

Inspire Circular Programme

EVENT 2 REPORT

Reimagining Materials
for a Circular Future

“We want the Inspire Circular Programme to play its own small part in pooling the collective knowledge, creativity and responsibility of the built environment industry and beyond.”

Thomas Leneveu,
Vice President Commercial Business Unit, Tarkett EMEA

Foreword

If there's one thing we've learned at Tarkett over the past decade, it is that a truly circular economy needs collaboration. Collaboration between businesses and across industries. Collaboration that enables businesses to share knowledge, close material loops and construct new systems together.

It's no exaggeration to say these kinds of collaborative endeavours have been the lifeblood of Tarkett's circular transformation. We've seen first-hand the impact that working more closely with other businesses and industries can have, and it's the tip of the iceberg in terms of what can be achieved across design and manufacturing if collaboration becomes embedded.

We launched the Inspire Circular Programme in early 2025 with the goal of collaboration in mind. No single business can create a circular ecosystem on their own. We want the Inspire Circular Programme to play its own small part in pooling the collective knowledge, creativity and responsibility of the built environment industry and beyond, to move us together towards a truly circular future. Wherever you are in your journey towards circularity, we hope you will join us.

Thomas Leneveu, Vice President Commercial Business Unit, Tarkett EMEA

Let's not sugarcoat the situation. We're currently on track to exceed 1.5°C of global warming and have already overshoot several of Earth's planetary boundaries. Meanwhile, many in positions of power remain intent on denial and business as usual.

Yet where there is damage, there is also potential for transformation. The beauty of our current moment is that we already hold so many of the answers. Evidence shows that circular economy approaches are already building resilience and dramatically reducing emissions and resource use. And, as we saw at Tarkett's second Inspire Circular event, there are countless brilliant, curious and committed individuals and businesses already driving meaningful progress. The movement is accelerating.

Yes, we should remain outraged and deeply concerned about humanity's trajectory. But we must also remember that change is still possible. As an industry, we have immense power and agency – not to mention responsibility – to act as catalysts, provocateurs and activists. We can, and we must, keep going.

Caroline Till, Founder and Executive Director, FranklinTill

Introduction: Why Materials?

Materials are the building blocks of design – the substance that shapes how so much of the world around us looks, feels and functions.

But within our current ‘take, make, waste’ economy, we treat materials as cheap and endlessly abundant. Materials generally move in one direction; extracted from finite resources, transformed into products and discarded once they are no longer needed. The shift to a circular economy is urgently needed.

Where circular economy approaches are already taking root, the impact is compelling. We see materials reimagined not as disposable inputs, but as valuable assets designed to live multiple lives. In these systems, materials are no longer static or single-use – they move, adapt and return, forming dynamic loops of value.

Designers have always held a deeply interdependent relationship with materials, and in a world shifting towards circularity, this relationship becomes even more critical.

If we as designers can better understand where our raw materials are sourced, how they are extracted and transformed, and what happens to them at end of life, we can make informed design choices that enable materials to stay in use, retain their value and regenerate natural systems instead of depleting them.

In October 2025, Tarkett’s second Inspire Circular event, Reimagining Materials for a Circular Future, set out to explore what this new relationship with materials and systems could look like, and to showcase where circular disruption and innovation are already helping to transform industries.

This report captures eight key themes that emerged from the rich and varied discussions on the day, exploring how the urgent need to push circular design, materials and systems is being approached at three different levels: Industry, Agency and Innovation.

We hope that this report will act as a source of information and inspiration for architects, designers and manufacturers as they play their role in the complex, challenging but hugely rewarding journey towards a circular future.



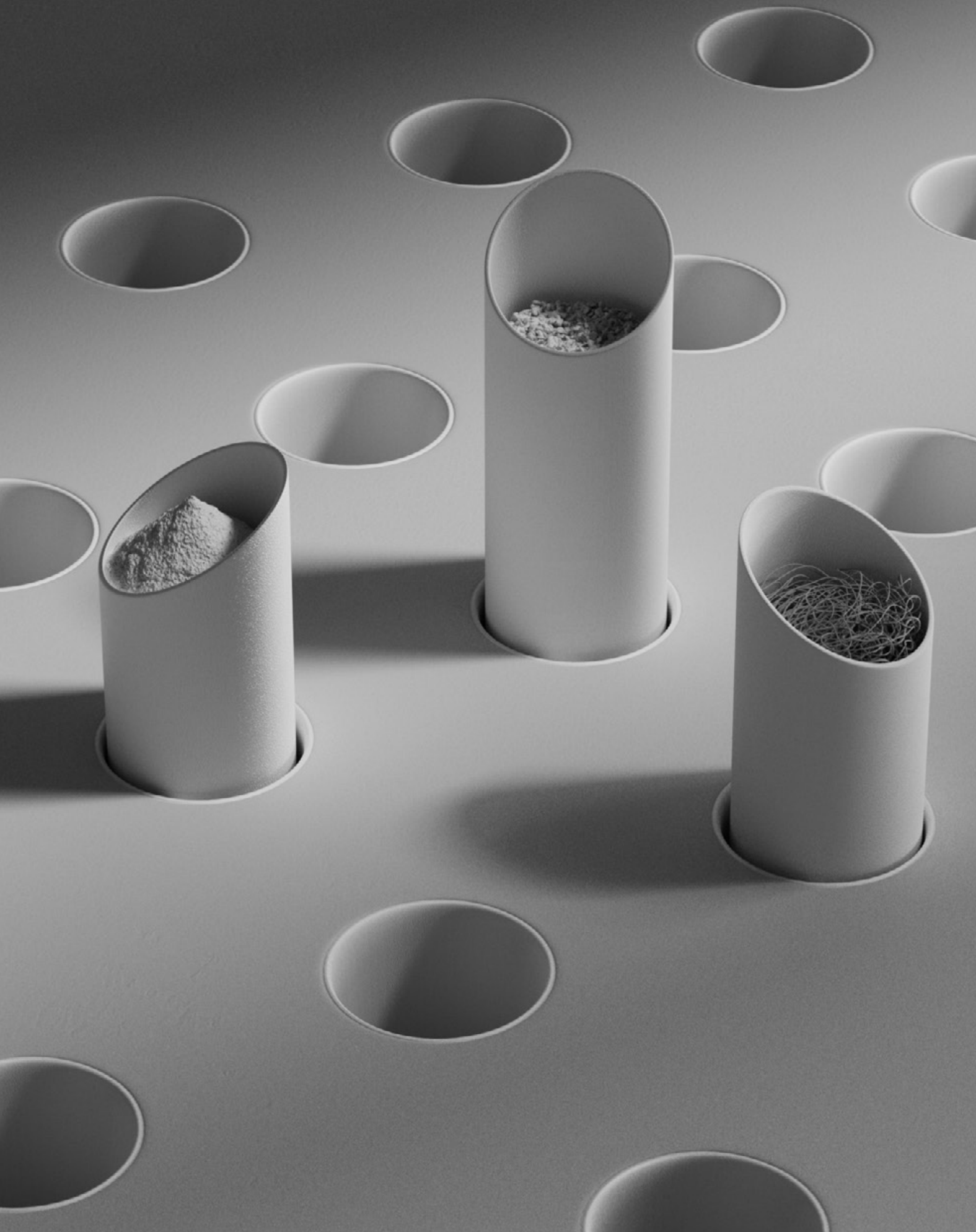
Opposite Designed with circularity in mind: Carbon Cell is dedicated to providing a sustainable alternative to traditional polymer-based foams, with a patent-pending, plastic-free material made from carbon-negative biochar and natural binders.

Image: Carbon Cell

Above Designing with end of life in mind: MarinaTex is developing sustainable alternatives to problematic single-use plastics. Its focus is on harnessing untapped natural waste streams – particularly from the fishing industry – to create high-performance, compostable films and coatings that can be used across packaging and agriculture.

Image: MarinaTex

Eight Key Themes



INDUSTRY

- 01. EMBRACE THE BUSINESS CASE
- 02. DON'T WAIT FOR REGULATION
- 03. COLLABORATE OR DIE

AGENCY

- 04. IT'S TIME TO RECLAIM 'AGENCY'
- 05. THE POWER OF SELF-INITIATED WORK
- 06. REFRAMING SUSTAINABILITY

INNOVATION

- 07. DESIGN MATERIALS FOR END OF LIFE
- 08. LOCAL VS GLOBAL

Industry



01. EMBRACE THE BUSINESS CASE

The first session of the day explored circularity through the lens of global industry, where short-term financial pressures and the ESG backlash are making circularity a harder sell in boardrooms.

Panelists spoke candidly about the need to double down on the business case for circularity during this challenging period. Dean Connell, Creative Director at I-AM.D.C, explained, “In order to scale this, we’re going to need to get people to buy in... The reality is, if it doesn’t make money, it’s not going to make sense.”

For many companies, the long-term benefits of circularity – supply chain resilience, resource efficiency, cost savings – are perceived to be outweighed by the up-front costs. But Thomas Leneveu, Vice President Commercial Business Unit at Tarkett EMEA, argued that businesses acting now will come out on top.

Citing economist Ioannis Ioannou, who spoke at Tarkett’s first Inspire Circular event in April 2025, Leneveu explained that we have a choice as to whether the transition to a more sustainable economy will be orderly or disorderly. Businesses that have already made this choice and started reinvesting and adjusting their supply chains to move to circularity will reap the benefits.

Advocating for circularity in the current environment isn’t easy, but Michael Pecirno, Sustainable Futures Lead at Hassell, finished on a cautiously optimistic note: “We are living right now in the backlash. Do not give up hope. Keep pushing because the backlash will end at some point and it will hopefully be a little bit easier.”



Opposite Professor Sophie Thomas OBE chairs the Industry session, along with speakers (L-R) Thomas Leneveu, Tarkett EMEA; Dean Connell, I-AM.D.C; Michael Pecirno, Hassell and Christopher Raeburn, RÆBURN.
Image: Tarkett

Above Getting ahead of the transition: Raeburn’s Timberloop is a sustainable footwear collaboration between Timberland and designer Christopher Raeburn. It is designed to be fully disassembled and recycled at the end of its life, using responsible materials including recycled plastic fabric, natural rubber and leather from an LWG Silver-rated tannery.
Image: Raeburn

02. DON'T WAIT FOR REGULATION

Regulatory changes have the potential to make the business case for circularity stronger and more tangible, rather than relying on arguments for circularity on moral or ethical grounds.

“I can be the most altruistic designer, pushing for the most sustainable option with the client,” explained Pecirno, “but at some point, a value engineer is going to come in and say, ‘That really sustainable material is a bit expensive. We should swap it for something cheaper.’”

For Pecirno, this is where regulation comes into play, helping to reframe circularity not as a moral choice, but as a strategic and financial imperative.

Despite its potential, panellists agreed that the pace of regulation is lagging behind both innovation and environmental necessity. Connell took things further, suggesting that other digital incentive systems such as tokens and blockchain could make the business case for sustainability more immediate and tangible than regulation, which in his view can stifle innovation.

Whatever the panellists’ views on regulation, there was broad consensus that businesses shouldn’t wait for it to arrive. “We are the system when it comes to the designers, manufacturers, specifiers,” Leneveu observed. “It’s up to us to drive the change.”



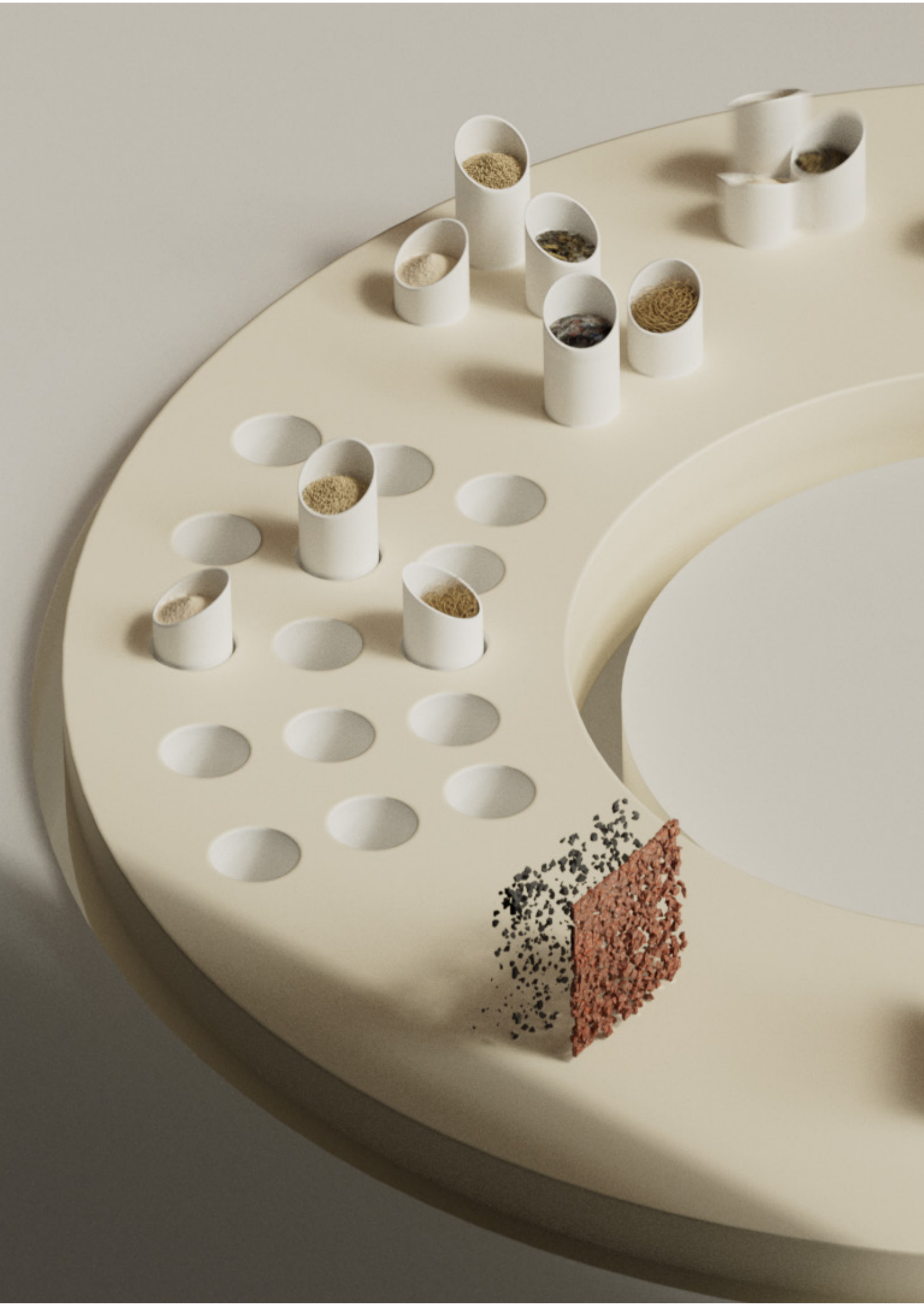
So, asked session chair Professor Sophie Thomas OBE, Senior Director at the Useful Simple Trust, how can designers, manufacturers and industry make circularity attractive enough to reach for?

For Leneveu, developing a compelling narrative around the Beauty of Circularity has helped to articulate and accelerate Tarkett’s goals, positioning circularity as something aspirational as well as business-critical.

Those working in creative industries have a unique role to play in pushing circularity in new and imaginative ways, agreed Christopher Raeburn, Founder & Creative Director at RÆBURN. “The very nature of being a creative is that you’re a problem solver. And without doubt, over the next 10 to 20 years, [the climate and ecological crisis] is going to be the biggest problem we need to solve. It’s about focusing minds. It’s how we galvanise people.”

Left Driving the change: Hassell designed First Light Pavilion for the Jodrell Bank Observatory in Cheshire, England – home to the iconic Lovell Telescope. The exhibition space was designed to seamlessly integrate into the natural landscape and impact the ecology of the UNESCO heritage-listed site as minimally as possible.
Image: Hassell

Opposite Making circularity desirable: Tarkett has developed a visual and verbal language for its Beauty of Circularity philosophy, bringing the manufacturer’s approach to circular design, materials and systems to life in a beautiful and dynamic way.
Image: Tarkett



“There is plenty of opportunity for collaboration; it’s everywhere. And we have to grasp it and work on it together, because we can change the system together by collaboration and by exchanging.”

Thomas Leneveu,
Vice President Commercial Business Unit, Tarkett EMEA

03. COLLABORATE OR DIE

Circularity cannot happen in a vacuum – it takes coordinated action across designers, manufacturers, suppliers, policymakers and citizens to keep resources and products flowing through closed-loop systems.

But for many businesses, the idea of collaborating with peers or competitors is uncomfortable. One of the major challenges for businesses is their reluctance to be transparent. It’s something businesses are “notoriously bad at” observed Raeburn. “How do you build that equality of conversation and openness to discussion?”

For Leneveu, collaboration and transparency have been vital to Tarkett’s circular transformation, and present a significant business opportunity.

The opportunities are huge, agreed Pecirno, but in order for cross-industry collaboration to succeed, we need to ensure information and language are aligned. Pecirno cited the Material Passport scheme, which tracks what a product is made of, where materials come from and how they can be reused at the end of their life.

“The idea is that you design a building, and you specify everything that’s gone into it. So at end of life, you can take it apart, and use these things that can be disassembled,” explained Pecirno. “I don’t think there’s right now a cohesive way of talking about and sharing that stuff. If you look at material reuse databases, they’re all different, with different information.” In other words, greater industry alignment is needed to ensure new collaboration initiatives are truly effective.

Done well, and collaboration can be transformative for businesses on their circular journey. “There is plenty of opportunity for collaboration; it’s everywhere,” concluded Leneveu. “And we have to grasp it and work on it together, because we can change the system together by collaboration and by exchanging.”



Above Cross-industry collaboration: DESSO by Tarkett uses pine rosin, a by-product from the Scandinavian paper industry, in its EcoBase carpet tile backing. The partnership has enabled DESSO to halve the use of petroleum-based material in its EcoBase backing.
Image: Tarkett

Agency



04. IT'S TIME TO RECLAIM 'AGENCY'

When 80% of a product's environmental impact is determined at design stage, the role of creative agencies – from architecture to product design – becomes clear. Agencies are uniquely placed to influence how things are made, what materials are used and what happens at the end of their life.

But, argued David Johnston, Founder and ECD of Accept & Proceed, many agencies today just passively respond to briefs without questioning their impact. Instead we would do well to re-connect with the word's original meaning. "Agency means power, it means influence, it means thinking about how you can operate in partnership, to influence the organisations you're working with," Johnston explained.

But does this mean turning down work that doesn't feel aligned with an agency's sustainability priorities?

Rather than saying "No" outright, argued Adib Dada, Lead Architect and Forestmaker at theOtherDada, it's better to engage – and challenge. "For us, it's all about the provocation. A client comes to us with a certain brief, and then it's about how do you provoke them into thinking differently, and then you gauge from their response if they're ready to go there or not."

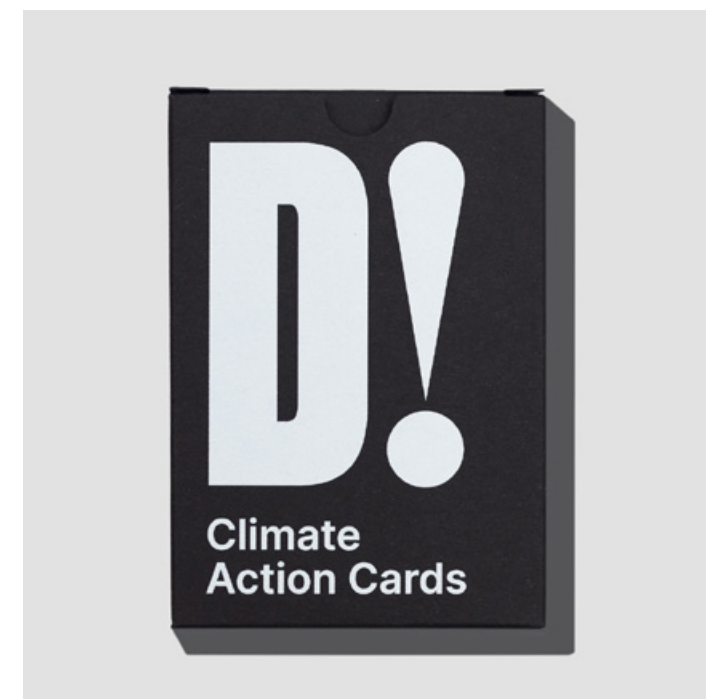
In situations where clients remain sceptical, Jo Barnard, Founder and Director at Morrama, has used 'sustainability by stealth' to bring about more



incremental changes to the brief and client mindset. "It's all about planting seeds and about showing people that it is possible," observed Barnard. "If we work on 50 projects a year, that's a lot of clients we get to nudge in the right direction."

And it's not just about nudging clients. Pushing the industry forwards is also key. "We can educate, we can share, we can keep pushing our own learnings and we can do as much as we possibly can to shift the practices of others within the industry," said Barnard.

Whether by provocation or by stealth, Johnston agreed that engagement is the best way forwards. "I'm not a big fan of saying 'No'. I think, increasingly, the work that we do has to be around engagement. You can be a Trojan within the organisations you work with. You can go in and speak truth, and it slowly ripples through the organisation. And that's how a tiny agency can have a big effect on the organisations that are huge around the globe."



Opposite FranklinTill's Caroline Till (far right) chairs the Agency panel discussion with speakers (L-R) Adib Dada, theOtherDada; David Johnston, Accept & Proceed; and Jo Barnard, Morrama.

Image: Tarkett

Left Pushing industry forward: Climate action cards from Design Declares, created by Morrama in collaboration with industry experts. The cards bring together a unique collection of planet-positive lessons, advice and steps for designers to implement.

Image: Morrama

Above Agency influence: Industrial design consultancy Morrama worked with Wild deodorant on the redesign of its case, with considerations for user experience, material, cost reduction and sustainability. The new case has a 17% reduction in materials, is designed for disassembly and recycling, and is more compact and easier to use.

Image: Morrama

05. THE POWER OF SELF-INITIATED WORK

Sometimes agencies will work with a client who is keen to push boundaries and innovate to drive impact. But when these briefs don’t materialise, agencies can push the circularity agenda through braver and more meaningful self-initiated work.

“There is so much talent and creativity in this space,” explained Barnard, “We have to direct that into rebellion and shaking shit up and showing that it’s not just about the brief... Let’s think of cool stuff to do and let’s talk about it, and let’s be thought leaders and let’s show the clients what they’re missing when they limit it so much.”

In the early days of his architectural practice, Dada realised he was working on projects that were about being “a little less bad”. So he decided to launch a self-initiated project that would allow him to create something truly regenerative – reclaiming part of the bank of the Beirut River with the local community, to transform it into a green public space. The project has led to other briefs from clients who have seen and appreciated Dada’s self-initiated work.

“Self-initiated work gives you confidence,” reflected Barnard. “It gives you, as a team and as a creative, confidence because it gets recognition. It gives you the boldness to be able to say to someone who comes and asks you for one thing, to then say, ‘Actually, let’s just chop a hole in your dashboard’.”



Above Agency knowledge sharing: Drawing on lessons from over a decade of running the Morrama design studio, founder Jo Barnard has shared honest reflections on the challenges of balancing creativity, business and sustainability in her book, From People to Planet.
Image: Morrama

Opposite Self-initiated regeneration: Lebanese architectural studio theOtherDada worked with the local community on a self-initiated project to reclaim part of the bank of the concrete, sewage-filled Beirut River, transforming it into a shared space for all of life to thrive in the city.
Image: theOtherDada



“If we start talking about it in terms of future proofing... other aspects of the business may be a lot more interested in being involved in that conversation.”

David Johnston, Founder and ECD, Accept & Proceed

06. REFRAMING SUSTAINABILITY

Over the past few decades, sustainability has risen from a niche environmental concept to a mainstream issue, used by businesses, governments and consumers to signal concern and intent around the climate and ecological crisis.

However, many now feel that greenwashing and the politicisation of sustainability and ESG initiatives have eroded the term's credibility, turning what was once a call for genuine transformation into a marketing slogan and ideological battleground.

Against this backdrop, the language agencies now choose to use around sustainability and circularity can make a critical difference in pushing the agenda forwards.

Where circularity has become synonymous with upfront investment and cost, reframing circularity as 'resource efficiency' speaks directly to business performance – reducing costs, and unlocking untapped value in waste streams.

It's a full circle moment. When Professor Sophie Thomas OBE, Senior Director at the Useful Simple Trust, began her career in design 30 years ago, circularity was simply known as 'resource efficiency'. That commercially minded framing can serve us again.

For Barnard, the framing around circularity can lead to starkly different outcomes. “If you say, ‘Now we're going to start the resource efficiency piece’, they're going to sit up and say ‘Great!’ – because this is all about cost saving. And yet if you say, ‘circularity’ they're going to say, ‘Yeah, let's not talk about that – it sounds expensive’.”

Another shift noticed by Johnston is the transition from sustainability to 'security': “A lot of people are talking about the disruption that's coming, and that we need to be secure in our supply chain or in our community.”

Ultimately, sustainability and circularity come down to ensuring the long-term viability of a business, as Johnston explained: “If we start talking about it in terms of future proofing... other aspects of the business may be a lot more interested in being involved in that conversation.”



Above David Johnston, Founder and ECD, Accept & Proceed
Image: Tarkett

Innovation



In our third session of the day, three brilliant material innovators explained their processes, their emerging material innovations, and their visions for the future in a pecha kucha-style series of presentations.

In-depth case studies about Carbon Cell, Low Carbon Industrial and MarinaTex can be found at the end of this report.

07. DESIGN MATERIALS FOR END OF LIFE

Today's material innovators are designing with end of life in mind. By considering how their innovations can be reused, recycled or safely returned to nature, they're introducing new materials that support circular systems and extend value far beyond their first use.

"Good design takes the whole life cycle into account," Lucy Hughes, Founder and COO of MarinaTex, explained. "What's happening at the moment is bad design, borderline malpractice, to be putting out materials that are only really suitable for their use phase and not suitable for end of life."

Tackling the volume of traditional polymer foam materials, often washed up on beaches and rarely reused or recycled, is at the heart of Carbon Cell's mission. "This is a really troubling class of materials for waste as well as carbon emissions because they traditionally are very difficult to cost-effectively recycle," explained CEO Elizabeth Lee. Carbon Cell's expandable bio-based foam material offers a viable alternative – fully compostable and locking in carbon for centuries.

Key to designing for end of life is understanding the systems that exist to process materials at the end-of-life stage. In the biological loop, materials safely decompose or return to nature without harm. In the technical loop, they can be recovered, reused or recycled without degrading performance.

Designing for these pathways is central to a circular economy, but the question for material innovators and manufacturers, as Conor Taylor, Co-founder of Low Carbon Industrial, explained, is ensuring materials are actually returned at the end of their life. "We have a really robust reuse, remanufacture, recycle policy and process," he said. "But how at the end of life do we actually get people to do it?"



Opposite Material innovators (L-R) Conor Taylor, Low Carbon Industrial; Lucy Hughes, MarinaTex; and Elizabeth Lee, Carbon Cell, discuss their innovation journeys with FranklinTill's Ruby Smith.
Image: Tarkett

Above New material innovations: Audience members handle materials by Carbon Cell, MarinaTex and Low Carbon Industrial at Tarkett's Inspire Circular event, Reimagining Materials for a Circular Future.
Image: Tarkett

08. LOCAL VS GLOBAL

Material innovators often have to weigh up the benefits of local versus global supply chains, assessing factors such as carbon footprint, material availability, production costs and traceability.

Balancing these priorities was a tension acknowledged by the panel. “It’s an interesting dynamic,” said Lee. “Do you buy into this global supply chain in search of the cheaper, or more available, or more technically suitable option; versus when you go local, and how does that tie into culture and availability of resources?”

Working with global partners has been key to Low Carbon Industrial’s approach, piggybacking on existing large-scale manufacturing techniques rather than trying to reinvent them. “I don’t have €30 million to spend on a prototype line,” explained Taylor, “but there’s a lot of manufacturing capacity out there already, so let’s use that. Let’s show manufacturers how they can create value for their employees and for their companies, and inadvertently or intentionally, drag them along to a more sustainable, more circular future.”



Low Carbon Industrial has been working with Taiwanese solid surface manufacturer Meganite in this way for the past two years to produce its debut product, Elenite – the only solid surface currently on the market with natural by-products incorporated into the material.

“If you can create more value by redesigning and rethinking their manufacturing processes, then there’s opportunity for the entire supply chain,” observed Taylor. “We can disrupt. There’s a great opportunity for both of us as partners.”

Top and left Global partnerships: Low Carbon Industrial has been working with Taiwanese solid surface manufacturer, Meganite to produce Elenite – the only solid surface currently on the market with natural by-products incorporated into the material.
Image: Low Carbon Industrial

In Conclusion

The movement towards a circular economy is accelerating – and Tarkett’s second Inspire Circular event, Reimagining Materials for a Circular Future, proved that the mindset of hope and determination to make the transition happen is really taking hold.

By coming together across disciplines, sectors and supply chains, we can unlock extraordinary opportunities for innovation, creativity and regeneration. The idea of shifting an entire economic system is daunting, but as we heard from our speakers on the day, we all have a role to play, however small we start. It is within our collective power to design a thriving economy that gives back more than it takes – one that restores and renews the world around us.

To find out more about Tarkett’s Inspire Circular Programme and future events, please visit [our website](#) and subscribe to the Inspire Circular newsletter.

WITH THANKS TO OUR SPEAKERS

- Professor Sophie Thomas FCIWM OBE, Senior Director, Useful Simple Trust
- Christopher Raeburn, Founder & Creative Director, RÆBURN
- Dean Connell, Creative Director, I-AM.D.C
- Michael Pecirno, Sustainable Futures Lead, Hassell
- Adib Dada, Lead Architect and Forestmaker, theOtherDada
- Jo Barnard, Founder and Director, Morrama
- David Johnston, Founder and ECD, Accept & Proceed
- Elizabeth Lee, CEO, Carbon Cell
- Conor Taylor, Co-founder, Low Carbon Industrial
- Lucy Hughes, Founder and COO, MarinaTex
- Ruby Smith, Senior Strategist, FranklinTill
- Caroline Till, Founder and Executive Director, FranklinTill
- Thomas Leneveu, Vice President Commercial Business Unit, Tarkett EMEA



Material Case Studies



CASE STUDY: LOW CARBON INDUSTRIAL

Conor Taylor, Co-founder

Low Carbon Industrial (LCI) is an innovative materials company building on the pioneering work of timber terrazzo brand Foresso. Its mission? To reduce the carbon footprint of architectural materials without compromising performance, aesthetics or practicality. By creating thoughtful low-carbon alternatives, LCI supports both design excellence and environmental responsibility.

The idea of repurposing existing infrastructure is at the core of LCI as it looks at the realities of day-to-day manufacturing, and how to collaborate and create circular economies where they didn't exist already. Keen to demonstrate commercial viability to the wider industry, LCI uses material design to improve, decarbonise and revolutionise the built environment. Meaning it starts with the idea of piggybacking on large-scale manufacturing techniques rather than trying to reinvent them.

Elenite is LCI's debut product. Designed for architects, designers and fabricators, it brings richness and character to solid surfaces, with versatile applications across kitchens, bathrooms and furniture. Made from natural waste materials such as walnut shell, walnut dust and bamboo fibre, it combines tactile warmth with natural pigments. The surface comes in four distinctive colours, allowing designers to integrate sustainability seamlessly into diverse palettes.



Drawing on the experience of launching Foresso, LCI has learned just how much the design community values tactility, storytelling and sustainability when executed well. If innovation isn't visually appealing, people will have a reason not to adopt change.

Engineered for high-specification environments, Elenite delivers performance comparable with leading competitors while reducing embedded carbon by 29%, with future production targeting a 50% reduction. Made in partnership with Taiwan-based specialist Meganite, which shares LCI's commitment to doing things differently, it is chosen by those who do, too.

Elenite contains no silica, formaldehyde or water. Its circular production process recycles all manufacturing waste, and end-of-life sheets can be returned for complete recycling into future batches. In each Elenite sheet (3,660 x 760 x 12mm) there is 35% recycled resin, which equates to 1,900 water bottles (600ml) being recycled and reused per sheet.

Together with Meganite, LCI is proving that beauty, performance and environmental intelligence can come as standard.

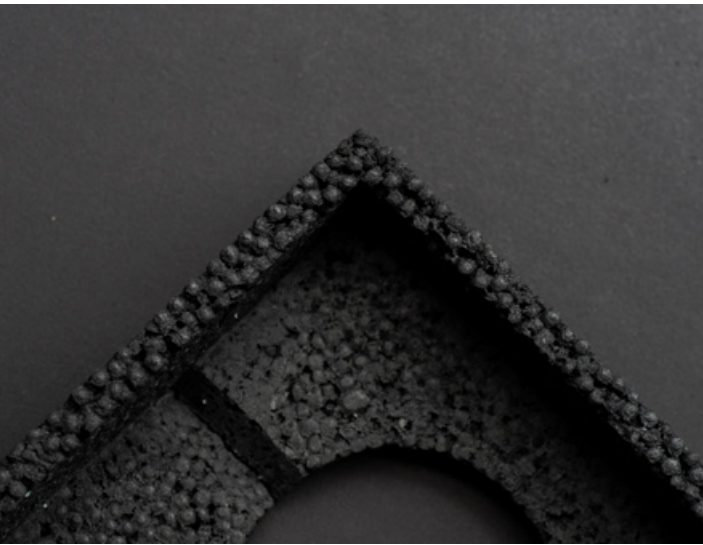
CASE STUDY: CARBON CELL

Elizabeth Lee, CEO

Carbon Cell is dedicated to providing a sustainable alternative to traditional polymer-based foams, with a patent-pending, plastic-free material made from carbon-negative biochar and natural binders. This unique material fills a gap in the \$115 billion market for expanded foams created by increased legislation against single-use plastics, growing carbon tax pressure and changing consumer preferences, helping businesses in packaging, the built environment, modelling/fabrication, marine foams and beyond meet their sustainability targets.

The company and the innovative material that shares its name began as a research project while the company’s founders were studying Innovation Design Engineering at Imperial College London and the Royal College of Art. The team of designers and engineers became fascinated with harnessing the properties of biochar, a type of porous carbon material that the World Economic Forum estimates could fulfil up to 35% of the world’s carbon dioxide removal needs.

Biochar derives from biomass – normally agricultural wastes. Plants, which have accrued carbon during their lifespans through photosynthesis, are harvested for their valuable components, and remaining matter usually gets either burned (re-emitting carbon in the form of CO2), or left to degrade (re-emitting carbon in the form of methane). However, when this material is collected and converted into biochar, the carbon contained inside is ‘fixed’ thorough the process of pyrolysis. This means biochar is effectively carbon negative.

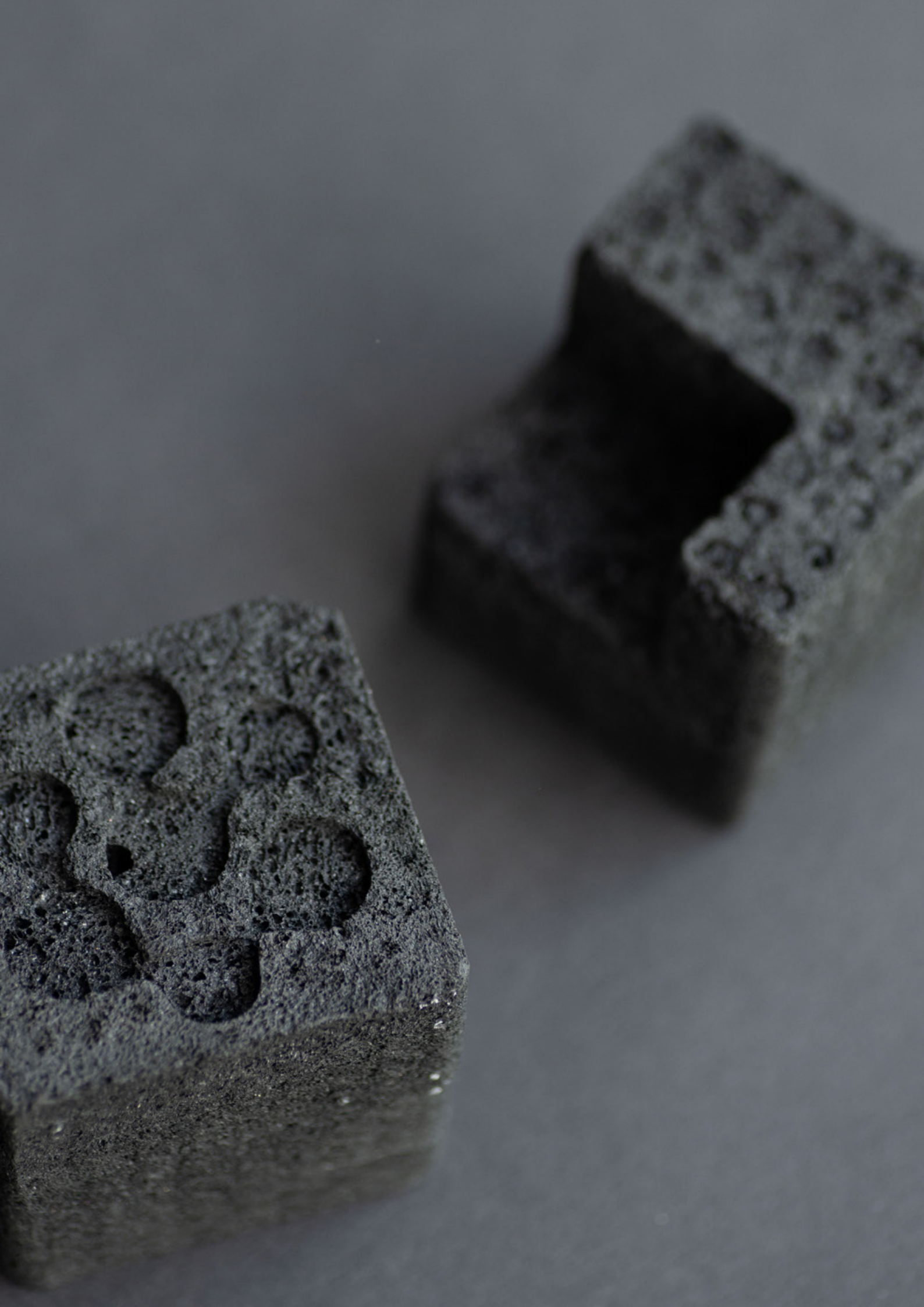


The team became fascinated with not only the carbon footprint of the material, but also its technical properties – extremely lightweight, porous, a good insulator – and where they could solve existing industrial problems.

Foam materials are widely used across architecture (insulation, acoustics), automotive (composites), creative industries (film, theatre, design), packaging and a host of other hidden applications. Conventional foams require oil resources to make, and can be difficult or not cost-effective to recycle; additionally they often escape into the environment where they can leech microplastics, due to the fact that they are lightweight and float/drift on wind and currents.

The Carbon Cell team thought biochar’s properties – lightweight, porous, insulating – were ideal to incorporate into a bio-based foam material. The company’s core technology allows biochar to be compounded with a natural polymer into pellets or beads, which can be expanded into foam using heat, in a manner similar to conventional foams such as EPS (expanded polystyrene). The material can be moulded and machined into various shapes and formats to suit different industrial applications.

The vision for circularity of this material exists on several levels: 1) the material can technically be recycled if appropriate collections exists – although this remains a huge challenge for most materials. 2) the material can be composted and will degrade in natural environments, during which process the natural polymers it contains will break down, but the biochar will remain a carbon sink, and has been shown to improve soil health. As a bio-derived resource intended to return in the ‘natural’ recycling system perfected by microbes over millennia, this vision of circularity is broader than the tight technical loops of re-use and recycling that often come to mind.



CASE STUDY: MARINATEX

Lucy Hughes, Founder and COO

MarinaTex is a material innovation company developing sustainable alternatives to problematic single-use plastics. Its focus is on harnessing untapped natural waste streams – particularly from the fishing industry – to create high-performance, compostable films and coatings that can be used across packaging and agriculture.

By working with marine-derived waste, including seafood byproducts and algae, MarinaTex is transforming materials that would otherwise be incinerated into valuable, planet-friendly products. This approach not only eliminates waste, but also avoids reliance on land-based resources typically used for bioplastics. Its materials are designed to break down in real-world conditions, avoiding microplastic pollution and aligning with existing recycling systems.

Unlike conventional bioplastics, which often require industrial composting and still pose end-of-life challenges, MarinaTex products are designed to integrate into circular systems from the outset. Its protective coatings, for example, can be applied to fibre-based packaging and recycled within the paper stream – eliminating the need for non-recyclable plastic films. They also offer antimicrobial and barrier properties that extend product shelf life, supporting both environmental and commercial outcomes.

MarinaTex is currently based in Brighton, with partnerships and collaborators spanning the UK and beyond. Its coatings are set to launch in 2026, with films to follow. While MarinaTex is not yet in market, the company's focus is on building long-term infrastructure and partnerships that can deliver scale without compromise.

MarinaTex believes that the future of materials lies in working with nature, not against it. By aligning material innovation with ecological processes, it is helping industries transition away from fossil-based plastics toward solutions that are effective, responsible and built for circularity from day one.



“The one thing I want the audience to take away from this event is that circular solutions are out there, and they’re ready to scale and create impact now.”

Lucy Hughes, Founder and COO, MarinaTex



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