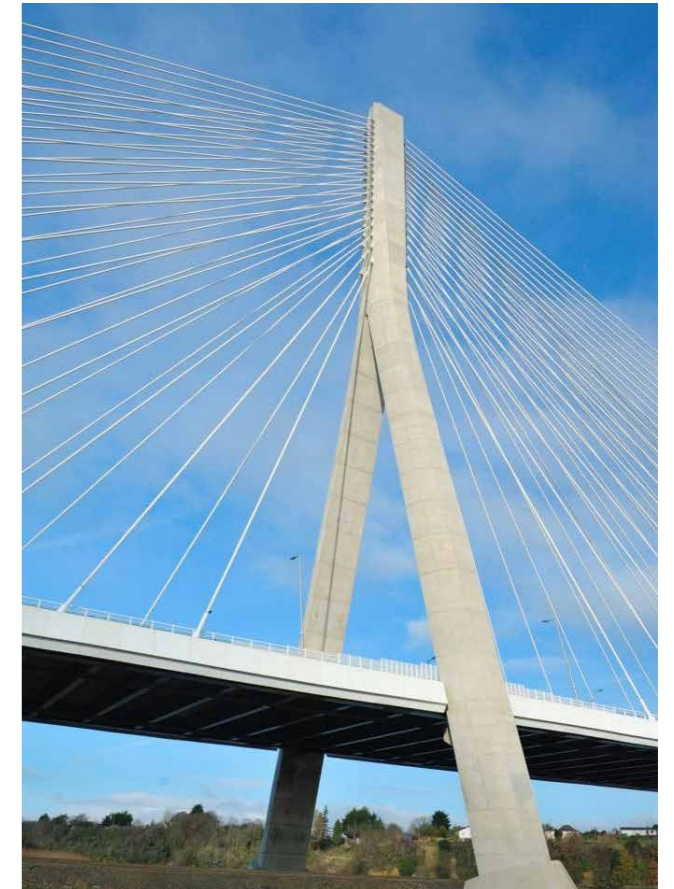
The Waterford Cable Stayed Bridge, in Ireland, crosses the river Suir and forms part of the N25 Waterford City Bypass. The bridge was officially opened to traffic in October 2009. On completion, it was the longest-span bridge in the Republic of Ireland measuring 475m.

The concrete piers of this iconic bridge were constructed using 50% Ecocem GGBS contributing to significant reductions in tonnes of CO₂ and greatly increasing the lifespan of the bridge as the concrete is more resilient to attack and degradation. This is especially important given its proximity to the river.

One of the stand-out features of this bridge, which gives it its name is the cable-stayed design. Not only is it very aesthetically pleasing but it removes the need for intermediate supports or piers in the river and allows for a longer deck. This means there is little to no construction in the river flowing beneath.

AWARDS:

2006 – Irish Concrete Society Design and Construction Awards





Environment

- Concrete is the most consumed product in the world, after water.
- While clinker (in cement) makes less than 15% of the total mass of concrete, it is responsible for over 90% of the carbon footprint of concrete.
- For every tonne of clinker produced, nearly a tonne of CO₂ is emitted.



Environment

Since 2003, we have prevented over 16 million tCO₂e (tonnes of carbon dioxide equivalent) from being released into the atmosphere. It would take over 750 million trees to capture this amount of CO₂ in a year. We monitor and measure our operational carbon emissions, to facilitate data-led decision-making and set ambitious targets to maximize our resource efficiency and reduce our emissions.

We are constantly reviewing our process to identify opportunities to incorporate circular economy practices such as using waste blast furnace gas from a neighbouring plant in our process and waste materials from other industries in our manufacturing process wherever feasible.

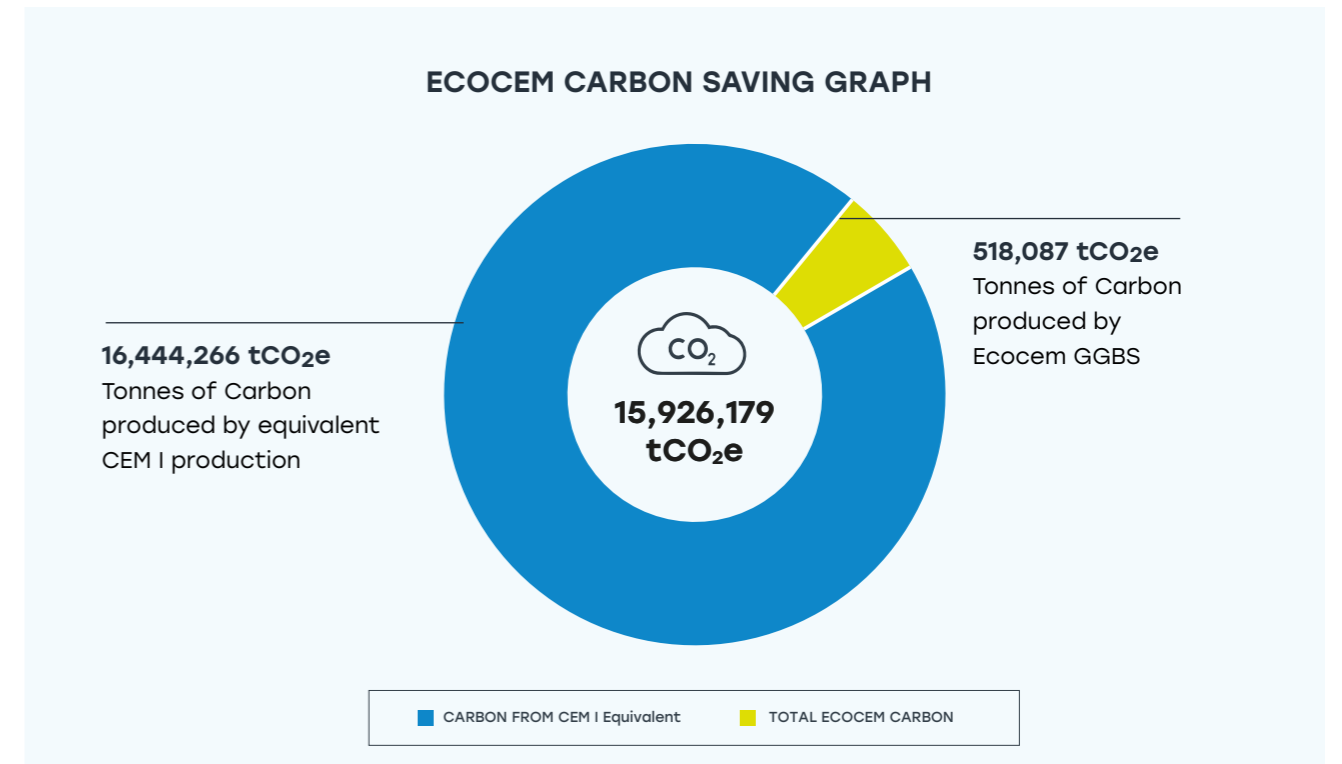
the research, development, and scaling of high-performance low carbon cement alternatives to traditional Portland cement. We continue to disclose our environmental performance through the publication of our Environmental Product Declarations (EPDs), sustainability report, and by responding to the climate change questionnaire from the carbon disclosure project (CDP).

All our products have third-party verified EPDs, facilitating whole-life carbon analysis and reduction of embodied carbon for construction projects. All Ecocem EPDs are being revised to the EN 15804+a2 format with expected to be publicly available in 2023. Ecocem's GHG inventory undergoes an annual third-party verification to ISO 14064-3.

Climate protection is at the centre of our environmental policy and sustainability strategy. We constantly review our processes to identify opportunities to incorporate circular economy practices where feasible. This is in conjunction with our stated mission of continually investing in



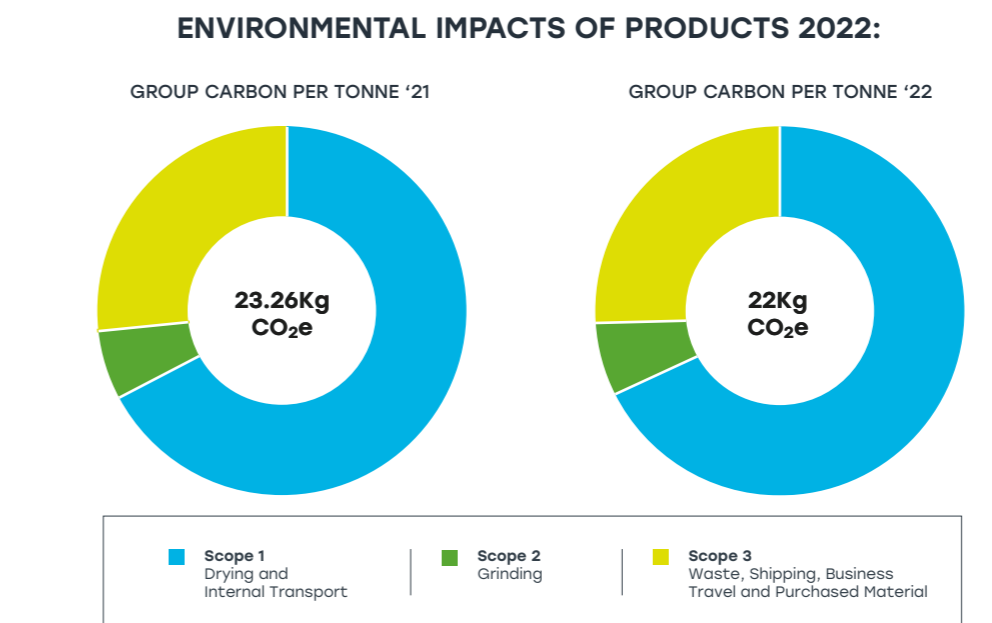
Greenhouse Gas Emissions 2022



2022 Target	15 million tonnes
2021 Performance	14.2 million tonnes
2022 Performance	16 million tonnes

SDG GOALS

- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 13 CLIMATE ACTION





SUSTAINABLE TRAVEL AND TRANSPORT

In 2021 and 2022 we implemented the rollout of a green fleet for the Ecocem sales team across the business. This follows a successful trial in the preceding years with the potential to green the entire fleet in the short term, as the range on electric vehicles is optimised and charging facilities become increasingly available.

WASTE MANAGEMENT

The closed-loop manufacturing process at our facilities ensures efficient use of raw materials and minimal waste generation during the production process. On-site, waste is treated as a resource by ensuring high levels of segregation when generated, placement into appropriate, labelled containers for storage, and transfer to an authorised waste collector for appropriate treatment in line with the waste hierarchy and the circular economy. In 2021 and 2022, we generated 301 tonnes and 481 tonnes of waste respectively.



**Spotlight:
Research and Development at Ecocem**

Innovation is the heart and soul of our business and has been since we started over twenty years ago. Our world-class innovation centre, located in Paris and close to France’s largest research cluster, is dedicated to developing, testing evaluating, and improving our low carbon technologies. It is no exaggeration to say that our greatest strength is our people. 15% of our people work in our innovation team, more than any other cement business. We have 20 PhDs in the business, and we fund a further 8 PhDs spread across three laboratories in France- University of Saclay in Paris, the University of Toulouse, and the Centre Excellence, in the South of Paris. We work with several Universities worldwide, ensuring ongoing collaborations that foster continuous knowledge exchange and learning.

Some of the world’s leading materials scientists have worked with us on the development of a range of [low carbon applications](#) and they continue to advise us on the development of next generation low carbon cements.

We host an R&D Day annually, highlighting innovations, and demonstrating new advancements for decarbonising the construction industry. The development of ACT technology, the next generation of low-carbon materials, is a major achievement for Ecocem.

Roberta Alfani, Ecocem’s R&D Director, said: “Ecocem has been committed for over a decade to developing low carbon binder solutions to reduce the carbon footprint of concretes, industrial mortars, and other building solutions. This is crucial for the future of the planet and the next generations. It can be achieved only through a strong investment and commitment to research. We cannot waste time, we need to move faster in research if we are to decarbonise our planet, we need to ACT now.”





Spotlight: Eco Village, Boekel



Together with the architects of the Van Laarhoven Combination, they developed the plan for a community of 36 truly sustainable and affordable homes.

The construction pioneers of ECO+BOUW and the passionate residents of Ecodorp Boekel came together to create a new green neighbourhood. Together with the architects of the Van Laarhoven Combination, they developed the plan for a community of 36 truly sustainable and affordable homes. It consists of 30 climate-adaptive and climate-positive rental homes, 6 informal care homes, a community centre, a knowledge and education centre, a workshop, and offices, with options for its own food supply, own energy supply, ecological water purification, and sustainable businesses.

The foundation of the houses came from Jansen Beton and are made of geopolymer concrete. Initially, it was the intention to use a geopolymer concrete screed but there was no experience with this. The alternative with an almost identical MKI value was eco2floor. The eco2floor screed floor, uses ground granulated blast furnace slag as a binding agent, and offers many advantages over existing floor technologies.

The eco2floor mixture contains minimal cement, as a result, its CO₂ emissions are considerably lower than those from a traditional sand-cement screed. Eco2floor is also very easy to work with on site. It has low shrinkage, can be walked on after approximately 24 hours, and can be loaded after approximately 72 hours. Eco2floor is also labour-friendly and virtually self-levelling. In addition, it provides a better improves the efficiency of the heating system.





Community

- Biodiversity is fundamental to both planet and people. It provides us with clean air and water, food and medicines.
- Only 23% of species and 16% of habitats under the EU Nature Directives are in good health.
- 90% of employees who work at companies with a strong sense of purpose say they're more inspired, motivated, and loyal.



Community

By extension, Ecocem is committed to adding social value to our local communities by ensuring environmental, social, and governance concerns are embedded across the business and strategy. Every year we support several local community initiatives selected from a number submitted by our people contributing to the progress and resilience of our local communities.

Externally, Ecocem is involved in various collaborative relations with external education and research institutions including University College Dublin and University of Toulouse. Members of our workforce are empowered through training and upskilling and encouraged to engage in knowledge-sharing

activities, including volunteering in colleges of education and participating in relevant technical committees.

We continue to operate with the environment in mind, being socially responsible and investing in our people.



	TARGET	2021	2022	STATUS
Internships	8	3	5	✓
Financial support to local charities	25%	168%	167%	✓
Active community engagement projects	100%	100%	100%	✓



Community Engagement Spotlight

THE BREAKTHROUGH PROJECT RINGSEND COLLEGE, DUBLIN

Ecocem is proud to be part of the breakthrough project- an after school scholarship program supporting students from Ringsend, Irishtown, and Pearse Street who have shown strong potential for 3rd-level education.

The program supports students through the leaving certificate, university, and all the way into professional employment. The programme engages students weekly through mentoring sessions, workshops, and activities designed to promote a culture of high expectations and support students in their academic attainment and progression.

There is scope for a national roll-out in schools across Ireland, following successful implementation in Ringsend College.



FIRE FIGHTERS RESCUE CENTER ALLAUCH, FRANCE

In 2021, Ecocem participated in the financing of "GIFF Groupement Incendie Feu de Fôret (Forest Fire Group from the firefighters' rescue centre of Allauch/Plan de Cuques, France. The funding enabled the provision of survival backpacks for young firefighters who had just graduated, following four years of training. The survival packs contain a sleeping bag, toiletries, a towel, a headlamp, and a multifunction knife and are essential for missions whose duration is not predictable.



Spotlight: An Ecocem Internship Experience

Meet Intern: Kilian Jubert
Department: Health and Safety, France

My name is Killian and I have completed an end of studies project and Internship with the Health and Safety team in France. My internship mentor is Marion Guibert, Group Head of Health and Safety. I worked with Marion to design a phone App that would make it very easy for teams to report possible risks, encourage people to anticipate risks associated with any task, and take steps to minimize those risks. As part of this project, Marion also wanted to improve reporting on maintenance and capture that data for future analysis.

And that's where I come in. I'm a computer science student, on a 2-year professional degree from IUT of Aix-Marseille, a school in Aix-en-Provence. I'm passionate about Internet and phone applications but I had not had the opportunity to develop an App that would be used by other people during their work. This internship and project formed part of my "End of studies project" to validate my degree.



This internship has been very interesting for me, as I was given a great deal of freedom in the programming aspect of the work. Marion was very supportive, with ideas on how to improve the application, but it was down to me to translate them into code and produce an application that was user-friendly, effective, and compatible with online security requirements. This has been a challenging and rewarding experience for me, with some difficult problems to solve, and a lot of technical knowledge developed.

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During my internship, I met a lot of interesting people and received all the support I needed from the teams. My supervisor, Marion, checked in daily on my progress and made it easy for me to connect with relevant people. For the technical problems with coding, I sought guidance from my teachers.

Working with Ecocem has been a positive experience, and I know now that I want to keep working in this area: coding programs that people can use to simplify their lives at work or at home. Thanks to everybody in Ecocem, for their guidance, support and kindness.



Project Spotlight:

DOVER HARBOUR, UK

The Dover Harbour Western Breakwater was manufactured by Macrete and supplied to Volker Stevin Ltd on behalf of the Port of Dover.

Around 500 individual precast concrete units were delivered.

The Port of Dover is the busiest international roll-on roll-off ferry port in the UK, handling 33% of the UK's trade with the EU, supporting businesses across the nation.

Dover is also the UK's second busiest cruise port, welcoming over 25 cruise lines and 200,000 guests each year, and has a marina and property business primed to benefit from a new waterfront.



HOWTH HARBOUR, IRELAND

Ecocem GGBS bespoke blended cement is a suitable technical solution for geotechnical works when looking for soil properties improvement, brownfield remediation cases, and dredged sediment stabilisation and valorisation.

The contractor set the goal to achieve a shear strength of at least 100 kPa. This target is achieved only with binders containing $\geq 70\%$ GGBS. The inclusion of high volumes of GGBS in the binder enables a significant reduction in the heavy metals leaching with time.

The contractor selected Ecocem blended cement containing 70% GGBS to realise the dredged sediments-based port extension in Howth.





Community Engagement Spotlight

CORPORATE VOLUNTEERING DAY WITH AN TAISCE'S CLEAN COASTS

As part of our CSR initiatives for 2022 and to celebrate #WorldOceanDay, the Ecocem team in Ireland took to the Shelly Banks beach in Dublin's Ringsend to complete a beach clean and learn more about the history of this local amenity. The event was organised by Clean Coasts Ireland and at the end of the exercise, we recovered 42 kg of waste from our neighbouring beach.



ECOCEM AND OPENHIVE, IRELAND

Each year we ask our people to submit environmental or social initiatives within the community to which they think we could add value. The Openhive native beehive program was one of these initiatives. In 2022, Ecocem partnered with Openhive on this, and our beehive, located in Kilpedder, Co. Wicklow is thriving with up to 50,000 native Irish bees.

In addition to providing honey enjoyed by our local teams. The Ecocem beehive is also part of the Irish honeybee health surveillance program that feeds into the EU-wide research project COLOSS.



Spotlight: An Ecocem Internship Experience

Meet Intern: Jeremy Benvenutiv
Department: Quality, France

I had the opportunity to do my Engineering school end-of-studies internship at Ecocem. This provided me with an opportunity to combine the world of construction with my interest in ecological and environmental issues. It also gave a great insight into Ecocem's mission, vision, and values.

My work within Ecocem focused on the design of low carbon cement. Although I mainly worked independently, I was well supervised throughout my internship, whether by my mentor Diane Achard, or by the members of the laboratory. This allowed me to feel comfortable and equipped to carry out my research within the company. I conducted research through various tests, attended and even participated in conferences with senior engineers which was formative; and engaged in the day-to-day activities within the laboratory.



These six months at Ecocem have reinforced my convictions that it is possible to reduce our emissions sustainably and that we must do so at all costs. I intend to focus my career in this direction.

I would like to thank Diane and the members of the laboratory for welcoming and supporting me and making this internship so enjoyable. I only have good memories from these six months!



Spotlight: Tottenham Hotspur Stadium, UK



Tottenham Hotspur have created a sports and leisure destination for London with a multi-use stadium capable of staging major sporting and non-sporting events, including NFL, rugby, and concerts, as well as Tottenham Hotspur matches. Their world-class conference and events facilities also provide the perfect location for businesses and organisations from around the world to showcase their work to the UK's capital city.

Ecocem worked in conjunction with Macrete to manufacture over 9,000 individual pieces of precast concrete delivered on 1600 road deliveries over 18 months to the stadium. Our GGBS was used at a 36% replacement level to the Cement greatly lowering the carbon footprint of the product.



Spotlight: Some of Ecocems Partnerships Globally

We have a wide [network of partners](#), from academics and material scientists to concrete businesses, construction materials providers, consulting engineers, and architects.

Our relationships with some of the world's leading materials scientists their expertise and insights help us challenge the status quo and push the boundaries on the development of next generation low carbon solutions. Our network of research and academic partners supports collaboration,

validation, and future dissemination of ground-breaking technologies worldwide. Its members advise us on next generation cement technologies and their contribution is invaluable to producing scalable solutions that can help the entire industry decarbonise.

We work with some of the world's leading construction and materials companies to test, trial, and deliver bespoke low carbon solutions for a range of [projects](#).



The future. Built better



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