



Volvo Cars:

THE RISE OF CONSCIOUS DESIGN

A report about tomorrow's materials

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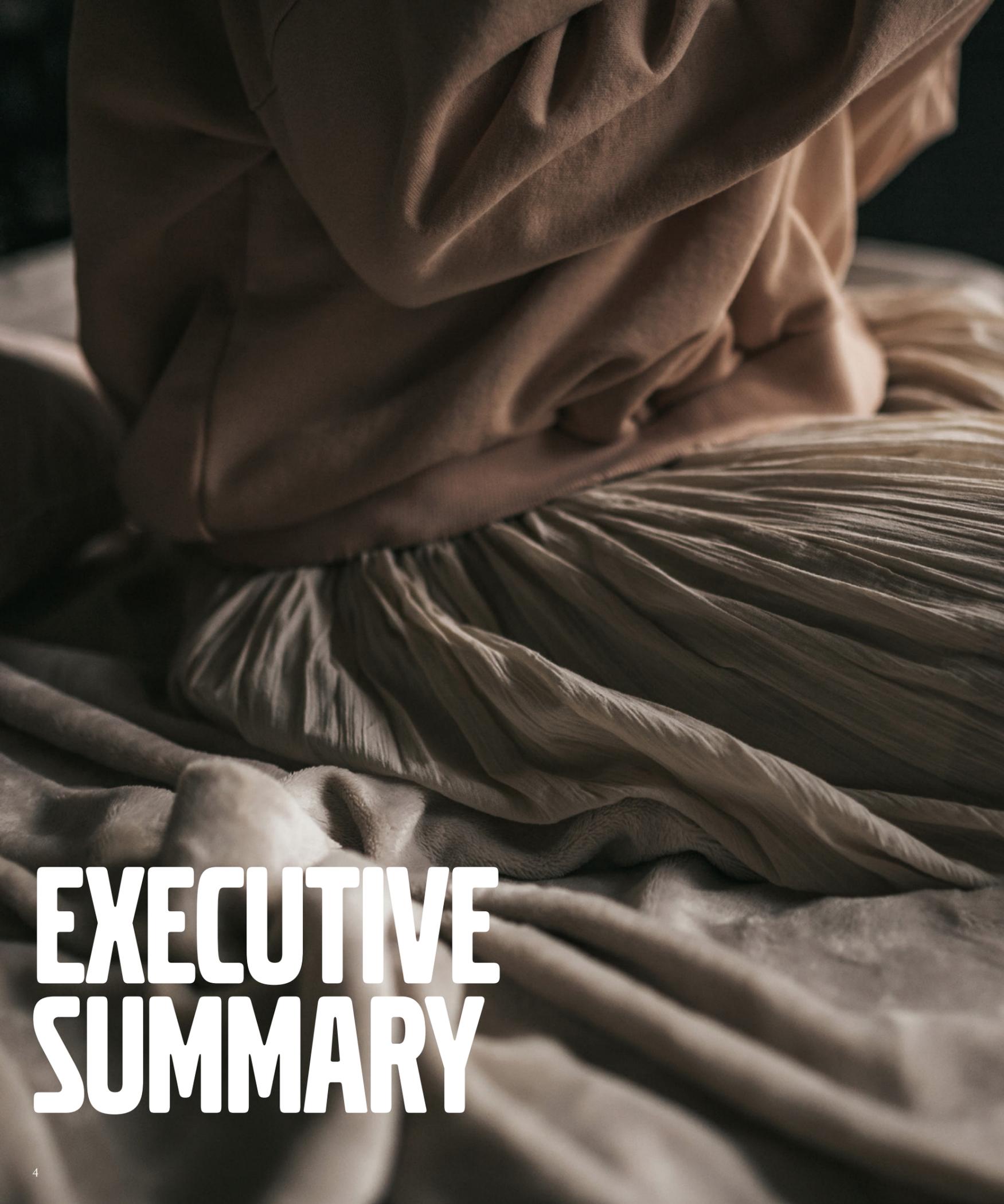
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“Taking a sustainable approach, being responsible and connected with nature, is vitally important. The future is about taking responsibility for doing the right thing, looking after people and, of course, their futures too.”

ROBIN PAGE, SENIOR VICE PRESIDENT OF DESIGN, VOLVO CARS

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EXECUTIVE SUMMARY

Welcome to the era of conscious design

As the impact of our consumption on the environment becomes increasingly visible, a generation of future-facing businesses, designers and organisations are adopting considered, long-term, sustainable and circular approaches to design.

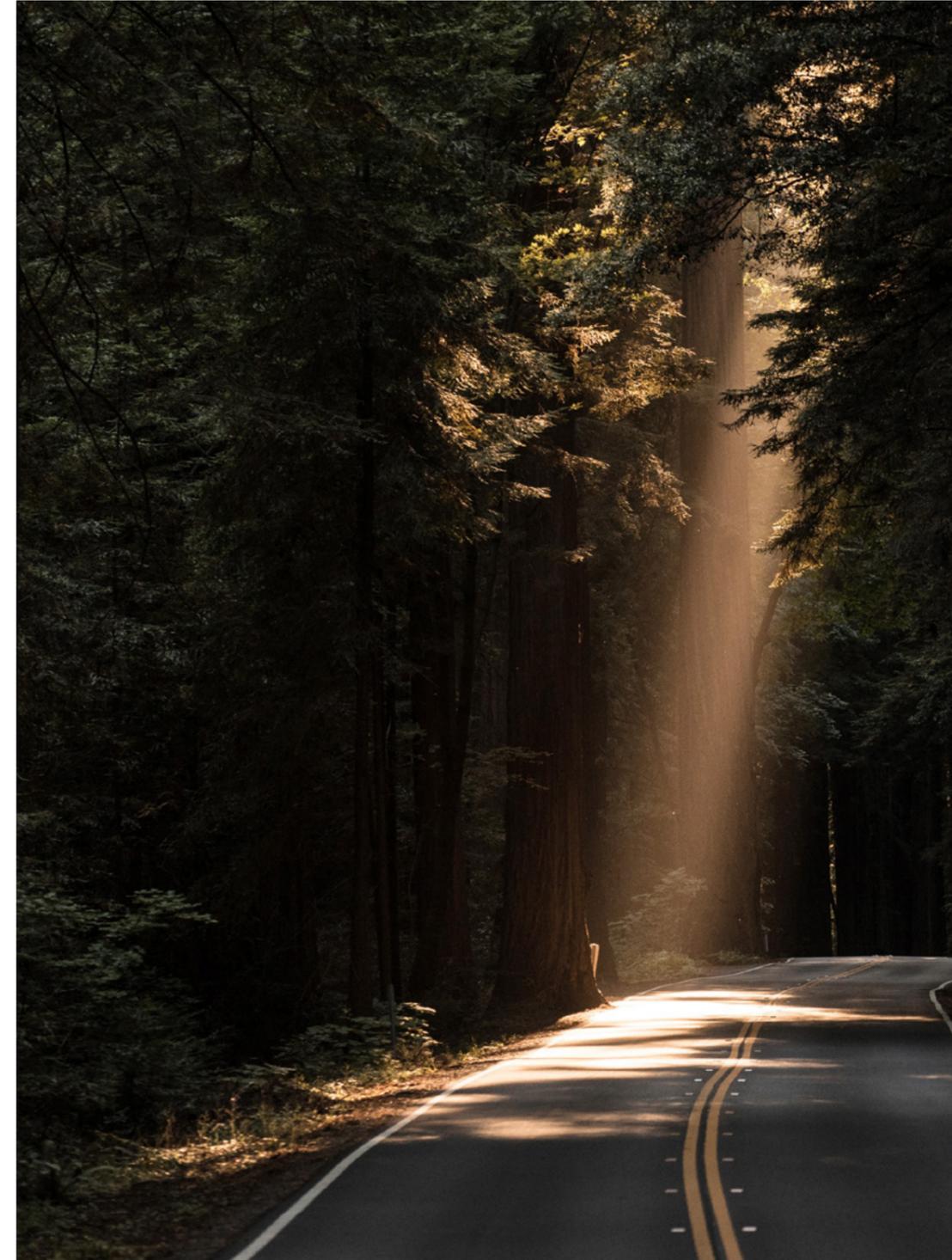
But before this future can be fully realised, a new material world is first required. At present, many materials in use consist of virgin or fossil-based synthetic fibres, requiring water- or chemical-intensive processes, or derived from sources that may not prioritise animal welfare.

In this report, strategic foresight consultancy The Future Laboratory, in partnership with Volvo Cars, explores the forces that are shaping the rise of conscious design and its new material world. We reveal the future materials and design principles that will sit at its heart over the next five years and beyond. We examine:

- How a holistic understanding of ethical issues, a trust deficit between consumers and brands, a renewed appreciation of nature and the merging of luxury and sustainability are converging to bring us into an era of conscious design
- A renewed appreciation for natural materials elevated by their timelessness and superpower properties
- How new value and prestige will be attributed to discarded materials that are transformed into not just something new, but something better
- The rise of positive-impact materials capable of restoring biodiversity and regenerating the environment
- The new wave of experimental innovations harnessing previously untapped resources and pushing the possibilities of what materials can do
- How the eco-systems behind the production and manufacture of materials will be transformed to embrace circularity, regeneration, transparency and collaboration

THE RISE OF CONSCIOUS DESIGN

As society grapples with a series of existential challenges and the window to prevent irreversible environmental damage grows smaller, a generation of future-facing businesses, designers and organisations are adopting considered, long-term, sustainable and circular approaches to design. Welcome to the era of conscious design.





“Global demand for new textile fibres is forecast to increase by 150% by 2050.”

AXFOUNDATION

The rise of conscious design stems from a pressing need to ensure that future products across categories are ethical, sustainable and regenerative. For Xu Gang, co-founder of Bentu Design, this represents a challenge of planetary proportions. ‘Society faces the dual threats of resource scarcity and environmental degradation,’ he says. ‘The burden on our planet has increased dramatically. Creating sustainable concepts and using sustainable materials is now a universal issue closely bound up with the survival and development of humanity as we know it.’

With global demand for new textile fibres forecast to increase by 150% by 2050, according to Axfoundation, a new material world is required before this future can be fully realised. At present, many materials in use consist of virgin or fossil-based synthetic fibres, requiring water- or chemical-intensive processes, or are derived from sources that may not prioritise animal welfare.

Looking more closely at a material like leather highlights the myriad issues one material can raise. Firstly, there are ethical concerns. According to the World Statistical Compendium for Raw Hides and Skins, the hides and skins of over one billion animals are used for leather production every year.

At the same time, leather scores highly on the Higg Materials Sustainability Index due to a high contribution to global warming, water use and pollution, while a considerable amount of chemicals are required to ensure it doesn’t biodegrade. Meanwhile, the UN Food and Agriculture Organization (FAO) states that cattle alone are responsible for 9% of all human-induced greenhouse gas (GHG) emissions – representing 4.7 gigatonnes of GHGs a year.

In response, a generation of innovative businesses, designers and organisations are re-assessing how they design products and the materials they use in them, pushing a future of conscious design forward. And the transformational impact of this innovation isn’t lost on Martin Raymond, co-founder of The Future Laboratory. ‘Conscious design can fundamentally transform our society,’ he says. ‘It’s integral that brands harness the opportunities on offer and ensure that their products are designed to deliver planetary safety as well as personal safety.’

Volvo Cars is already on this journey, and has decided to have no leather in its future electric cars as part of its commitments to sustainability. It’s a significant step both ethically and sustainability-wise; research from McKinsey & Co reveals that by 2030, at least one-third of carbon emissions in vehicles will come from material production. Such commitments are spurring further material innovation. Demand for leather alternatives means the vegan leather market is expected to reach £63.2bn (€73.1bn) in value by 2025, according to Infinium Global Research, and the global synthetic leather market will be worth £55.3bn (€64bn) by the same year, according to Research and Markets.

As we move into the future, these shifts will have a transformational impact on notions of luxury too, with circularity sought after, positive impact equalling premium, and materials judged and valued based on their regenerative capabilities. As Wen Zhou, CEO of fashion label 3.1 Phillip Lim, states: ‘To me, finding materials that don’t harm the planet or its people is the ultimate luxury.’

In this report, strategic foresight consultancy The Future Laboratory, in partnership with Volvo Cars, explores the social, cultural and technological forces that are shaping the rise of conscious design and its new material world, revealing the future materials and design principles that will sit at its heart over the next five years and beyond.

For Robin Page, head of design at Volvo Cars, understanding, adapting to and spurring forward this era of conscious design is integral to progress. ‘Taking a sustainable approach, being responsible and connected with nature, is vitally important. The future is about taking responsibility for doing the right thing, looking after people and, of course, their futures too. Our approach to safety is not just about the car – it’s a much bigger picture than that.’



“Taking a sustainable approach, being responsible and connected with nature is vitally important to us. The future is about taking responsibility for doing the right thing, looking after our customers and of course their futures too. Our approach to safety is not just about the car – it’s a much bigger picture than that.”

ROBIN PAGE, SENIOR VICE PRESIDENT, DESIGN, VOLVO CARS

CONSUMER DRIVERS

The rise of conscious design is being driven by a series of influential social, cultural and technological shifts that are transforming consumer demands, expectations and outlooks.

For today's increasingly informed and savvy consumers, products created by brands they engage with must match their own ethical attitudes. 'Consumers are becoming more educated and aware,' says 3.1 Phillip Lim's Wen Zhou. 'They understand that they can hold brands accountable through their spending. Mindset shifts will have a huge impact on the future of design and material use, in particular, and the onus is on everyone to respond in the right way.'

Four consumer drivers are shaping what this response looks like, with a holistic understanding of ethical issues, a trust deficit between consumers and brands, a renewed appreciation of nature and the merging of luxury and sustainability converging to bring us into an era of conscious design.



Whole-System Thinking

Once focused specifically on environmental factors, consumers are rapidly developing a more holistic understanding of sustainability and ethics.

‘The external awareness around the fundamentals behind sustainability – not just aspects like understanding carbon footprints – but fully sustainable products, including things like circularity and responsible sourcing, has grown tremendously over the past couple of years,’ says Linn Fortgens, head of sustainability procurement at Volvo Cars. ‘Now, we really see it playing out in consumers’ choices.’

This growing awareness is driving the emergence of a new generation of consumers – the Regenizens – who are community-focused citizens reframing their relationship with consumption to be not just more sustainable, but also regenerative and ethical. It’s a mindset that’s being adopted en masse, with 79% of consumers changing their purchase preferences based on social responsibility, inclusiveness or environmental impact, according to research from [Capgemini](#).

It’s also a mindset that’s been accelerated by the pandemic, with events of the past year reminding us how interconnected we remain in a globalised world. Post-crisis, more than two-thirds (67%) of consumers say they’ll be more cautious about the scarcity of natural resources, while 65% will be more mindful about the impact of their overall consumption.

As Wen Zhou states: ‘The pandemic has been a huge wake-up call. It’s revealed our interconnected nature and how interdependent we are on each other. No one is safe until everybody is safe, and to get there is everybody’s collective responsibility.’

Perhaps nowhere is the Whole-system Thinking of Regenizens more evident than in consumer concern about animal welfare, with a convergence of environmental, ethical and sustainability concerns fuelling a desire for animal harm-free products and materials. It’s partly why the global vegan food market is expected to grow from £10.18bn (€11.78bn) in 2020 to £11.12bn (€12.87bn) in 2021, according to The Business Research Co, as people seek new ways of life that limit their environmental impact, positively benefit biodiversity and protect the welfare of animals too.

‘Animal welfare and sustainability may seem distinct, but they overlap heavily,’ says Claire Bergkamp, chief operating officer of global non-profit organisation Textile Exchange. ‘As a result, the level of passion that people show towards animal rights is unparalleled – it’s a really powerful lever for change which brands must respond to.’



“The smart companies, manufacturers or brands are the ones who are starting to invest in sustainable material innovation. There’s a real thirst from consumers for that.”

CAROLINE TILL, CO-AUTHOR OF RADICAL MATTER:
RETHINKING MATERIALS FOR A SUSTAINABLE FUTURE



Trust Fatigue

After a year of unprecedented turbulence, we're now experiencing an epidemic of widespread mistrust of institutions around the world.

According to [Edelman's Trust Barometer](#), a global majority now believe that government leaders (57%) and journalists (59%) are purposely trying to mislead people by saying things they know are false, while nearly two-thirds are seeing more 'trust-washing' from brands.

Amid this miasma of mistrust and misinformation, however, there is a silver lining for business. Edelman's research also reveals that three in five consumers globally (61%) trust business – making it the most trusted institution globally, ahead of governments, NGOs and the media, and the only institution seen as ethical and competent. It means that, when it comes to combatting mistrust and rebuilding bridges with consumers, nobody is better placed than the companies people choose to engage with.

To regain trust, brands are beginning to align themselves with the values of B-Corps, prioritising people and the planet over pure profit, and adopting more humanised approaches to conducting business.

'Now, more than ever, society is looking for leadership and guidance, and is turning to industry leaders capable of effecting change at the speed and scale required to face serious environmental challenges,' says Inna Jeschke, marketing manager for global vinyls producer Inovyn.

And just as important is communicating these efforts to consumers, who, when it comes to design and materials, will drive a new era of radical transparency around brands' supply chains and the adoption of all-new hyper-ethical standards. As Stuart Templar, director of global sustainability at Volvo Cars, states: 'Every industry is under scrutiny, and some more than others. To gain consumer trust – along with that of the media, investors and NGOs – transparency is imperative.'

It's a point affirmed by Dr Leonardo Bonanni, founder and CEO of supply chain transparency company Sourcemap. 'Conscious consumers are demanding products that have a clean bill of health when it comes to environmental and social impact,' he says. 'This is a major driver of supply chain transparency, which brands are harnessing to improve relationships with their customers and build trust.'

Nature Renaissance

After months of lockdowns across the globe, the pandemic has led to a renaissance of love for wildlife and nature among consumers, and a deeper appreciation of its power.

Throughout a tumultuous year, nature has been a saviour. 'For many, nature has provided a vital retreat from the stresses of the past year, offering people an opportunity for solace,' says The Future Laboratory's Martin Raymond. 'We now have an even greater appreciation of how integral nature is to our wellbeing.'

This appreciation has already begun to affect consumer decision-making, driving demand for all things natural, from natural ingredients to natural materials. And it's a shift that was already emerging pre-pandemic, as nature, which we had abandoned in so many ways, began to strike back, from wildfires in Australia and California to the melting of the permafrost that encased Norway's Svalbard Doomsday seed vault.

In response, brands have harnessed nature to elevate their products. Louis Vuitton is one case in point, with its latest scent, Pur Oud, consisting almost entirely of the natural essence of oud – a substance derived from agarwood – which takes hundreds of years to form as an oil that can be converted into perfume.

This nature renaissance isn't just restricted to ingredients, but includes animals too, with animal welfare an increasingly important issue for consumers across the globe. According to the Welfare Quality Network, 83% of consumers in Sweden and 73% in the UK say animal welfare is important to them, while in the US, research from YouGov revealed that almost two thirds (63%) of Americans would be less likely to buy meat from a company that had a bad reputation for animal welfare.

Responding to these concerns by prioritising nature stands to benefit society significantly. According to the World Economic Forum, if countries and businesses prioritise nature-positive solutions, they could generate £7.1 trillion (€8.2 trillion) in annual business opportunities and create 395m jobs by the end of 2030.

For businesses, the challenges lie in considering these issues holistically and creating design eco-systems that work with nature, rather than against. 'Focusing on natural materials and transforming supply chains to be in synch with nature is hugely powerful for any organisation,' says Textile Exchange's Claire Bergkamp. 'There is an opportunity to really challenge the status quo and shift our balance with wildlife and nature towards something positive.'





“If countries and businesses prioritise nature-positive solutions, they could generate £7.1 trillion (€8.2 trillion) in annual business opportunities and create 395m jobs by the end of 2030.”

WORLD ECONOMIC FORUM

Luxtainability Rising

A focus on sustainability, regeneration and circularity is driving new directions in luxury and welcoming an era of 'luxtainability'.

The global luxury market continues to bounce back from the impacts of the pandemic. According to [Bain & Co](#), the personal luxury goods market contracted by 23% in 2020 to £187.7bn (€217bn), but average growth of 15% is forecast for 2021 before a return to pre-pandemic levels in 2022. The Chinese luxury market was the only one to record growth in 2020, with a 45% increase in sales.

The world of luxury is undergoing a transformational shift, however, as brands heed the lessons of the pandemic and the climate crisis, and begin to address the social, economic and environmental needs of both the sector and aspiring luxury consumers.

In recent months, [Chanel](#) has teamed up with the University of Cambridge to accelerate sustainable innovation, for instance, while LVMH has launched [Nona Source](#), the brand's new platform for selling dead stock. Before this, [Burberry](#), [Gucci](#) and [Versace](#) were just some of the major brands to take a stand against animal cruelty by banning the use of fur items in their collections.

While luxury and sustainability have always been intertwined, such developments mean the two are becoming increasingly synonymous. 'In the future, sustainability will be – and probably is already to a degree – inextricably linked with luxury,' says Volvo Cars' Stuart Templar.

Carole Collet, professor in design for sustainable futures at Central Saint Martins, agrees. 'There is a natural connection between luxury and sustainability – and it will continue to grow,' she says. 'Luxury is heavily linked to notions of durability, repair, longevity and natural resources. Increasingly, we're also seeing links between conservation and luxury, with circularity and regeneration emerging strongly too.'

As a result, brands' environmental policies have never been more important to consumers: almost two-thirds (64%) of consumers globally consider a brand's environmental policies an important factor when making a purchase decision on luxury products, according to the [Vogue Business Index](#).

It's a shift that's also set to have a transformative impact on notions of 'premium' outside the pure luxury space too. In the automotive industry, for instance, sustainability will be integral to future premium options, as consumers seek products that deliver ethically, ensuring animal welfare, a positive environmental impact and benefitting people throughout the value chain.

While the four driving forces of Whole-system Thinking, Trust Fatigue, Nature Renaissance and Luxtustainability Rising represent global drivers of change, they present differently from country to country. Here we explore how they are manifest in China, the US, Germany, the UK and Sweden.

China

- 64% of Chinese consumers say they will consider products that are more environmentally friendly, owing to the pandemic's impact on consumer attitudes to product safety, the environment and healthy lifestyles (source: [McKinsey & Co](#)).
- 51% of urban Chinese consumers say they will now rent or buy second-hand products to help safeguard the environment (source: [Mintel](#)).
- China is the only country to have achieved growth in the luxury sector in 2020. By 2025, one out of two luxury products will be purchased in China (source: [Bain & Co](#)).
- Consumer trust levels in China declined in all sectors in 2021, especially from those closely related to people's lives, including drops in CPG (18 points), technology (13 points) and food and beverage (13 points) (source: [Edelman](#)).
- The Chinese government has outlined a plan to cut the country's meat intake by 50%, with the country's plant-based meat market estimated at 6.1bn yuan (£675m) in 2018 and projected to grow between 20 and 25% annually (source: [Global Food Institute](#)).

US

- Almost a third of Gen Z (30%) and Millennials (32%) in the US say they'd pay more for products that have the least negative impact on the environment (source: [McKinsey & Co](#)).
- Fewer than half (43%) of American shoppers think animal welfare for livestock in the US is sufficient, while almost three in four (72%) oppose testing cosmetic products on animals (sources: [Power of Meat](#), [PCRM](#)).
- 61% of US consumers are concerned about climate change, with 35% fearful (source: [Edelman](#)).
- Just 42% of Americans trust the government (source: [Edelman](#)).
- In 2021, the US retail market for plant-based foods reached £4.9bn (£5.7bn), up from £3.9bn (£4.5bn) in 2019 (source: [Global Food Institute](#)).

Germany

- Three in five shoppers in Germany are willing to spend more on products that are better for the environment (source: [YouGov](#)).
- 59% of Germans feel that the media are not doing a good job when it comes to objective and non-partisan reporting, while more than two fifths (43%) say that journalists and reporters deliberately want to mislead people with incorrect and exaggerated information (source: [Edelman](#)).
- 57% of German consumers have made significant changes to their lifestyles to lessen their environmental impact, and more than 60% report going out of their way to recycle and purchase products in environmentally friendly packaging (Source: [McKinsey & Co](#)).
- Germany is home to the most vegans in Europe, with the number having doubled from 1.3 million in 2016 to 2.6 million in 2020 – a total of 3.2% of the population (source: [VeganZ](#)).

UK

- Over half (57%) of grocery shoppers in the UK are willing to spend more on products that are better for the environment (source: [YouGov](#)).
- 53% of people in the UK believe that government leaders are purposely trying to mislead them, while 52% subscribe to the idea that business leaders are purposely trying to mislead by saying things they know are false or gross exaggerations (source: [Edelman](#)).
- Almost three in four (73%) of UK consumers say that farm animal welfare is important to them (source: [Welfare Quality Network](#)).
- In the UK, younger generations are significantly more likely to follow a meat-free diet, with a fifth of Gen Z already doing so (20%) and a further 26% planning to adopt one in 2021 (Source: [Finder](#)).
- The number of vegans in the UK quadrupled between 2014 and 2019 (source: [Ipsos Mori](#)).

Sweden

- 83% of Swedish consumers say that animal welfare is important to them – a higher percentage than in any other country in Europe (source: [Welfare Quality](#)).
- More than two thirds (68%) of Swedes consider sustainability to be extremely important, with just 1% saying it is not important (source: [Statista/Kantar Sifo](#)).
- Sales of organic products in Sweden grew by £29.1m (£33.6m) in 2020 (source: [Nielsen](#)).
- 7% of the population in Sweden consider themselves to be vegetarian and 2% vegan (source: [Statista/Novus](#)).
- Together with other Scandinavian nations, Sweden is leading the charge on sustainable mobility, with plug-in electric vehicles accounting for 32.2% of vehicle sales in 2020 and full electric vehicles taking a growing share of the market (source: [Statista/EV-Volumes](#)).

CONSUMER SNAPSHOTS

TOMORROW'S MATERIALS



Conscious Design Materials

Over the next five years, the four driving forces of Whole-system Thinking, Trust Fatigue, Nature Renaissance and Luxtainability Rising will have radically transformed the expectations of consumers and the demands they place on brands.

An era of conscious design will emerge in response. Research from McKinsey & Co reveals that the potential value unlocked by companies taking a long-term approach could be worth £2.1 trillion (€2.4 trillion) by 2025. But a new material world will first be required to facilitate this future.

Looking ahead, brands, designers and innovators will begin to prioritise natural materials and their superpower properties, attribute new value to materials recycled into something better, work to restore biodiversity and regenerate the environment, and push the boundaries of what materials are capable of.

To explore this new horizon, we have identified four trends that will define conscious design's material world.



Natural Luxury

Driven by a renewed appreciation of nature's power post-pandemic, in the next five years textiles derived from responsibly sourced traditional natural fibres will emerge as a new kind of premium in the materials space, elevated by their timelessness and superpower properties.

'The world of nature is inherent to the world of luxury,' says Central Saint Martins' Carole Collet. 'Wools, cashmeres, silks, cottons and linens are the backbone of the industry.' As we move through the decade, the powerful properties of natural materials will mean this will become true in many other industries too.

Wool – when responsibly sourced – is one case in point. As Claire Bergkamp of Textile Exchange says: 'Wool is kind of miraculous. It doesn't get the respect it deserves. It can be so beautiful and is such a versatile material. It's durable, long-lasting, self-cleaning and, importantly, natural.' In addition, wool is also naturally flame-retardant, and its unique composition means there is no need to add chemicals to achieve these superpower features.

Swedish wool represents a material of significant opportunity. In Sweden, about 1,200 tonnes of wool are produced annually, of which only 37% is used. It's a statistic that's driven non-profit Axfoundation to create the Swedish Wool Initiative – a cross-sector collaboration whose purpose is to enable Swedish fashion and outdoor brands and their suppliers to easily access Swedish wool as a raw material.

After an initial proof-of-concept pilot, the initiative is now running an industrial-scale pilot focusing on building system capacity for collection, sorting and quality assurance of Swedish wool to be used by fashion and outdoor brands.

Brands are beginning to cotton on to wool's potential too. Fashion start-up A New Sweden, for example, uses Swedish wool for its garments, which are produced in Sweden using solely Swedish materials – no chemicals and no other plastic materials – meaning there is no micro-plastic pollution. The North Face, meanwhile, has used 100% natural and renewable wool insulation in its heritage collection, which is also fully traceable back to the farm on which it is grown.

When it comes to manufacturing, even more innovative qualities are being achieved with wool through less conventional approaches. Doppelhaus, which produces Cloudwool, is one example. Cloudwool combines ethically sourced British wool with German-engineered technology. Made using an Oeko-Tex certified non-woven manufacturing process – more efficient and ecological and involving significantly fewer stages than conventional textile production – Cloudwool is lighter and more flexible than felt, is highly breathable, acoustically insulating and has no directional grain line, preventing it from fraying.

Appreciation of materials made from plant fibres is also rising again. Linen – derived from flax – is key among them. In terms of sustainability, flax is often considered a preferred fibre with less harmful environmental impact. The cultivation of flax requires almost no irrigation and polluting chemicals, while every year, flax-growing in Europe captures 250,000 tonnes of CO₂ – saving emissions equivalent to driving a car around the world 62,000 times (source: World Linen).





“Flax-growing in Europe captures 250,000 tonnes of CO₂ – saving emissions equivalent to driving a car around the world 62,000 times.”

SOURCE: WORLD LINEN

But it's more than just environmentally beneficial. According to a study from Sezione Lino (linen section) of Sistema Moda Italia and the European Confederation of Linen and Hemp, linen is highly durable, resistant, hypo-allergenic, breathable, acts as a thermoregulator and is incredibly versatile. In many ways, it's a noble fibre – it can be worked into everything from light, fresh shirts to durable, resistant ship sails, holding cross-industry appeal as a result.

Cecilia Stark, senior design manager at Volvo Cars, points out that linen could be an interesting material for the automotive sector. 'Linen holds huge potential. It's a historic material that becomes more beautiful over time,' she says. 'What's most interesting is that it's very light and super-durable, meaning it can be used for textiles but also has potential as a replacement for carbon fibre.'

While flax has been used to create cloth since around 8,000 BC, new manufacturing methods continue to push linen even further forward. Innovation is giving rise to winter linen, formaldehyde- and fluoride-free waterproof linen, denim and stretch linen as well as decorated linen, driven by companies like Bast Fibre Technologies – a fibre engineering firm based in Canada that develops IP-protected enhancements for flax.

What these natural fibres and their myriad properties demonstrate is that when it comes to finding materials to facilitate conscious design, nature offers many answers. 'Nature provides us with so much already,' says Wen Zhou from 3.1 Phillip Lim. 'The future is about creating better, more respectful ways in which to use what nature has given us, embedding natural materials as part of eco-systems across different industries and letting their properties shine through.'

Repurposed Richness

As sustainability and luxury become synonymous, new value is being attributed to once discarded materials freshly transformed into not just something new, but something better.

Where premium once pertained to a desire for products and materials untouched, the rise of conscious design means the opposite is becoming true. 'The future of premium and luxury will revolve around basic 'R' principles – recycle, repair, reduce, re-use, repurpose and rethink,' says 3.1 Phillip Lim's Wen Zhou. 'Increased awareness will see people seeking these values in the products they buy.'

As well as changing consumer mindsets, a new level of quality in recycled materials is also enabling this future to emerge. 'Traditionally, recycled material has been regarded as inferior to virgin material in terms of quality,' says Volvo Cars' Stuart Templar, 'but now the materials that are produced – particularly for the automotive sector – have a premium feel and a real sense of quality.'

Sweden-based Renewcell is a sustainable materials company leading us towards this future of Repurposed Richness. Using a patented process, Renewcell strips down worn-out clothes that contain cellulose – such as cotton and viscose – turning the pulped fibres into Circulose, a new form of biodegradable material for garments that is hyper-durable.

Launched in 2020, the material reduces reliance on virgin cotton, oil production and tree-harvesting, in turn using less water, fewer chemicals and emitting less CO₂ than traditional material production. And it's already making an impact, with Circulose used by brands such as Levi's and H&M in their existing manufacturing eco-systems, while Renewcell has recently announced a partnership with vintage store chain Beyond Retro, which will supply the company with 30,000 metric tonnes of old jeans and cotton that could not be sold second-hand.



“The future is about creating better, more respectful ways in which to use what nature has given us, embedding natural materials as part of eco-systems across different industries and letting their properties shine through.”

WEN ZHOU, CEO, 3.1 PHILLIP LIM



Regenerated cellulose is also the focus of the New Cotton Project, an EU-funded consortium that brings together a group of 12 brands, academics, manufacturers, textile recycling and waste processing companies. The project aims to recapture the valuable raw materials in discarded clothing and regenerate them back into high-quality, cellulose-based fibres that can be spun into new yarn, woven into new fabric and designed into new clothes – over and over again. During the three-year project, Finnish biotech company Infinited Fiber will provide its chemically recycled cellulose fibres to H&M and adidas for use in their clothing lines.

From the hyper-durability of Circulose and the high quality of Infinited Fiber's cellulose, what's most impressive about these regenerated and recycled materials is that they don't just represent something old being turned into something new, but into something better instead. But perhaps the best example of this Repurposed Richness is in the luxury sector.

Over a three-year period, Italian luxury fashion house Prada has developed a new eco-friendly material from recycled polyester. Known as Extreme-Tex, the material is lightweight yet structured,

and both water-repellent and durable. Interestingly, Extreme-Tex is also capable of thermoregulating the body and has anti-bacterial properties fused to the fibres to deal with any incidental sweat, qualities that could see the material or similar alternatives applied across myriad industries.

Should the production of virgin polyester wind down, recycled polyester has the potential to exhibit another traditional characteristic of premium or luxury: scarcity. As Textile Exchange's Claire Bergkamp explains: 'We're likely to experience a global shortage of recycled polyester, as plastic water bottle companies begin collecting and recycling their own waste, for instance.'

Closing the loop on polyester in this way could mean materials like Extreme-Tex will become extremely sought-after. And while it means recycled polyester represents a short-term solution rather than a long-term one, its potential should still be harnessed. 'It's already out there,' says Carole Collet, 'so let's re-use it.'

Bio-positive Premium

A new generation of sustainable designers are creating positive-impact materials capable of restoring biodiversity and regenerating the environment.

Consumer expectations of sustainability are growing exponentially, but soon talk of sustainability will be replaced by a focus on regeneration instead. According to Carole Collet, it's a shift many premium brands are already preparing for. 'When it comes to premium, brands are increasingly looking beyond sustainability towards regenerative practices,' she says. 'Regenerative materials – while still nascent – are fast emerging and hold significant promise.'

This shift will fundamentally transform the sustainability credentials that future materials must exhibit and will redefine materials – with the level of positive impact to become as important as the patina of a material in an era of conscious design. Generally, there are two ways to achieve this positive impact: either by using waste and by-products to create new materials, or by harnessing the power of certain materials to restore biodiversity or sequester carbon from the atmosphere.

When it comes to leather alternatives, a new generation of designers and start-ups are looking to food waste and by-products of the food industry to create new materials. Tômtext – a flexible bio-material by Vietnamese designer Uyen Tran – is one alternative to leather. Made of discarded crustacean shells and coffee grounds, the textile can be embossed and is as durable as real leather, but also biodegradable.

Similarly, design agency PriestmanGoode has been working with material designers to create different disposable, durable yet environmentally friendly offerings. One uses cacao waste from industrial chocolate production, while another is made of Piñatex, a material produced from the pineapple plant's leaf fibres, usually thrown out during pineapple harvesting.

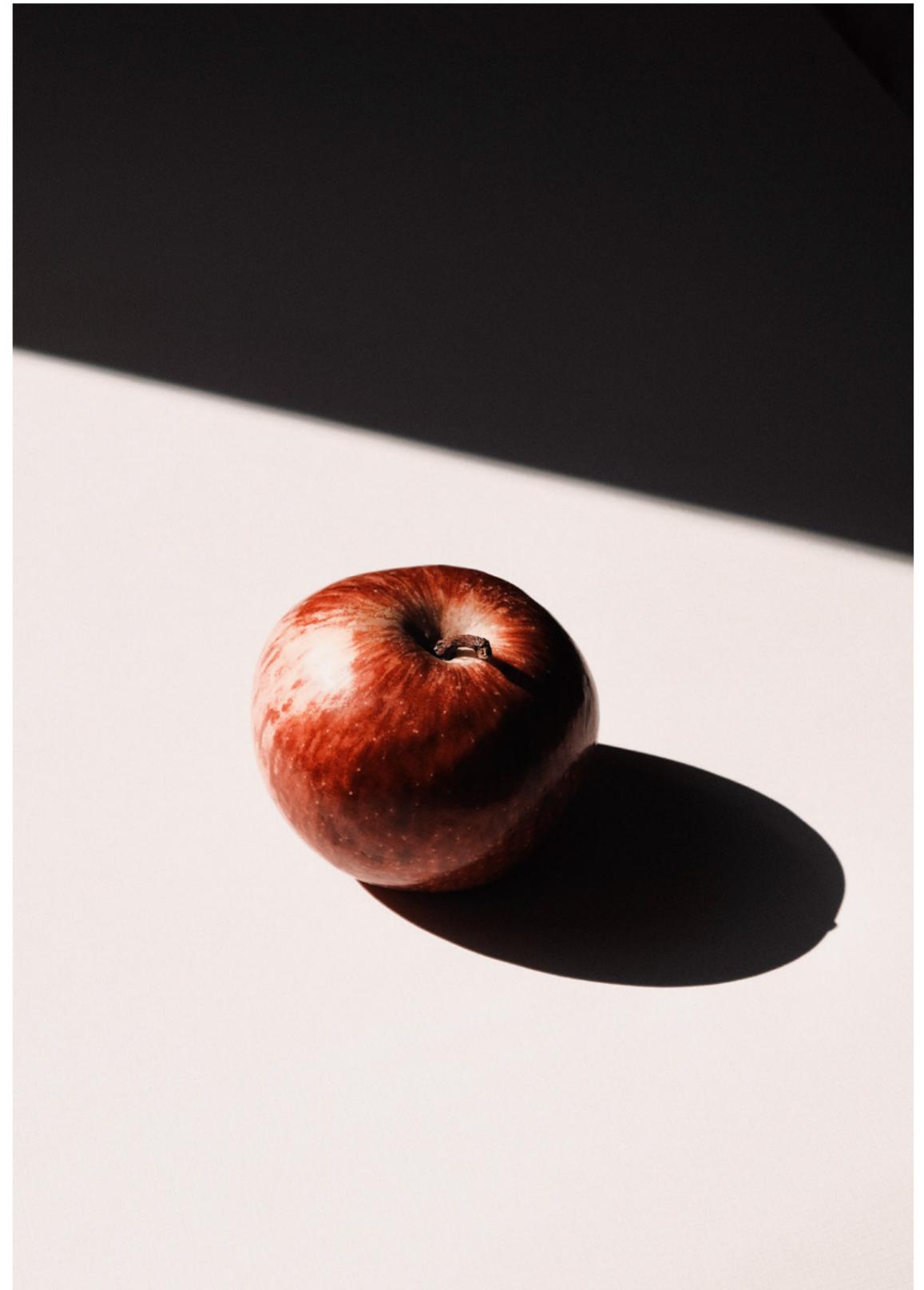
Developed by Ananas Anam, Piñatex holds significant potential as a future premium material. Piñatex fibres are by-products of the pineapple harvest and require no extra land, water, fertilisers or pesticides beyond what's needed to cultivate pineapples for consumption. Soft, flexible and breathable, Piñatex can also be cut, stitched and printed on, leading to a wide range of potential uses, from fashion and furnishings to the automotive industry.

Joining Piñatex in a thriving vegan leather market is apple leather, a bio-based and biodegradable material made using the leftover pomace and peel from the fruit juice and compote industry, which leading watch brand Skagen has used in a range of vegan leather watches made from apple, bark and cork.

Copenhagen-based materials company Beyond Leather Materials, meanwhile, has introduced its own apple leather called Leap – which stands for LEftover APples. The Danish start-up last year announced a £951,000 (€1.1m) seed funding round. Leap can be produced in only one day using 99% less water and emitting 85% less CO₂ than traditional leather production, without the use of animals or harmful tanning substances. Beyond Leather Materials aims to produce the material on an industrial scale by 2022.

As Lei Yuxi, founder and CEO of NANOxARCH, China's first and only social innovation venture focusing on sustainable material design, states: 'When we look at the natural systems we are all a part of, there really should be no such thing as waste. We need to humbly learn from these systems and use waste, for at the moment we are the only species generating it.'

As well as using waste, future-facing designers are also looking to harness the positive, purifying impact of previously untapped materials like algae. Designer Phillip Lim, for instance, teamed up with industrial designer Charlotte McCurdy to create a luxury dress made from carbon-sequestering algae. Algae bioplastic fronds are sewn onto a biodegradable base layer made of plant fibres, which makes the dress free of crude oil derivatives such as synthetic fibres, dyes and plastic sequins.





New York-based McCurdy previously created a water-resistant jacket made entirely of biopolymers derived from marine algae. She describes the bioplastic material as carbon-negative because its material, the algae, naturally sequesters carbon.

'Carbon-sequestering materials are really pushing the envelope and enabling materials and products to make a positive impact on the planet – and you would never know they were made from things like algae,' says 3.1 Phillip Lim's Wen Zhou. 'The next question is to figure out how we can take these materials and scale them or industrialise them, so that every single person and every single industry can use them.'

One company to have achieved this goal is vinyls producer Inovyn. Born out of the desire to help wide-ranging industries tackle their carbon footprint and to help them report better eco-profiles, the company has developed Biovyn – the world's first commercially available bio-attributed PVC, produced entirely without any fossil fuels.

Biovyn is made using bio-attributed ethylene, a renewable feedstock derived from biomass that does not compete with the food chain, and has numerous value-added applications across a range of industry sectors, including general purpose but also highly specialised end-uses such as automotive or medical.

'It was created completely with industry in mind and is enabling wide-ranging sectors to significantly drive down their carbon footprint,' says Inna Jeschke, marketing manager for Inovyn. 'It is a readily available sustainable commercial solution that delivers the same durability, quality and performance as conventionally produced PVC, but with enhanced sustainability credentials.'

One material pushing the boundaries of Bio-positive Premium entirely is Totomoxtle, a marquetry material developed by Mexican designer Fernando Laposse that uses waste and restores biodiversity at the same time. Laposse has developed a technique for turning the waste from preparation of corn as a foodstuff into an attractive and versatile veneer, for use in everything from wall coverings to design objects. But as well as using a renewable, natural material, Totomoxtle has the added benefit of re-popularising an endangered species of maize.

Experimental Textiles

A new wave of experimental innovations are harnessing previously untapped resources and pushing the possibilities of what materials can do.

By 2025, textiles that are experimental today will have developed greater rigour, threatening to disrupt industries with use cases spanning different sectors. Mycelium – the underground root system of mushrooms – is one fast-growing, experimental material already gaining traction.

One company driving new directions in the mycelium field is Mycoworks, which turns mycelium into mushroom leather. The resulting material is sustainable, versatile and animal-free. But best of all, it feels and performs like leather and is uniquely customisable, with textures and other features that can be grown right into the material, which itself can be grown to nearly any shape and size. French luxury house Hermès has recently announced that it will use Mycoworks' material in its Victoria travel bag.

Material technology company Bolt Threads is working with a consortium of brands including [adidas](#) and [Stella McCartney](#) to bring Mylo, its own mycelium-based leather, to the masses. In exchange for the brands' expertise, Bolt Threads will provide the consortium with access to hundreds of millions of square feet of the innovative, sustainable material. Focusing on 2021, the partnerships will culminate in the launch of various collections incorporating Mylo leather into products.

Mycelium's ethical and sustainability credentials – taking a fraction of the time and resources to grow compared to processes for making leather from animal hides – marks just the beginning of its potential, however. 'It's mind-boggling what mycelium can do,' says Carole Collet. 'It's magical and the alchemist of the future. Experimentation is revealing greater possibilities, and it holds so much promise.'





One magical element Collet points to is the almost endless variation of mycelium. 'There are so many different types of mushrooms, thousands of different cultures that can be used depending on where they are grown, at what temperature, the soil type – the list goes on. Variations in each factor produce something unique.' One can imagine a future when types of mycelium grown in regions with optimal conditions could carry their own notions of premium, in the same way that champagne can only come from the specific wine region in France.

Beyond mycelium, Bolt Threads is also creating waves with Microsilk, a silk-like biosynthetic fibre. Bolt Threads studied silk proteins spun by spiders to determine what gives them their incredible properties, including high tensile strength, elasticity, durability and softness. It then developed technology to replicate that process sustainably on a large scale, with Microsilk made through a process of fermenting water, yeast and sugar with spider DNA.

adidas is another brand entering the lab to push the boundaries of new materials. The German sports giant has developed Strung, an industry-first textile and creation process that allows the company to input athlete data into the precision placement of each thread in any direction

it chooses. Using a robot capable of weaving more than 2,000 threads from different yarns, adidas has used Strung in a shoe, providing a seamless, lightweight cocoon around the foot, achieved with minimal excess material.

For Volvo Cars' Cecilia Stark, applying tech-driven tailored knit solutions to previously maligned materials like polyester significantly enhances their aesthetic appeal. '3D-tailored knit really enables designers to convey a sense of premium,' she says. 'It feels modern, high-end and has significant cross-industry application.'

Elsewhere, scientific discoveries continue to push the boundaries of what materials can do. Materials that can repair themselves are emerging that will not only increase product lifespans, but will also allow them to operate effectively in hostile environments. Slughaus's Wolverine outdoor utility bag, which the brand claims is the first of its kind, uses the FuseFabric material, which can be repaired simply by rubbing the affected area with your hands. Scientists at the Harvard John A Paulson School of Engineering and Applied Sciences have also created a new type of rubber that can self-heal once damaged, paving the way for the creation of tyres that could be used even after being punctured.

Bio-engineering, meanwhile, is allowing scientists to create substitutes for animal-derived materials that are more sustainable and more ethical. Modern Meadow has developed Zoa, a bio-fabricated leather made from a genetically engineered strain of yeast that produces animal collagen.

The brand's aim is not just to imitate leather, but to transcend the limits of cow hide. Bio-fabricated leather can be grown to a customised shape or form, it can be engineered to have additional properties such as stretch, and it can also be used to make a uniform roll of material, reducing wastage produced from cutting pattern pieces from irregularly shaped animal skin. Vitrolabs is a biotechnology company based in California on a similar journey, using stem cell-based technologies to develop 'slaughter-free' leather.

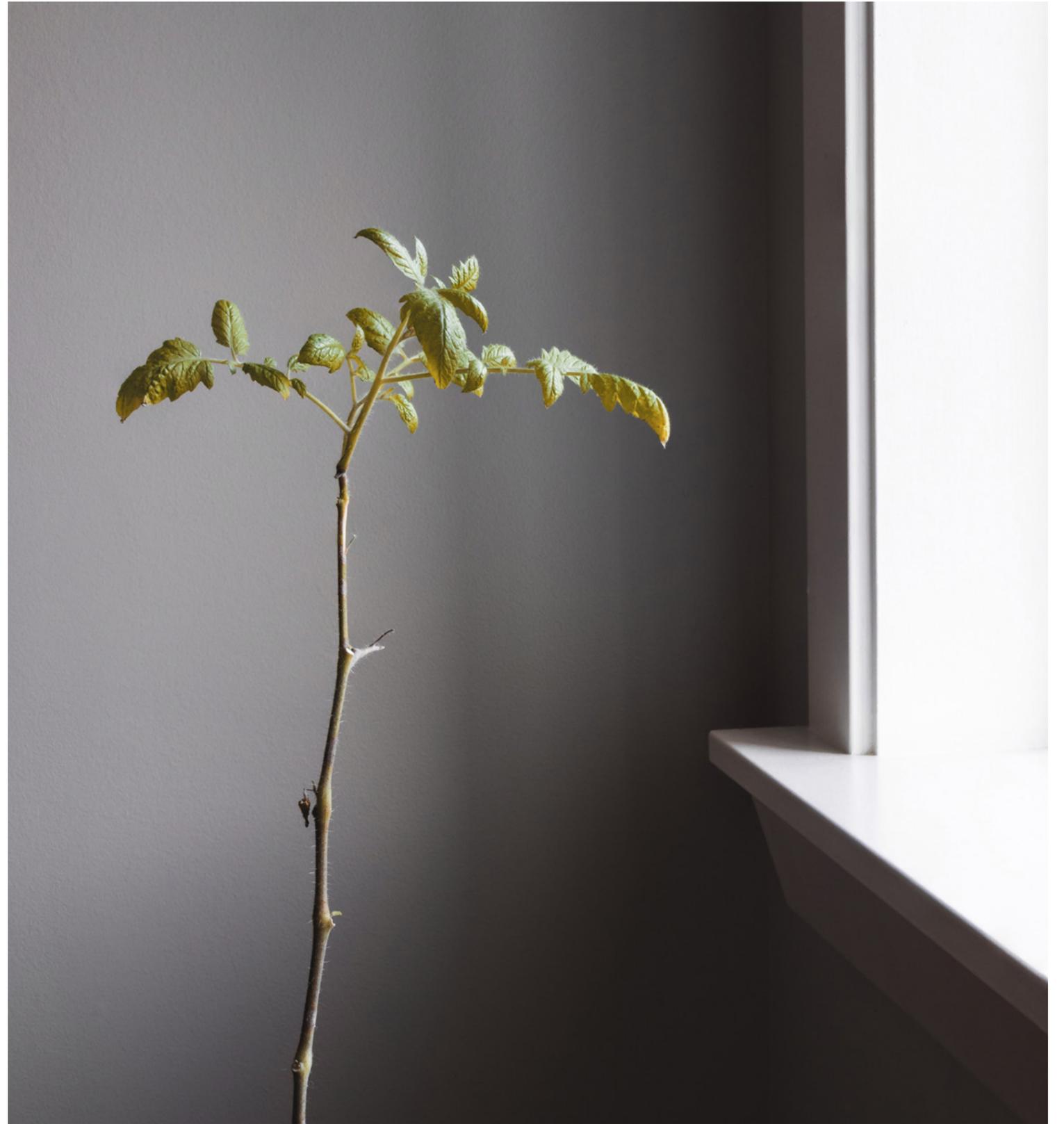
While these materials hold potential, it's important to remember that as solutions they remain in their early stages. 'There is potential in lab-grown luxury, but it's long-term potential,' says Bergkamp. 'A lot of interesting things are happening in this space, and as more developments are made, the use cases for these materials will grow.'

Conscious Design Principles

For the future of conscious design to be fully realised, the eco-systems behind the production and manufacture of materials must first be transformed.

'Every material can have a future,' says Xu Gang of Bentu Design. 'What really matters is ensuring that the processes behind them are reconsidered to minimise their impact.' Future-facing brands will need to embrace four macrotrends – Circular Economies, Regenerative Resilience, Total Transparency and Open-source Sustainability – to ensure that future materials embody conscious design by being sourced ethically, existing within closed loops and having a positive impact on the environment.

As Textile Exchange's Claire Bergkamp says: 'We need to look at the whole picture for each material we use and ask: 'What's the best possible system within which this material could exist?''





Circular Economies

Future materials and products will be circular by design, as the world moves away from linear consumption models towards closed-loop systems.

In recognition that we have reached the limits of current linear consumption models of taking, making, using and disposing, a growing number of businesses are embedding circular principles in their operations in a bid to redefine growth, encourage repurposing, squeeze maximum value from existing products and prioritise access over ownership. In the US alone, almost two thirds (62%) of companies now plan to move towards circularity, while 16% already use circular economy principles, according to ING.

Both the economic and environmental opportunities if products and materials stay in use longer are vast: limited resource extraction means less waste, lower risk in supply chains and reduced pollution. According to the 2021 Circularity Gap Report, circular economy strategies could cut global greenhouse gas emissions by 39%, while the Ellen MacArthur Foundation forecasts that restorative approaches would deliver an annual net material cost-saving of £423bn (€490bn) by 2025 in Europe alone.

Naturally, the fashion world is at the forefront of this new circular landscape, with industry waste set to reach 148m tons annually by 2030, according to Global Fashion Agenda and Boston Consulting Group. In response, Gucci has released its first experiment in circularity, Gucci Off the Grid, a line of accessories and streetwear made from recycled, organic, bio-based and sustainably sourced materials, while designer Christopher Raeburn launched Raefound, an evolving, non-seasonal and entirely circular new fashion collection.

While these examples are specifically in the fashion world, they are part of a movement occurring across industries. After all, a cross-industry, collaborative approach to innovation is key to building circular eco-systems. As Carole Collet says: 'A circular economy is not sector-dependent. It's about thinking outside of the box and embracing collaboration – one industry's waste could be utilised in another industry.'

Looking forward, the automotive sector is one area ripe for circular principles to flourish. Refurbishing and re-using automotive parts, such as transmissions, retains more value and uses less energy than recycling, while some £614bn (€711bn) can be saved by recovering manufacturing costs by 2030, according to the World Economic Forum.

'I think the circular economy is going to be crucial,' says Volvo Cars' Stuart Templar. 'It requires a fundamental change from the way we've produced cars for nearly 100 years, and that's going to be a massive challenge, but one we must rise to.' Templar notes that the circular economy can deliver both significant environmental and financial benefits for Volvo. From 2025, it is aiming to adopt circular economic principles to reduce its carbon emissions by 2.5m tonnes annually, as well as generate cost savings of £85m (€98.4m) each year, before becoming a fully circular business by 2040.

Regenerative Resilience

From carbon-sequestering to improving land resilience, future-facing brands are spearheading a new movement of regenerative practices when sourcing raw materials.

According to the [FAO](#), agriculture, forestry and other land use accounts for almost one quarter (24%) of greenhouse gas emissions globally, with a football pitch worth of soil eroded every five seconds. As a result, before materials derived from natural fibres can truly be considered premium and sustainable, brands must first ensure they embrace practices that regenerate the land from which they came.

‘Regenerative agricultural methods can be applied to a number of materials, and there’s the potential to do really great things on the ground,’ says Textile Exchange’s Claire Bergkamp. ‘From programmes looking at grassland regeneration to grazing mechanisms, regenerative practices are primed to take off and become a viable option for different industries.’

For a long time, the move towards regenerative resilience was spearheaded by food brands. [PepsiCo](#), for instance, has launched its Positive Agriculture ambition, with the goal to spread regenerative farming practices – which can take carbon out of the atmosphere and return it to the soil – across 7m acres by 2030.

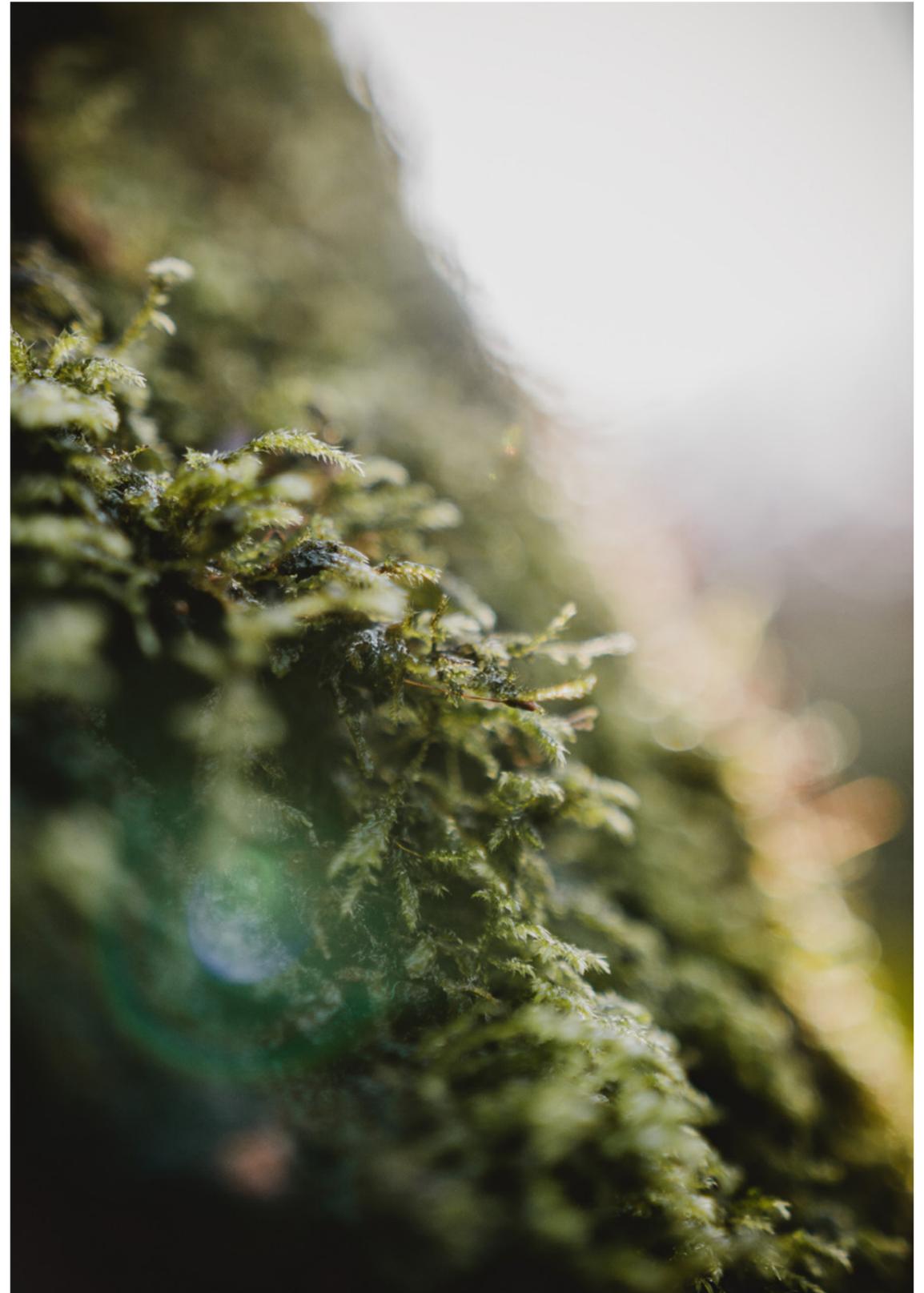
But activity is growing in the fashion and luxury sectors too. Luxury conglomerate [Kering](#), for example, has established its Regenerative Fund for Nature with Conservation International, providing grants to farmers, NGOs and key stakeholders who are creating eco-friendly agricultural processes in the fashion sector.

As Carole Collet says: ‘Regeneration is what luxury brands are already investing in and other sectors need to follow suit. Brands that aren’t funding R&D for regenerative practices now won’t exist by 2030. It’s really an entire paradigm shift.’

Brands like [Allbirds](#) are also harnessing this future, and recently announced that all of its wool will come from regenerative sources by 2025. [Timberland](#), meanwhile, is building a regenerative rubber supply chain in Thailand, which will grow various tree species to mimic a natural forest ecosystem, with the brand hoping to pilot its rubber in products by 2023 and eventually allow other brands to buy it. Next year, [The North Face](#) will also launch a collection of clothing featuring sustainable cotton from growers that draw down carbon from the atmosphere and restore soil health.

Alongside brands, non-profit organisations like Fibershed are driving this future forward. Fibershed works to develop regional fibre systems that build soil and protect the health of the earth’s biosphere, with its ultimate goal to reform the way people farm, manufacture and interact with textiles, and re-invent our textile economy.

For [NANOxARCH](#)’s Lei Yuxi, such developments represent the only way forward. ‘When it comes to materials sourcing, use and disposal, we need to both mimic and enhance natural systems. It’s the only way to secure our future and ensure that future generations have enough materials to utilise.’





“The need for innovation, given the complexity of supply chains and what consumers are asking for in terms of transparency, has existed for a while.”

LINN FORTGENS, HEAD OF SUSTAINABILITY PROCUREMENT, VOLVO CARS

Total Transparency

Demand for greater visibility over the provenance and journeys of materials represents the beginning of a new era of total transparency, where every material and its impact is fully traceable.

As the coronavirus pandemic revealed, in an increasingly globalised world the supply chains of many businesses have become large and fragmented, making monitoring materials and suppliers increasingly difficult. As Carole Collet attests, remedying these issues has for a long time proved costly and time-consuming. But a new wave of digital innovation, combined with the mass adoption of new standards, is making materials traceable once more.

In the next decade, technologies such as blockchain and radio-frequency identification (RFID), along with artificial intelligence (AI), the Internet of Things, machine learning and automation, will be implemented on a global scale, facilitating a future in which businesses and consumers alike can actively monitor materials, their scarcity and their environmental impact in real time.

‘The need for innovation, given the complexity of supply chains and what consumers are asking for in terms of transparency, has existed for a while,’ says Volvo Cars’ Linn Fortgens. ‘Now we have the technology to deliver this transparency.’

In the premium space, Burberry has already collaborated with IBM on a new product tracing system that gives consumers insight into the lifecycle of their clothing. Using IBM’s blockchain platform, the system identifies a product by scanning a near-field communication tag or entering a product ID, allowing consumers to trace a garment’s production at every stage.

Volvo Cars is another early leader, becoming the first car-maker to implement global traceability of the cobalt used in its batteries through blockchain. Blockchain boosts transparency of the raw material supply chain, meaning Volvo and its customers can be assured of the integrity of car parts, responsible sourcing and compliance with regulations.

According to Dr Leonardo Bonanni of Sourcemap, it’s an area well placed to drive forward a transparent future. ‘The automotive industry has some of the most advanced supply chain management practices and technologies in place,’ he says. ‘It’s helped pioneer modern supply chain technology to many degrees, and is always quick to adapt.’ Such innovations will become increasingly common over the next decade, with the blockchain supply chain market forecast to reach £6.97bn (€8.05bn) in value by 2025, according to Allied Market Research.

Equally integral to this new era will be the information that businesses choose to communicate to consumers tracking and tracing their purchases. In order to make maximum impact, we're likely to witness a new wave of standards, certifications and labels that prove a material is premium, sustainable and making a positive impact.

Organisations like Nativia are driving this future forward. Believing in traceability, sustainability, animal welfare and corporate social responsibility, Nativia has developed the Nativia Protocol for wool, which certifies every step of the supply chain, from farm to brand, ensuring animal welfare and sustainable land management. The Responsible Wool Standard represents another example, aiming to provide the industry with a tool to recognize the best practices of farmers, and ensure that wool comes from farms that have a progressive approach to managing their land and practice holistic respect for the animal welfare of sheep.

'Standards are one of the simplest and most legitimate ways to build trust with consumers,' says Textile Exchange's Claire Bergkamp. 'Not enough companies have leveraged this opportunity, but once a material is certified it can enhance trust both inside and outside an organisation and provide ongoing reassurance with standards audited annually.'

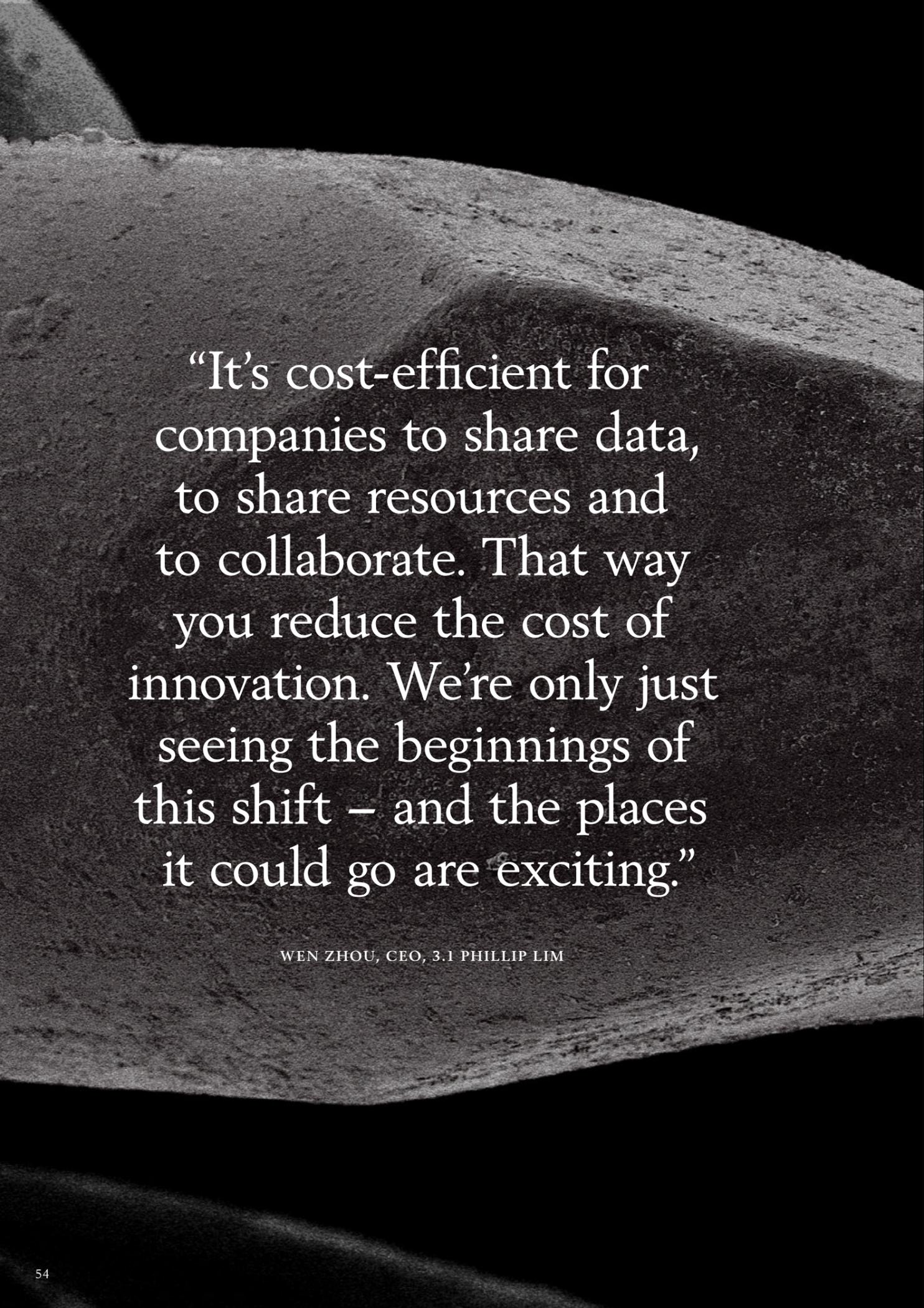
Footwear brand Allbirds is also working towards a similar future. In 2020, it began labelling its shoes with a number to represent their associated CO₂ emissions. The brand determines this figure based on the materials, development, manufacturing, packaging and shipping required for each product.

With research showing that 67% of global consumers support the introduction of carbon labelling on products, there is a clear desire for greater carbon transparency (source: [The Carbon Trust](#)). In response, Swedish start-up Doconomy has created its [2030 Calculator](#), a free tool for fashion brands and suppliers to calculate the carbon footprint of their products, helping them to communicate this to consumers more effectively.

Volvo is leading the industry in this regard too with the publication of a full carbon lifecycle analysis of its first fully electric vehicle, the XC40 Recharge. This revealed that the vehicle needs to be driven between 47,000km and 146,000km before it has a lower carbon footprint than the equivalent internal combustion engine vehicle.

As well as offering assurances of authenticity, businesses can also provide customers with edifying moments by enabling them to understand the story of a material or product. Lumi ID, for example, is a system that allows businesses to provide transparency to customers by integrating QR codes into packaging. After scanning the code, customers can view answers to FAQs, and real-time information about packaging specifications, certifications and local recycling options.





“It’s cost-efficient for companies to share data, to share resources and to collaborate. That way you reduce the cost of innovation. We’re only just seeing the beginnings of this shift – and the places it could go are exciting.”

WEN ZHOU, CEO, 3.1 PHILLIP LIM

Open-source Sustainability

As we move through the decade, open-source platforms will provide design insight and education for designers to make their output more sustainable and ethical.

The future of conscious design relies on new notions of collaboration among businesses, with companies working together to tackle issues beyond the reach of a single enterprise. As Inovyn’s Inna Jeschke says: ‘It is vital for businesses to convey a message of collaboration and to build awareness of the milestone achievements and significant breakthroughs they are making in the mission to shape the emerging bio-economy and a sustainable future for industry and the way we live today.’

Towards the end of the decade, this collaboration could be enshrined in the form of open-source, shared sustainability resources that companies can harness – covering everything from supplier data to research and development – to help them adapt to a new sustainable future when it comes to premium materials.

Such open-source platforms would democratise access to information and act as one-stop shops of design and materials thinking to help designers explore the sustainable production landscape.

Indeed, the seeds of this collaborative future are already visible. Easy-to-follow guides to support material choices, such as Plastic Free, are proving useful tools. Powered by blockchain, this materials platform is free to use and shares insights for suppliers and product designers, helping to make sustainability accessible to the creative industry.

Meanwhile, the Playbook for Climate Action, developed by companies that have signed up to the Fashion Industry Charter, is aiding the fashion industry in its decarbonising journey by providing a road map to sustainability. In Australia, design studio Fiona Lynch is taking a similar approach with Future Archive, an open resource for environmentally responsible working, covering design, new bio-materials and exhibitions.

As material innovation accelerates at full speed, future-facing brands will begin building and collaborating on their own open-source platforms to help educate people throughout the value chain, simplifying the process of finding sustainable alternatives.

What makes this future even more likely is that, as well as adding rigour to practices through cross-pollination of ideas, collaboration will also have a positive financial impact when it comes to identifying sustainable material alternatives that are commercially viable. ‘It’s cost-efficient for companies to share data, to share resources and to collaborate,’ says 3.1 Phillip Lim’s Wen Zhou. ‘That way you reduce the cost of innovation. We’re only just seeing the beginnings of this shift – and the places it could go are exciting.’

CONCLUSION

The rise of conscious design will fundamentally transform our society, bringing us to a future when long-term thinking is applied to the creation of all products, and circularity, transparency, regeneration and collaboration are fully embraced.

But to facilitate this future a new material world is first required. Fortunately – as we've explored in this report – a generation of future-facing brands, designers and innovators are fast building this world and delivering a materials revolution. Over the next five years:

- Our renewed appreciation for nature will fuel a resurgence in natural materials such as linen, elevated by their timelessness and superpower properties, which will become the ultimate luxury
- New value and prestige will be attributed to discarded materials transformed into not just something new, but something better
- Positive-impact materials will be increasingly capable of restoring biodiversity and regenerating the environment
- A new wave of experimental innovations will harness previously untapped resources and push the possibilities of what materials can do

The sooner businesses begin to harness these possibilities, the better – with brands like Volvo Cars already doing so. Instead of leather interior options, Volvo Cars will offer its customers alternative choices such as a new Volvo-created material made from bio-based and recycled sources, as well as different types of premium textiles, including textiles made from recycled PET bottles, bio-attributed materials from sustainable forests in Sweden and Finland, and corks recycled from the wine industry.





“We have a vision of where we need to go in the future, with the first step to ensure we harness sustainable, natural, and recycled materials. The next challenge is to change what we do with these materials, whether that’s making car parts that last for ever, re-enter the circular economy or go back into the earth.”

ROBIN PAGE, SENIOR VICE PRESIDENT DESIGN, VOLVO

As well as harnessing these materials, greater consideration must be given to the eco-systems behind the production and manufacture of materials and products. ‘We have a vision of where we need to go in the future, with the first step to ensure we harness sustainable, natural and recycled materials,’ said Robin Page, head of design at Volvo Cars. ‘The next challenge is to change what we do with these materials, whether that’s making car parts that last for ever, re-enter the circular economy or go back into the earth.’ Applying conscious design to this challenge will lead to:

- Shifts away from linear consumption models towards closed-loop systems, as businesses embed circular principles in their operations
- A new movement towards embracing regenerative practices when sourcing raw materials
- Technologies being harnessed to deliver total transparency, enabling people to monitor materials, their scarcity and their impact in real time
- The creation of collaborative, open-source platforms providing design insight

For The Future Laboratory’s Martin Raymond, the rise of conscious design represents a watershed moment. ‘Society has experienced a reset, and now we have an opportunity to embrace a new extra-ordinary, instead of a new normal,’ he says. ‘We need to act quickly, disrupt differently and recreate awesomely to do so.’ Conscious design is showing a way forward and could transform the world in the process.

V O L V O

