

Creativity as a driver for green transition

White Paper

This white paper offers valuable insights into the crucial role that creativity and innovation play in advancing sustainability. It targets the need for a profound reevaluation at an individual and systemic level to create businesses fit for the future.



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Version 1.0 – September 2023

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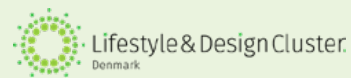
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Foreword

As we enter a new era of sustainable development, creativity plays a critical role in driving the green transition and sparking innovation and development. The world is still facing unprecedented environmental challenges, from climate change to biodiversity loss, and we need innovative solutions to address these issues.

Creativity has the power to spark conversations and drive change, and in this white paper we examine the way in which creative thinking can inspire new approaches to sustainable development, from green technologies to sustainable business models. The question is though – how can creativity empower consumers, enterprises, organizations, and societies to act on environmental issues?

Danish companies and organizations have a long tradition of using creativity to solve complex problems, whether it be in the home or on a societal scale. As a country, we encourage and enable creativity, innovation and collaboration across sectors and industries based on the unique Danish creative DNA, which is rooted in a tradition of flat hierarchies, high trust, and encouragement to question established processes and contribute with new and innovative ideas.

Denmark is among the global leaders when it comes to sustainable solutions. By employing creative thinking and methods, we can drive the green transition forward to the benefit of citizens' everyday life and businesses' competitive advantage. Creativity opens new solutions and products, generating an energy that can be channeled into the green transition of our

society. The creative approach to problem-solving can benefit the entire planet as it moves towards a healthier, environmentally friendly, and sustainable global community.

As Minister for Business, I believe that creativity is not only a key driver for the green transition, but also a vital tool for businesses looking to stay competitive in a rapidly changing world. By embracing creativity, businesses can unlock new opportunities for growth and innovation, while also contributing to a more sustainable future.

I encourage all readers to explore the ideas presented in this white paper, and to join us in harnessing the power of creativity to drive the green transition. Together, we can build a more sustainable and prosperous future for all.



Morten Bødskov
Danish Minister for Industry, Business and Financial Affairs

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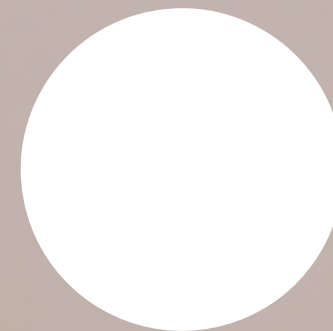
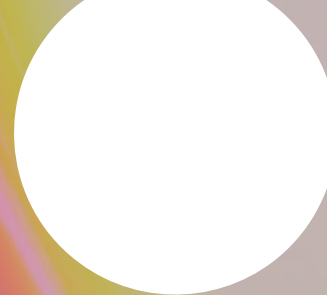
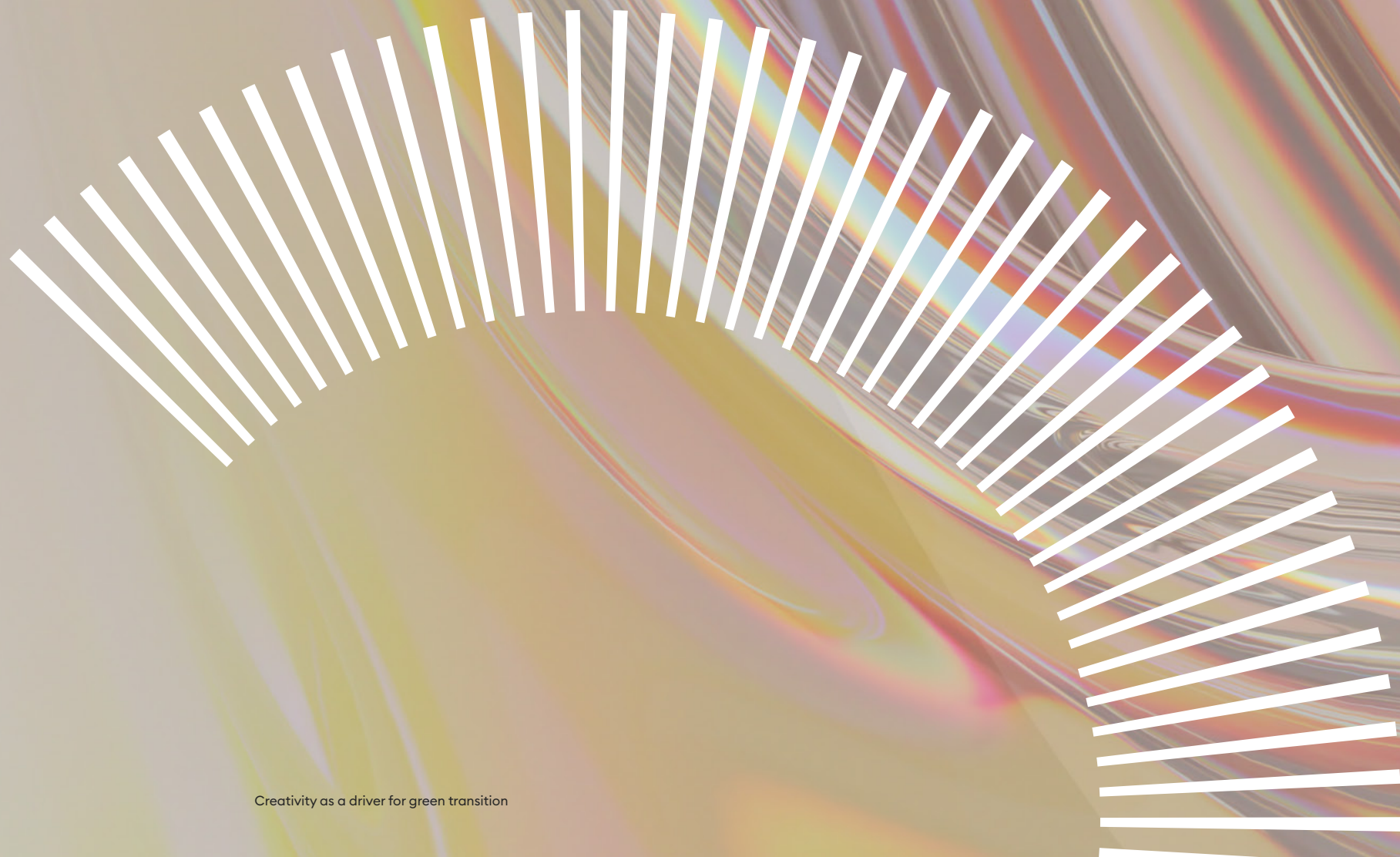
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Opening words



Creativity and innovation hold the key to our sustainable future

Introducing the United Nations Global Compact, a network established to help businesses integrate sustainability in their operations, work collaboratively and foster collective actions towards the UN Sustainable Development Goals.



Sara Krüger Falk
Executive Director,
UN Global Compact Network
Denmark

In the light of the pressing global challenges we confront today, it is imperative that we adopt a different approach to thinking and taking action. We must harness the power of creativity and innovation to cultivate new methods of sustainable production, service delivery, and living. To do this, we need to fundamentally re-evaluate our practices and prepare ourselves to embrace novel technologies and business models that can propel us toward a more sustainable future.

Playing a vital role

As the world's largest corporate sustainability initiative and a prominent platform for businesses committed to advancing sustainability through collaboration, innovation, and leadership, the United Nations Global Compact recognises the urgent and transformative actions required to tackle climate change, biodiversity loss, human rights and other sustainability issues. The business community plays a vital role in driving this transition.

The climate crisis demands bold measures to reduce greenhouse gas emissions and transition to a low-carbon economy. Incremental changes alone are insufficient; we must embrace transformative change, reimagine societies and economies, and strive for true sustainability. This necessitates cross-sectoral and cross-border collaboration, as well as a willingness to experiment, learn from both successes and failures, and inspire one another. We must remain receptive to new ideas and approaches while challenging the status quo.

“ We must embrace transformative change, reimagine societies and economies, and strive for true sustainability... We must remain receptive to new ideas and approaches while challenging the status quo.

The UN Global Compact

The United Nations Global Compact is dedicated to helping businesses integrate sustainability into their strategies and operations. We strive to convene and facilitate collaborations among businesses, civil society, governments, and other stakeholders, to foster collective action towards achieving The Ten Principles and the Sustainable Development Goals. Through our endeavours, we have witnessed first-hand the transformative power of collaboration and innovation, recognising their potential to shape a sustainable future.

This white paper offers valuable insights into the crucial role that creativity and innovation play in advancing sustainability. Its emphasis on the need for a profound re-evaluation of our practices, from individual consumers and organisations to society as a whole, resonates with our conviction that the business community holds a pivotal position in the transition towards a more sustainable future.

Working together

Collaboration and co-creation are the two fundamental elements in this situation. It is imperative that we acknowledge the complexity of the environmental and sustainability challenges we face, and realise that they cannot be solved by any single organisation or sector alone.

Only by embracing creativity, innovation, and a willingness to rethink our methods of production and service can we hope to achieve our objectives for a green transition.

The time for action is now.

Towards a new way of thinking

As a professor in Biological Oceanography at the University of Copenhagen and leader of the Sustainability Science Centre, Katherine Richardson has deep insights on climate and biodiversity. In our interview, she argues that creativity has a key role to play in transforming how we shape a greener future.



Katherine Richardson
Professor in Biological Oceanography
Globe Institute & Leader Sustainability Science Centre

How do you feel about the current situation?

Despite all of our focus on climate and biodiversity, things are going in the wrong direction. It is because we have been focused on solutions, somehow thinking that we are above the system, and that we can just find a quick fix and continue.

What can we do to make a difference?

The trick is to recognise that we are a part of the earth's ecosystem. We know that if you take a little organism, a little plant or bacteria, and put it in a bottle, and leave it in a laboratory, it will at first grow really slowly, just like humans did. And then it will grow exponentially, just like humans did. The next stage is that it will start running out of resources, because there is a limited amount of them. It is a zero-sum game. As a result, there will be a slowing of growth and in the end, it will die out, poisoned by its own waste products.

This story is playing out around us now. In it, we can see CO₂ as our waste product. Many of us won't be able to survive if the earth becomes four, five or six degrees warmer – and this scenario doesn't even take into account PFAs and other kinds of chemical pollution we have.

Are there any templates or systems we can follow?

We have to learn to manage our relationship with the world around us. Our ancestors did that by using local resources and making rules about how to work with nature, but now that we have a global market, we don't see that poor child in Bangladesh that makes our cheap clothes, we don't see the biodiversity in South America or in South East Asia that gets destroyed because we want palm oil or soya to feed our pigs. Getting back in touch with the ecosystem we are a part of rather than seeking solutions is what I think is important.

“ We have to learn to manage our relationship with the world around us...Getting back in touch with the ecosystem we are a part of rather than seeking solutions is what I think is important

How can creativity help?

Creativity is important because we don't all respond to economic language or natural science language. This transition or transformation is not going to happen unless everyone understands why and contributes to it.

How have you worked with creative approaches?

I am a natural scientist through and through, and yet I include literary people and artists in my research projects. I had a really interesting experience on a project working with ice cores that I was analysing to see how nature and climate are changing.

The artist involved in the project said she wanted a core too. While the natural scientists in the group questioned the value of the investment, underlining how much it costs to give an artist something like that away, I argued for her.

Through her resulting art exhibition, she has probably introduced more people to the idea that the earth maintains an archive and that we are only just learning to read the archive in the settlement of the ocean than I will with all my scientific papers.

We have to find multiple ways to tell the story.

The Consumer

How businesses help consumers make a smarter, more sustainable choice that offers a win-win for both parties.

Nudging sustainable behaviour

Making it easier for consumers to take climate-positive decisions

Design for reuse

Developing products and services that go beyond a linear lifespan

Nudging sustainable behaviour

Charlie Stjerneklar
CEO, Kreativitet & Kommunikation



Photo by: Caroline Twille

Shifting consumer behaviour towards more sustainable choices

The creative industry plays a crucial role in driving behavioural change through creativity. The solutions lie somewhere in between what the consumers want, what the world needs, and what brands uniquely offer.

I remember a quote from a brilliant agency leader, Christina Blak, saying: “We’ve never had more need for storytelling and creativity than we do now. Common language, knowledge and a licence to act are bridges that can take us from A to B.” Today, we experience a move from building strong brands and selling good products to building trust by formulating and activating corporate responsibility and the role of corporations in society. Creativity is the ability to see possibilities. To use the influence of the creative industry to raise knowledge and change consumer behaviour within the aspects of E, S, and G.

Developing new ideas

Within the creative industry, we have been the frontrunners of new concepts and ideas over the last 50-100 years that help and shape the future. We have an obligation to push our clients and our consumers to a more sustainable future. Together, we must understand and accept the complexity of the area, discuss the legislation and its consequences, prevent greenwashing, and learn from good and bad examples of sustainable communication.

Internationally, the Danish creative industries are on the top-shelf, continuously awarded for their creative excellence and effective marketing ideas. Just as an example, last year Danish advertising agency &Co won Campaign’s much-coveted ‘Global Agency of the Year’ award. With creative, strategic, and effective solutions, we can and do shift consumer attitudes, behaviours, preferences, and market shares. We understand and

translate consumer insights – those little secrets hidden beneath the surface that explain the underlying behaviours, motivations, barriers, and emotions of the consumer. The ability to build insight-led ad campaigns around data like this is key to creating something that consumers actually want to engage with.

Marketing that matters

We see campaigns, games and marketing efforts that inform, promote and influence behaviour based on renting, sharing, borrowing, recycling and upcycling. The IKEA ‘CIRKULÄR’ campaign is just one example that originated from a Danish agency. By making a creative idea actionable, IKEA bought used furniture from its customers, refurbished them, and sold them at a reduced price – and launched on Black Friday.

Coors Light, a beer brand with the payoff ‘Made to Chill’, went beyond beer to reach communities most affected by rising temperatures when they introduced ‘Chillboards’. These ads were a creative out-of-home campaign idea developed by a Danish agency to lower temperatures in overheated U.S. neighbourhoods and make a meaningful difference to those disproportionately affected by climate change. They were something only a few could see, but everyone could feel.

Creativity is a driver for behavioural change. While the creative toolbox we use hasn’t changed much, it now is being put into action in new ways and for new purposes.

We can change the world with creativity – if we want.



Photo: Too Good To Go

Shifting preferences around food waste

Too Good To Go's mobile app helps businesses avoid food waste and allows consumers to pick up a bargain.

Contributor
- Too Good To Go

Food waste is a major environmental issue. We waste 2.5 billion tons of food annually, while 828 million people go hungry every day. Food waste is responsible for more greenhouse gas emissions than the entire airline industry. On top of that, food waste costs us \$1.2 trillion every year.

Certified B Corporation Too Good To Go fights food waste in 17 markets across Europe and North America. Its app connects users with unsold food from a variety of business partners, including supermarkets, shops, restaurants, and manufacturers, among others. Too Good To Go enables them to sell their excess food, which would have otherwise gone to waste, while consumers can save money by purchasing it at a discounted price.

Users get a 'Surprise Bag' or 'Mystery Parcel' filled with surplus food put together at random, which is posted on the app's Marketplace ready for customers to pick it up or have it delivered. This bag repositions the food, which otherwise would have been wasted, as a special treat, shifting consumer preferences in the process.

The mission of the company is to inspire and empower everyone to fight food waste together. In addition to the digital marketplace, To Good To Go also initiates projects and builds partnerships with businesses, households, schools and governments to create real change in the way we legislate against, educate about, and practice reduction in food waste.

Using a mobile game to grow a forest

SYBO's hit mobile game Subway Surfers includes a virtual event, Play 2 Plant, that plants a tree for everyone who participates.

Contributor
- SYBO

In collaboration with
- Ecologi

SYBO's flagship game, Subway Surfers, was the most downloaded game of 2022, with over four billion lifetime downloads since its 2012 release. SYBO harnessed its global player base of over 150 million monthly active users for an in-game event, Play 2 Plant, where players contributed to planting trees in real life by playing with their favourite Subway Surfer.

Play 2 Plant challenges are held in grayscale, virtual cities, which transform to full colour animation as players progress through the game. They feature as a component of Subway Surfers' popular World Tour series, which takes players in-game around the globe to a new city every three weeks.

To develop the initiative, SYBO collaborated with Ecologi, a leading climate organisation that allows businesses to fund climate projects across the globe and quantify their impact. SYBO is also a member of the Playing for the Planet alliance, which is committed to using games as platforms to drive awareness and mobilise action in the fight against climate change

A virtual "Subway Forest" on Ecologi's digital platform showcases the total impact of the campaign, highlighting tree species, quantities, and real-life reforestation projects the players contributed to, reaching from Madagascar to Kenya. To date, Play 2 Plant has planted 518,135 trees and counting, all while entertaining their players.

Photo: SYBO





Photo: Ofelia Bench - Søren Solkær; other photos - Kristian Vestergaard

Turning heads and starting conversations

TV 2 Denmark put climate change on the agenda through an untraditional and engaging campaign.

Contributor

- TV2

In collaboration with

- TV2 CREATIVE

Many people have become desensitised to climate change reports and images of melting icebergs. As one of the largest public service broadcasters in Denmark, TV 2 felt an obligation to find a new way to engage Danes in the conversation.

They turned to a Danish design icon: the Copenhagen bench. To match the UN Climate Report's estimated sea level rise for the year 2100, they created 15 benches from upcycled metal and recycled wood, all elevated by 85 cm.

A copper plaque on front of the bench reads:

Flooding will become part of our everyday life unless we start doing something about our climate. According to the latest UN Climate Report, sea levels are expected to rise up to 1 metre before 2100 if global warming continues.

Placed at central locations in Denmark's largest cities, the campaign went viral in national and international media and achieved a reach of 370 million.

The goal was to create an untraditional campaign that would make the Danes talk about climate change and the fact that we are all responsible for changing course. To change consumer behaviour, they first needed to raise awareness of the situation and re-engage the public in the climate change narrative.

Research shows/states that the campaign made 1 out of 3 Danes talk about climate change.

Even more importantly, it made 8 out of 10 Danes agree that we all have a responsibility in changing course, something that is critical in moving towards a more sustainable future.



Photo credit: Astrid Maria Rasmussen, Copenhagen Media Center

Design for reuse



Betina Simonsen
CEO
Lifestyle Design Cluster

Designing products that can have a new purpose in the future

Overproduction contributes to the depletion of our planet's resources. Many products are produced in excess and used very few times, leading to a surplus of goods that are eventually discarded. By designing products for reuse, we can reduce the need for overproduction and contribute to a more responsible use of resources.

Designing for reuse plays a significant role in a sustainable transformation. When done correctly, it considers various factors, such as the product's functionality, aesthetics, and durability. This approach also requires designers to shift their focus from the traditional “take, make, waste” model to one emphasising longevity and reusability.

Turning back the clock

We know that overproduction and waste are significant obstacles to true sustainability, and disposable design is a relatively new term in the history of lifestyle products. Historically, longevity and reuse were the norm. We can bring back these values by revitalising historical knowledge and combining it with new business models and modern innovation.

At the Lifestyle & Design Cluster, we strive to combine these elements and to build a bridge between the lifestyle and design industry and our knowledge institutions. We know the design industry is standing on the threshold of a future where durability, reparability, and safe and recycled materials will become the typical legal requirements.

Creating relevant designs

Designing for reuse is an excellent way to embed products with more meaning and values that customers

want to pay more for. To create relevant designs for reuse, designers must take a user-centric approach, listening and investing in research. We are facilitating this research with the Danish design schools. Recent projects include examining the mindset of future customers and the habits within new resale business models, along with web-based models for product design and mock-ups. A user-centric approach can lead to increased user satisfaction and better product performance.

The industry's role in promoting design for reuse goes beyond creating products that can be used multiple times. It must also consider the end of a product's lifecycle and how it can be repurposed or recycled. Companies must create products that can be disassembled easily and components that can be reused or recycled. By doing this, they can help to reduce the amount of waste that is generated and conserve resources at the same time.

New solutions

Denmark is internationally known for its traditions within furniture and design, with durable and timeless pieces that maintain value and are kept for generations. This tradition is rubbing off on other design-focused businesses. Many start-ups enter the markets with solutions intended to combat the single-use and overproduction problem, with designs for reuse in their DNA.



Photo: AllMatters

Making reusable the standard

AllMatters opened in 2012 with an aim to grow the category of reusable period products, focused on making a sustainable difference through small lifestyle changes.

Contributor

- AllMatters

In collaboration with

- Photographer Nikolaj Møller

Disposable menstrual products, along with their packaging and wrapping, account for more than 200,000 metric tonnes of waste annually. Pads can contain up to 90% plastic, and generally end up in landfills; globally, over 12 billion disposable menstrual products are used per year.

AllMatters offers an alternative. They began by selling a simple and sustainable reusable menstrual cup in 2012, made accessible through a democratic price point and wide distribution. The product has been a great success, selling more than two million items, and is stocked on the shelves of over 7,000 shops worldwide. It's an example of design that meets the future, reducing waste and emphasising longevity and reusability.

The experience developing and selling the cup showed the AllMatters team that small changes can have a significant impact. They added reusable, waterless personal care products to the line-up in 2021, along with reusable period underwear in 2022. Their belief is that by making sustainability accessible and effortless, they show that changing everyday habits can make a difference. The company also became a certified B Corp in 2022.

In addition to challenging the narrative around reusable personal care products, the company runs TABOO: Global Periods, an ongoing project with photographer Nikolaj Møller. It aims to bring the overlooked subject of periods to people's attention and foster a better understanding about it and the obstacles it poses. Through the project, they raise awareness about cultural practices and taboos around the world. The stories are published on the project website tabooglobalperiods.com

Making sustainable options more desirable

Why buy a single-use personal care product when you can buy a reusable and sustainable option, asks LastObject.

Contributor

- LastObject

In collaboration with

- FootPrint Fir
- Vækstfonden

In a world where single-use items are ubiquitous and often end up polluting the environment, LastObject is taking a stand. Founded in 2018 by a team of Danish designers, LastObject's range of products replace everyday disposables with zero waste alternatives to cotton swabs, reusable fabric rounds in place of cotton pads, organic cotton tissues and washable, reusable sanitary pads.

The goal is to make products that are at least ten times better for the environment and to make it easier to switch to a sustainable lifestyle. They contribute to a 'design for the future' movement, emphasising reusability over waste.

Together with their community, they have to date helped eliminate around 3.3 billion single-use items and 4.6 million pounds of waste, as well as preventing more than 3,000 tons of carbon from entering the atmosphere.

LastObject is committed to making a positive impact on the environment. They carefully select materials of the highest quality and ensure their products are durable, sustainable, and safe for humans and the planet. Cases are made from recycled Ocean Bound Plastic that has been removed from nature, and cotton rounds are home-compostable and made from cotton and wood fibres.



Photo: Philip Flindt

Giving a new life to used textiles

By reusing textiles otherwise destined for landfill or burning, Textilia's Upcy programme creates new clothes from old, motivated by a simple but visionary thought: we have to clean up after ourselves.

Contributor

- Textilia upcy

In collaboration with

- Textilia

When Danish laundry Textilia found itself throwing away an average of 1 tonne of textiles every day, textiles that for one reason or another had been discarded by their customers, it knew it had to act. It launched an upcycling program, Textilia Upcy, aiming to recycle 100% of those textiles by 2025, creating a circular loop that counters the environmentally harmful use-and-throw-away culture.

Through Textilia Upcy, a jacket is made from an apron from the restaurant industry and a waiter's shirt from a former sheet from a hotel. A discarded tablecloth becomes a chef's shirt and a discarded hospital quilt becomes a jacket. Each piece of clothing carries a unique story from its past life.

The programme relies on support from hotels, municipalities and the industry to be successful. From 2025, all Danish companies and public institutions will have to submit accounts for their CO₂ consumption – and products made from 100% recycled textiles can help.

There is a large potential in recycling discarded textiles, but it is not without challenges. The range is determined by which materials are available, and not all textiles are suitable to reuse. In these cases, they are converted into yarn that can be woven into new goods, or downcycled into table and acoustic panels.



Photo: upcy



The Organisation

Using sustainability as an active strategy to unlock business potential.

Circular business models

Thinking beyond the linear to extend product lifespans and reduce waste

Creative business processes

The power of innovation to shape leadership, transform sectors and enact change

Unlocking desire

Creative thinking as a tool to unlock a need for climate-positive solutions



Circular business models



Sara Lindeblad Wingstrand, PhD
Circular Economy Expert
Boston Consulting Group

Photo: BCG

Rethinking business for a better future

If we want to tackle the climate and biodiversity crisis while creating an economic system that works, we need to do business in a fundamentally different way. We need business models that decouple economic activity from the use of finite materials: we need circular business models.

In Denmark, four in ten items of clothing are put in the wardrobe and never worn. On average, a drill is used for 12-15 minutes in its entire lifetime. Globally, one in three pieces of plastic packaging ends up in the environment. These are just three examples of how poorly we use resources and how wasteful our economy has become.

Not only is this situation not viable from an environmental perspective, but in the long term, it won't be economically viable either. Recycling alone is not the solution. We need to look at the broader solution space.

Introducing circular business models

Circular business models eliminate waste, keep products and material in use, and regenerate natural systems. Such models include product life extension, take back, product-as-a-service, sharing platforms, recycling of product materials, or models that in other ways enable products to be reused, shared, rented, refurbished, repaired or product materials to be recycled.

A famous example is a 'light as a service' model where instead of selling light fixtures, a business can sell light itself. In this model, the business retains ownership of the light fixtures themselves, they do the maintenance and ensure optimal lighting of the venue, and customers pay a monthly fee for having their space well lit.

This changes everything. Profits are no longer tied to pushing as many light fixtures on to the market as possible. Profits are now dependent on ensuring a beautifully lit venue while keeping costs down. Here, predictability and durability of the fixtures are key – not the quantity of fixtures sold. Ownership also encourages reuse, repairability and recyclability.

Boosting business

Circular business models, if designed well, come with significant business benefits both in terms of cost reductions and value creation. These benefits include everything from cost savings on raw materials to new business opportunities and better user experiences. From improved customer data and loyalty to resilience in supply chains, to boosting local economies.

For example, a subscription service for modular headphones is able to form close relationships with its users through the ongoing subscription engagement. At the same time, 85% of components in the headphones can be reused which improves the resilience of their supply chain, among other benefits.

Better for the environment

Circular business models must form an integral part of the solution to environmental crisis like the climate and biodiversity crisis by reducing our need for raw materials and land at the beginning of a product's life and at the same time, reducing emissions and waste creation at the end of its life.

For example, in the buildings and construction industry, emissions from construction materials could see a 38% reduction if circular business models (incl., waste elimination, shared buildings and the ability to reuse and recycle constructions and construction materials) are leveraged.

Catalysing the shift towards these new business models is a significant undertaking and if they are to succeed, it requires bold business and investor moves, radical innovation and ambitious policies that level the playing field compared to the current take-make-waste models.



Photo: Skagerak

Giving furniture a second life

Skagerak's Reclassic initiative uses a circular business model to prolong its products' lifetime.

Contributor

– Skagerak by Fritz Hansen

According to the Environmental Protection Agency, in the US alone more than 12 million tonnes of furniture is thrown into landfill every year, an increase of 450% since 1960. International design company and certified B Corporation Skagerak, established in Denmark in 1976, asks the question: what if furniture had a second life instead?

Skagerak Reclassic is a buy-back system allowing customers to return their used Skagerak furniture when they no longer need it. The furniture is carefully restored and put up for sale for customers who appreciate patinated pieces that come with a history and a lower carbon footprint compared to new products.

Reclassic pieces come with their own history from being used indoors or outdoors in private homes or for photoshoots, events or exhibitions. All the pieces are carefully restored by the Skagerak team before being put up for sale, ready for a new chapter. The Reclassic website makes it easy to buy pre-loved Skagerak furniture, ensuring that it stays in circulation and enjoys a longer life.

The company aims to inspire its customers to see themselves as users rather than consumers of furniture, and in doing so, fulfils its promise to design furniture that lasts for generations.



Photo: Anno Studio

Accelerating the circular economy

By connecting industries with New Waste materials and companies who want it, THE UPCYCL creates circular possibilities.

Contributor

– THE UPCYCL

Annually, over 1.1 million tons of waste are generated from industrial and manufacturing companies in Denmark. The portion of the waste consisting of uniform and reliable materials is referred to as New Waste. Today, many tons of New Waste materials end up in landfills every year without ever being used again.

THE UPCYCL is a community where industrial companies with New Waste materials can be matched with companies that need them. By doing so, they reduce the amount of wasted materials and the consumption of virgin materials.

All New Waste materials come in continuous flows and large volumes and are standardised, ensuring that, when matched, the stream of New Waste Materials keeps flowing. This allows companies to rely on a reliable circular supply chain or consider their industrial waste materials as a source of circular revenue.

An example is the FM 630 stool, designed by the architects Friis & Moltke and relaunched by Danish furniture manufacturer, Anno Studio. The legs of the stool are made from leftover cut-offs from the industrial production of sack trucks. Steel tubes for sack trucks are supplied in fixed lengths, and waste is unavoidable. Without compromising Friis & Moltke's classic design, Anno Studio utilises the leftover steel tubes for the stool's legs.

High-end design objects from waste

A Circular Design Studio has developed a way of working with recycled plastic to create handcrafted design objects.

Contributor

– A Circular Design Studio

Traditionally, plastic production is a closed process, based on a large, expensive and complex machinery, where products are made using pre-designed moulds and virgin plastic. It is not a satisfactory process for numerous reasons: it is very expensive to build a factory, moulds are extremely inflexible, and expensive, and it promotes a mass production culture that should not be part of a sustainable future.

A Circular Design Studio has developed a new way of working with 100% recycled plastic that offers a better solution. Their open process production allows them to mould larger sheets of 100% recycled plastic, manipulate aesthetics and create a base material that has a look, feel and property similar to stone.

The material can be used almost exactly as if it was wood, which allows them to use traditional carpentry joints and concepts within production, taking the recycled material from waste to high-end design product.

Using it, they have created seven different, handcrafted design objects, made out of 100% recycled plastic. The objects can all go into a standard recycling system at the end of their lives, anywhere in the world. All products are sold with a free swap option, allowing customers to swap products for free with other products of the same value; the company also operates a buy-back scheme.



Photo: Kasper Holm Jensen



© Cirkelbroen (2015) - Olafur Eliasson,
Photographer: Sephica Berghelm

Creative business processes



Silviya Svejnova

Professor of Leadership and Innovation,
Department of Organization
Copenhagen Business School

Reimagining creative processes and business models

Organisations in the creative industries can drive the green transition through sustainable creativity by reimagining their creative processes and business models.

Sustainable creativity is the commitment to people and planet in the design, sourcing, production, consumption, and the upcycling of creative outputs. This commitment is manifested in reimagining an organisation's creative process and business model.

Sustainable creativity is essential not only at the design stage, at which the creative outputs' environmental footprint and lifecycle are largely decided, but also throughout the entire value chain. It contributes to the green transition overall through three key creative business processes: transformative innovation, creative leadership, and responsible change.

1. Transformative innovation

A growing number of innovations are directed to transform creative processes, business models, and parts of value chains to diminish resource waste, extend the lifecycle of the materials and products, and minimise the organisations' ecological impact.

New technologies keep appearing in resource-intensive sectors, such as architecture, fashion, or furniture, expanding their capacity for transformation. These technologies involve, for example, creating circular materials from upcycled waste. Infused with aesthetic value, these upcycled materials can afford various cycles of disassembly, recycling, and reuse.

2. Creative leadership

To realise the transformative potential of these innovations, organisations need to start to embed them in their creative leadership processes, in other

words in their ongoing efforts to direct, facilitate, and integrate diverse contributions into creative outputs. These contributions may come from, among other parties, designers, suppliers, producers, distributors, competitors, and consumers, and may also require collaboration and an alignment of principles and practices. That, in turn, can create many opportunities within and across value chains. The industrial trash or waste from a large organisation can turn into a treasure with the use of the upcycling creativity of a start-up, enhancing sustainability for both.

3. Responsible change

Organisations need to connect the variety of innovations and collaborations into an ever-expanding pattern of responsible change in two key ways. The first is to embed shared principles, practices, and knowledge in processes and behaviour within the company, ensuring that opportunities and learnings about sustainable creativity are shared.

The second is in storytelling around products and initiatives, from what a product looks like to what it is called and how it is marketed. These tools increase awareness of the ecological footprint of organisations and consumers, and provoke further thought around responsible action.

By using both of these creative business processes approaches, organisations can enhance their sustainable creativity and more effectively support shifts in mindsets and actions, paving the way to sustainable futures.

Transforming film production

Nordisk Film Shortcut's ground-breaking LED stage greatly reduces the carbon footprint of any production.

Contributor

– Nordisk Film Shortcut

The global entertainment industry has witnessed a growing demand for sustainable and eco-friendly practices to reduce its environmental impact. Traditional film production involves extensive travel, on-location shoots, and large-scale set constructions, leading to significant carbon emissions.

Shortcut LED stage is a 100% solar powered 360° LED stage in which you can film photorealistic locations from all over the world, greatly reducing the carbon footprint of any production.

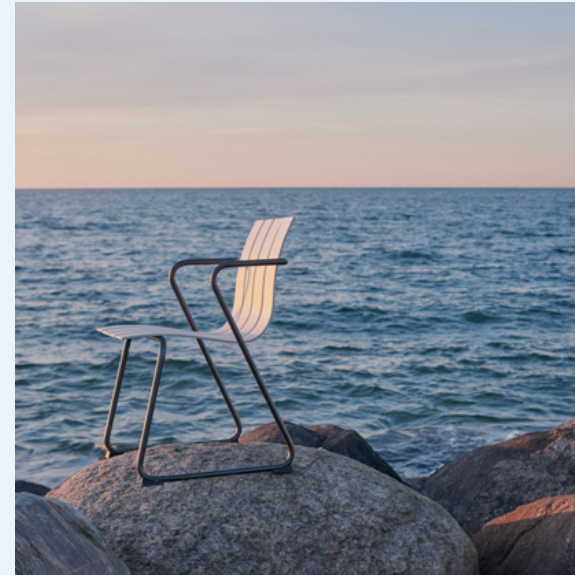
As the Shortcut Stage is 100% powered by solar power, it actively participates in the shift to reduce the carbon footprint, contributing to a greener and more sustainable entertainment industry.

The stage proved useful for a recent project promoting Denmark. For a line of commercials, VisitDenmark needed three different locations, two locations from Denmark and one from Southern Europe. Nordisk Film shot all locations on their 360° LED stage, merging real physical elements and digital content. This method reduced carbon footprint by approximately 85% mainly because the entire production crew only needed to travel to the local studio.



Photo: Nordisk Film / VisitDenmark

Photo: Mater



Using innovation to make new materials

Mater has developed a unique patented material that enables them to make furniture out of waste materials.

Contributor

– Mater

In collaboration with

- Grohe
- TetraPak
- BKI Foods
- Arla

Founded in Copenhagen in 2006, Mater is a pioneering green-tech design brand with sustainability and circularity at its core. After years of research and testing, they invented Matek®, a uniquely patented material that enables them to make furniture from waste materials by combining fibre with a binder.

These fibres could be coffee bean shells extracted during the roasting process, or sawdust from wood production, combined with a binder material made from plastic waste or a plastic-based alternative. The mix of materials results in a unique compound suitable for press moulding – a well-known technique in the furniture industry.

The technology behind Matek® enables carbon capture in Mater's furniture by recycling waste into timeless classics using existing resources instead of virgin materials. Matek® is produced using post-consumer waste or post-industrial waste available through successful collaborations with large-scale corporations. The collaboration helps process their waste streams and make them suitable for furniture production – offering a win-win for all parties.

Since Matek® can be processed again and again, the furniture can be taken back at the end of its life to be recycled into new furniture. It is an efficient way to recycle waste and reduce CO₂ emissions overall.



Photo: Anna Sekur

Changing the fashion industry through circular thinking

OUR SHIFT is an activist fashion brand based in Copenhagen challenging traditional fashion processes with upcycling techniques. The result is tailored garments and responsibly made clothes with activist messaging.

Contributor

- OUR SHIFT

In collaboration with

- Roskilde Festival

Milan Flicek and Barbora Sura founded OUR SHIFT in 2022 with a vision to shift the paradigm of fashion and bring people on a journey towards a more optimistic future. They use innovative design methods, materials, and communication to create upcycled clothes collections from fabrics and garments that are otherwise destined to go to waste.

The brand upcycles deadstock fabrics and clothes and searches for unusual material sources in its creative and transformative fashion approach. They collaborated with Roskilde Festival in 2022, sourcing fabric from abandoned tents. With it, they created a fully upcycled fashion collection, reducing the quantity of wasted textiles at the festival and contributing to their larger aim of creating awareness and acting on various environmental issues.

To work with abandoned garments, tents or fabrics, they use a novel 'fire piping' technique which can upcycle finished garments and cut-offs creating 3D, organic, and unique shapes. When applied directly on deadstock garments, the original technique creates new seasonal colours and prints and prevents the garments and fabric from being discarded.

The clothes OUR SHIFT designs and produces are made in an innovative manner with provocative and fun yet sophisticated aesthetics. The company is focused on shifting the industry as well as individual mindsets and processes.



Unlocking desire

Julie Hjort
Director of Sustainable Transitions
DDC - Danish Design Center



Portrait photo: Oliver Hertitschek

Making the sustainable choice irresistible

Human behaviour is a significant factor and challenge in the sustainable and circular transition. Our imagination, empathy, and aesthetics must play a vital role in mobilising people, businesses, and organisations to truly fuel the lifestyle transformation.

Try to look back and consider: what has inspired you to make some of your life's most significant lifestyle changes? I bet that many of us make crucial decisions based on much more than rational incentives such as price and practical considerations. While these are important and do, of course, weigh in, the irrationality of human behaviour is a significant influence on the climate crisis, and is often underexposed in the general sustainability debate.

73 percent of Danes are aware of sustainability in their purchasing decisions. 62 percent say that they often talk to friends and family about climate problems (Sustainability Index 2022). At the same time, Danes have an outsized climate footprint per capita. If everyone had the same behaviour and consumption as the Danes, it would require 4.5 Planet Earths to have enough resources for everyone.

If we are to fuel this lifestyle transformation, it is not sufficient to provide more data on the necessity for change – we have an abundance of that. The products and services of tomorrow must trigger our individual and collective needs and unspoken dreams.

The creative industries of design, architecture, culture, arts, and the humanities hold a massive potential in this transformation due to three crucial factors that thrive in their industries.

1. Imagination

Science has told us what to move away from. Our imagination must tell us where to go next. We must dare to imagine a living, sustainable, and circular

society where people and the planet thrive. This means creating tangible and visual images of a shared future that appeals to people across all societal layers. Here, all corners of the creative industries have a role to play.

2. Empathy

A key ingredient in unlocking new circular consumer and lifestyle patterns is the ability to deeply empathise with our diverse user groups' needs, fears, hopes, and ideas to build solutions that genuinely care for people. Designers and anthropologists have developed well-tested methods and approaches to place humans and the planetary boundaries at the centre of our new solutions something that is critical in this transformation.

3. Aesthetics

Adjusting to a new circular and sustainable future pushes consumers to accept and adopt new materials, solutions and aesthetics. In this transition, designers and architects will play an essential role with their abilities to make the sustainable choice a beautiful and desirable one. Let's not downplay the power of beauty in decision-making and behaviour.

The power of imagination, empathy, and aesthetics is vital not just as innovative modes of expression within the creative industries but across society as a whole. Businesses, organisations, and the creative industries must continue to reach out to each other and collaborate as they find and develop new ways to make the sustainable and circular choices ahead of us irresistible.



Photo: Kvadrat

Creating desirable tabletops from waste

Kvadrat Really's Textile Tabletop™ is based on post-consumer textile waste.

Contributor
- Kvadrat

The Kvadrat Really Textile Tabletop™ is a new low emission, upcycled tabletop, a 100% circular product which is directly applicable with no need for additional surface and edge treatment. The proposition targets the furniture industry and offers a plug and play product, finished or semi-finished, in sizes fitting the industry norm for workspace tabletops.

An answer to a global resource and textile waste crisis, the Textile Tabletop™ meets the circular and aesthetic parameters of the Kvadrat Really product portfolio. It reduces CO₂ emissions significantly, from an average 50 kg of CO₂ for a conventional tabletop to 13 kg of CO₂ for a Textile Tabletop™.

The creation of the product uses responsible processes. The binder used in the product is 20% second generation BICO plastic from waste streams and 10% bio-binder from waste feedstock. Production takes place in Denmark and is 100% sustainable-powered, based on mechanical recycling and using no water. The product's colour is created from the colours of the waste.

The characteristic of the material allows multiple usage and fits new and existing table frames. This allows clients to underpin the Kvadrat Really no-waste concept in both new products and in refurbished products. Using aesthetics and a creative approach, they have managed to make their tabletop irresistible.

Advancing the flow of water

The world's largest pump manufacturer balances the demand for a resilient water supply while remaining sustainable.

Contributor
- Grundfos

In collaboration with
- The Carbon Trust
- Science-Based Target Initiative

Global energy use in the water sector is projected to more than double by 2040. Grundfos promotes energy efficiency as a core value, aiming to save end-users' energy through innovative water solutions. It recently became the first water solution company in the world to receive a validated net-zero target from the Science-Based Target Initiative, setting an example for the industry to follow.

Its product solutions reduce water consumption and enable customers to save water through water efficiency and reuse. Coupled with this, its Water Access program provides sustainable water solutions to underserved communities and improves their quality of life. They have also begun to implement circular principles to their product design and manufacturing.

Grundfos is the first water solution company to receive a validated SBTi Net Zero target. It recognises that 99% of its value chain emission comes from Scope 3 downstream, as with other companies in the industry, and that indirect emissions need to be addressed to create impactful climate action. Grundfos worked with the Carbon Trust to develop a decarbonisation strategy, along with customers in co-creating and supporting their decarbonisation journeys.

Grundfos also works on an industry platform to create shared knowledge with its peers, and advises on technology solutions and regulation drivers to accelerate national carbon neutrality strategies.



Breaking the linear packaging cycle

Danish packaging company Plus Pack is working hard to develop environmentally and socially sustainable packaging.

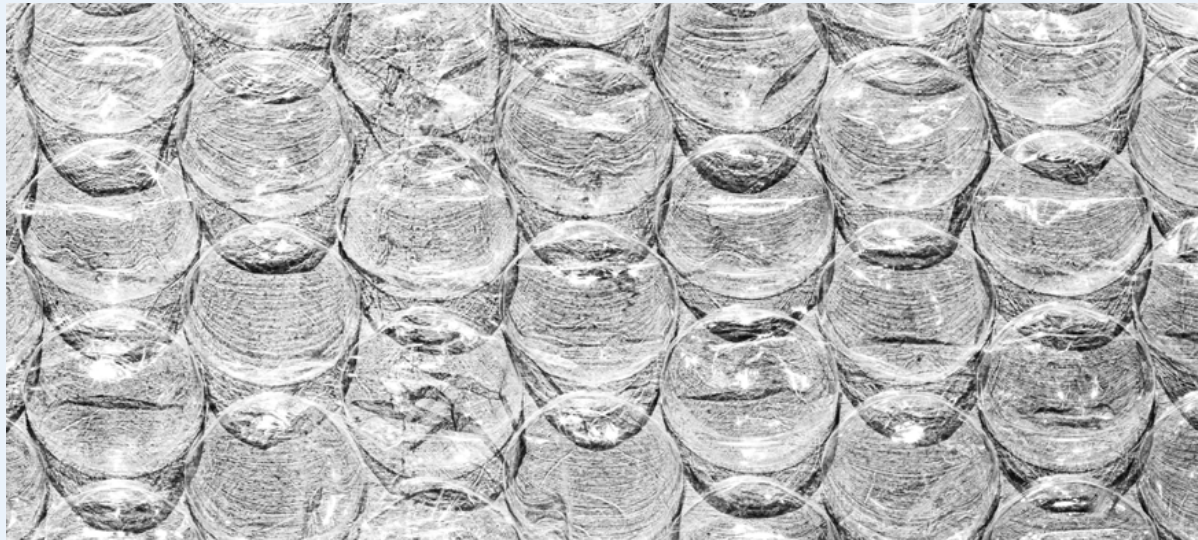
Contributor
– Plus Pack

Packaging has a huge environmental impact, soaking up resources including energy, water and fibres. The lifecycle of packaging is also traditionally linear, from packing material to landfill or burning. Danish packaging company Plus Pack has implemented several creative green initiatives to reduce its environmental impact.

The company offers a range of biodegradable and compostable packing solutions made from renewable resources such as sugarcane, paperboard, and PLA. Plus Pack has implemented energy-efficient production processes and uses renewable energy sources to reduce its carbon footprint.

To reduce waste, Plus Pack has also introduced a closed-loop system that ensures any waste generated during the production process is recycled or reused. The company sources raw materials from sustainable sources and has implemented a traceability system to ensure that its products are produced in an environmentally and socially responsible manner.

Plus Pack has also launched a range of products made from 100% compostable plant-based materials. The goal is to continue to create aesthetically pleasing packaging that has less impact on the environment.



Credit: © The Infinite Bridge (2017) - Johan Glæde.
Photographer: Dennis Borup-Jakobsen

The Society

Using creativity to drive cultural and social change across sectors

Structural change

Joining forces to effect change through large-scale industry-wide efforts

Cross-sectional co-operation for change

How Desire, A New European Bauhaus project, creates transformation

UNESCO World Capital of Architecture

Using a global platform to highlight the importance of a sustainable buildings industry

Structural change



Connie Hedegaard
 Former European Commissioner for
 Climate Action
 Former Minister for the Environment, Energy
 Climate
 Chairman of the board of CONCITO

The importance of the European Green Deal

In driving forward the green transition, the European Green Deal is a rallying call designed to drive behaviour change and help create a sustainable and resilient future for all.

As climate change and environmental degradation continue, societies around the world must undergo a transformative shift towards sustainability. The European Green Deal, launched by the European Commission in 2019, stands as a significant and ambitious initiative that aims to guide Europe towards a greener future. Its importance lies in its potential to drive forward the necessary behavioural changes within European societies and pave the way for a sustainable and resilient future.

At its core, the European Green Deal acknowledges the urgent need for action in combating climate change. By setting a goal to achieve climate neutrality by 2050, the deal emphasises the imperative to reduce greenhouse gas emissions and adopt renewable energy sources. This commitment serves as a rallying call for European societies to embrace sustainable practices and invest in green technologies. It provides a framework that motivates individuals, businesses, and governments to align their behaviours and actions with the goal of a low-carbon economy.

The European Green Deal also recognises that environmental sustainability and economic prosperity are not mutually exclusive. It acknowledges the potential for a green economy to drive growth, create jobs, and enhance competitiveness. By prioritising the development of a circular economy, the deal encourages innovation and creativity, resource efficiency, and sustainable business models. These changes incentivise industries and individuals to transition towards sustainable practices, driving the necessary behavioural shifts that can lead to long-lasting change.

Energy efficiency is another crucial component of the European Green Deal. By promoting measures such as energy-efficient technologies, building renovations, and sustainable mobility, the deal aims to reduce

energy consumption and emissions. This not only helps combat climate change but also has tangible benefits for individuals and businesses, such as reduced energy costs and enhanced energy security. By prioritising energy efficiency, the European Green Deal makes sustainability accessible and affordable for all, facilitating the behavioural changes necessary for a greener society.

Finally, the European Green Deal recognizes the global nature of the climate challenge and the need for international cooperation. By engaging with international partners, the deal promotes the exchange of best practices, supports developing countries in their green transitions, and leads by example on the global stage. This collaboration reinforces the urgency and importance of the green transition and highlights the interconnectedness of societies worldwide. By working together, societies can learn from one another, accelerate progress, and inspire one another to embrace sustainable behaviours and practices.

In conclusion, the European Green Deal serves as a comprehensive and transformative framework that can drive forward the necessary behavioural changes within European societies. By addressing climate change, greening the economy, promoting social justice, enhancing energy efficiency, and fostering international cooperation, the deal shows a way to a sustainable and resilient future.

However, not much and definitely far from enough will come of all these good intentions unless we as individuals, as businesses, and as governments and municipalities re-evaluate our actions including our behaviour and our consumption. Only if all of us help pulling and take responsibility wherever we are, we can hope of the needed collective shift towards sustainability and lead the green transition towards a brighter future.



Developing a circular textile industry

A ground-breaking sectoral collaboration brings together the fashion and textile sector with environmental agencies.

Contributor

- LDC

In mid 2022, the Danish Ministry of Environment and the country's fashion and textile sector announced a trailblazing new approach: a sectoral collaboration designed to engage a large number of Denmark's fashion and textile sector manufacturers, and help it move from a linear to a circular economy. The Lifestyle Design Cluster across Herning, Aarhus and Copenhagen represents the interests of the Danish industry collaboration.

The ongoing collaboration aims to transform the way the fashion and textile sector manufacture, use, and dispose of clothing and textiles. It focuses on a range of issues, including environmental sustainability, social responsibility, and animal welfare, and has developed a set of guidelines for its members to follow.

These guidelines include a commitment to common goals on circularity within design thinking, in relation to materials and business models; measuring circularity and enabling goal setting and progress; sharing best practice and practical collaborations to effect long-term, systemic change, and setting goals across the sector to stem the growing consumption of resources caused by textile products marketed in Denmark.

By working together, the companies, government agencies, and NGOs have been able to share knowledge, resources, and expertise, and to develop solutions that benefit the industry as a whole. It will position the textile industry in Denmark well so it can continue to thrive and grow in the years ahead.

Putting the green transition into education

GreenEdTech aims to increase young citizens' green key competencies to enable them to tackle climate-related problems.

Contributor

- GreenEdTech

In collaboration with

- VIA University College
- National Agency for IT & Learning – Ministry of Children & Youth
- Topsoe
- Grundfos
- CONCITO
- Aarhus University
- University College Copenhagen
- Confederation of Danish Industry - Digital
- DI - Digital
- Lindhardt & Ringhof Education
- Green Hub Denmark
- Innovation Fund Denmark

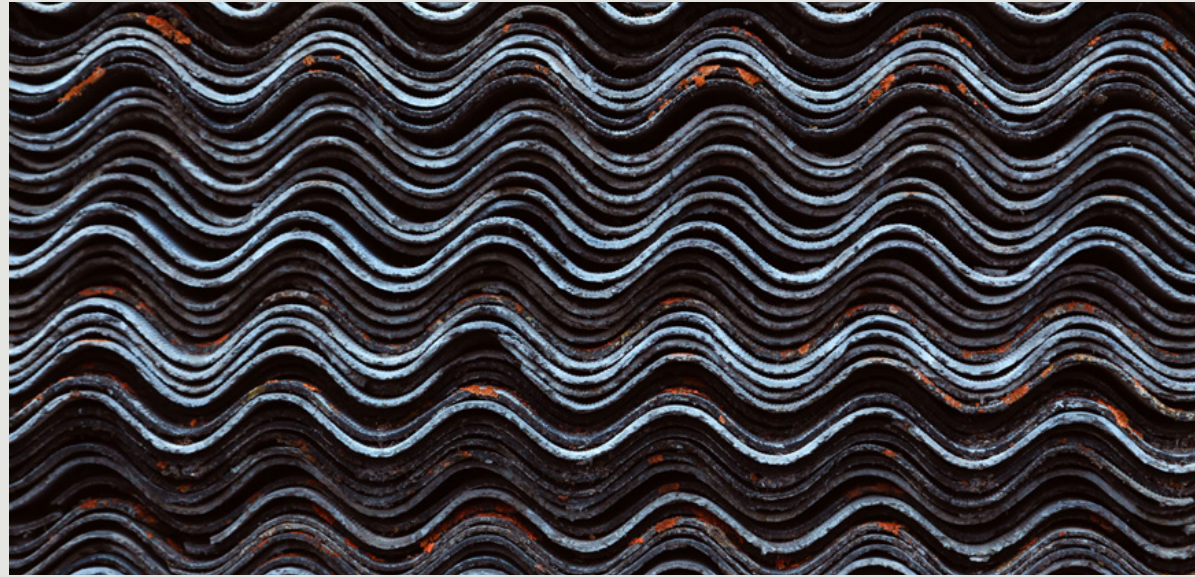
We face a fundamental green transformation of our entire society, but we lack the qualified labour to do it. Children and young citizens are the workforce of the future, and it is crucial to prepare them for it.

GreenEdTech's digital solution makes the green transition a part of school education. The project aims to develop a platform for Education for Sustainable Development (ESD) based on a citizen science approach. Citizen science is defined as citizens and other societal actors' solving complex problems in collaboration with scientists or professionals. Besides being a research method, it connects to teaching goals around learning how to become an active citizen.

The project has four objectives. The first is to use research and practice-based design principles and didactic models to facilitate the ESD transition in Danish schools. The second is to develop a learning platform and materials to enhance ESD in the teaching programmes within Danish schools. The ESD learning platform will make didactic models and learning materials in Danish, science and maths available to all schools in Denmark.

The third is to support students to gain ESD competencies and skills via citizen science projects in schools and organisations. These projects address real-world problems, supporting authentic collaboration and increasing the contribution of education to building a more sustainable world. Finally, the fourth aim is to increase ESD skills and competencies in practice.





Creating a circular construction value chain

Circle Bank seeks a circular future for the building and construction sector.

Contributor

- Circle Bank

In collaboration with

- Circue
- Matter by Brix
- Twentyfifty Futures
- HD Lab
- J. Jensen A/S
- Tredje Natur
- Danish Technological Institute
- University of Southern Denmark
- Rald & Co.
- Lejerbo
- Middelfart Municipality
- Roskilde Municipality
- Danica Ejendomme
- Partly funded by Innovation Fund Denmark & Realdania

In recent years, innovation and small-scale experiments in circular construction have provided us with a realistic view of a more circular future within the construction sector. A major systemic challenge remains, however: it is still more efficient, cheaper, and faster to build using a traditional linear approach.

Circle Bank addresses climate change and resource scarcity on a societal level by developing, scaling, and connecting the circular construction value chain. By solving the existing research and market challenges, it develops, scales, and connects an integrated and cost-effective circular value chain that can compete in market terms with the linear construction practice.

Its digital platform functions as the circular construction sector's main collaboration hub, completing the cycle from design to demolition. The aim is to contribute with a building and material bank, a stock exchange for circular materials, and circular decision-making support aimed at building owners.

In collaboration with other stakeholders in the value chain, including Circue, the company commercialising the results of the Grand Solution Project, Circle Bank will create a seamless, digital workflow for circular construction, with gains to be made across the industry from a financial and environmental perspective.



Cross-sectoral collaboration



Torben Klitgaard
CEO
BLOXHUB

A new vision for the built environment: developing innovative ways to make urban transformation irresistible

Desire, a New European Bauhaus project, brings art, design and architecture together in different local sites in Denmark and Europe to design a new vision for the built environment. BLOX-HUB leads the initiative, in close collaboration with Danish companies and organisations.

Our cities will never become climate neutral if we do what we have always done. We need to think differently, involve and engage all stakeholders, and let sustainability become part of our everyday thinking and DNA. But most importantly, we need to include the dimension of beauty and aesthetics to turn the transformation into something irresistible.

Creating the desire path

In Desire, we talk about a 'desire path', the path created when people choose not to follow the path designed for them. The 'desire path' is instead the preferred path, the irresistible route they want to take.

Our journey towards the 'desire path' starts with a set of principles that we transform into actions. A first version of five principles have been defined, embracing the key elements of a future desire path. They are: belonging, circular mindset, planetary perspective, agency and aesthetics. The principles provide guidance and a framework for new ways of experimenting with urban transformation in different contexts, in Denmark and other European countries.

Finding an alternative vision

For instance, what happens if we initiate the transformation of a social housing area by nurturing a sense of belonging? Or if we embrace a planetary perspective and listen to the 'voices' of non-human

species when refurbishing and developing urban areas? Can principles like these act as a desired path, opening up for new perspectives and new ideas to make the sustainable choices we must take become so attractive that they barely seem like a choice? That is the ambition.

Three examples

In Denmark, the following three case studies represent different contexts and different approaches to creating irresistible transformations. They examine Gadehavegaard, a social housing area in Høje Taastrup, Copenhagen; the redevelopment of Herlev asphalt factory; and Kalundborg, a smaller city on the west coast of Zealand, where urban transformation is being taken to the next level.

Each of these three sites – along with an additional five European sites – are prepared to test, experiment, and work with the principles, tools and new approaches. The project is all about thinking and acting differently. By the end of 2024, we will compile and share narratives, case studies and a white paper about what we have learned and where the experiments have led. New initiatives will follow.

With Desire, we aim to create a movement and to contribute to the movement of New European Bauhaus. Desire is the initial step forward.



Photo: Rothorn, Pixabay

Creating a new future for Kalundborg

As a new architecture education from the Royal Danish Academy opens, a circular economy experiment beckons.

Contributor

- Desire

In collaboration with

- The Royal Danish Academy
- Municipality of Kalundborg
- Knowledge Hub Zealand

Kalundborg is a town in the western part of Zealand in Denmark with a long coastline and wide areas of beautiful and protected nature. The town has a large industrial area with thousands of jobs and some of the fastest growing industries in Europe, and a world-leading work cluster including Novo Nordisk, Novozymes and Ørsted. While a large number of people commute for work every day, the town itself is considered a little overlooked.

The Desire project sets out to explore what could create an irresistible circular society in Kalundborg, using the arrival of the Royal Danish Academy's new architecture education as an opportunity for systemic evolution.

The new campus allows the team to explore the potential for a more symbiotic relationship between students, citizens, industry and the municipality. Desire sets out to explore how sustainable design and planning strategies can be activated to create a diverse physical and social integration of the Royal Academy in Kalundborg. New students will be engaged in mapping and planning their own future circular learning locations.

It will simultaneously investigate how participatory methods can be used as a way to inspire students, key citizen and stakeholder groups, along with local institutions to create vibrant networks of collaboration. The aim is to guide Kalundborg and the new Royal Academy towards irresistible and mutually beneficial circular values.



Photo: Tori Balslev, Daily Fiction, Performance artist and Garden Caretaker

Community-led regeneration in Herlev

What happens when we listen to a place before we develop it? Desire introduces the Garden Caretaker.

Contributor

- Desire

In collaboration with

- NXT

There once was an old asphalt factory in Herlev, Denmark. Today this old industrial site is being transformed into housing. But this is no ordinary knock-down-and-build, as the project is testing how to link its future human inhabitants with the natural landscape, using aesthetics and sensory learning in the area, while the site is a construction ground.

Inspired by the late French philosopher Bruno Latour, who states that "if you don't know something, you won't fight for it", Desire has found a way to reconnect people with nature. Led by creative company NXT, the creator of the 'Being of Place' and 'Garden Caretaker' initiatives, the project introduces art as a method for social and ecological regeneration.

The Garden Caretaker will be embodied by various artists representing a diverse and dynamic field of different practices. Central to the project is the Garden Caretaker's House, a transparent temporary dome created from repurposed materials to be used as a space for workshops, round table discussions, sensory performances, a laboratory and exhibitions.

The Garden Caretaker initiative seeks to invite a diverse group of stakeholders into an aesthetic exploration on how we may develop ways of living that care for land and its inhabitants without exploiting and over-consuming resources.



Photo: Daniel Rasmussen, Copenhagen Media Center

Co-creating a housing estate for all

Desire's project uses longevity, inclusion and knowledge-sharing to drive successful co-creation with a circular mindset.

Contributor

- [Desire](#)

In collaboration with

- [Domea.dk](#)

Gadehavegaard, a large public housing estate with almost 1,000 homes, faces an enormous transformation. In its future state, it will have space for educational institutions, common indoor meeting places, public and private housing, and a large biodiverse park area, used as common outdoor space for everyone.

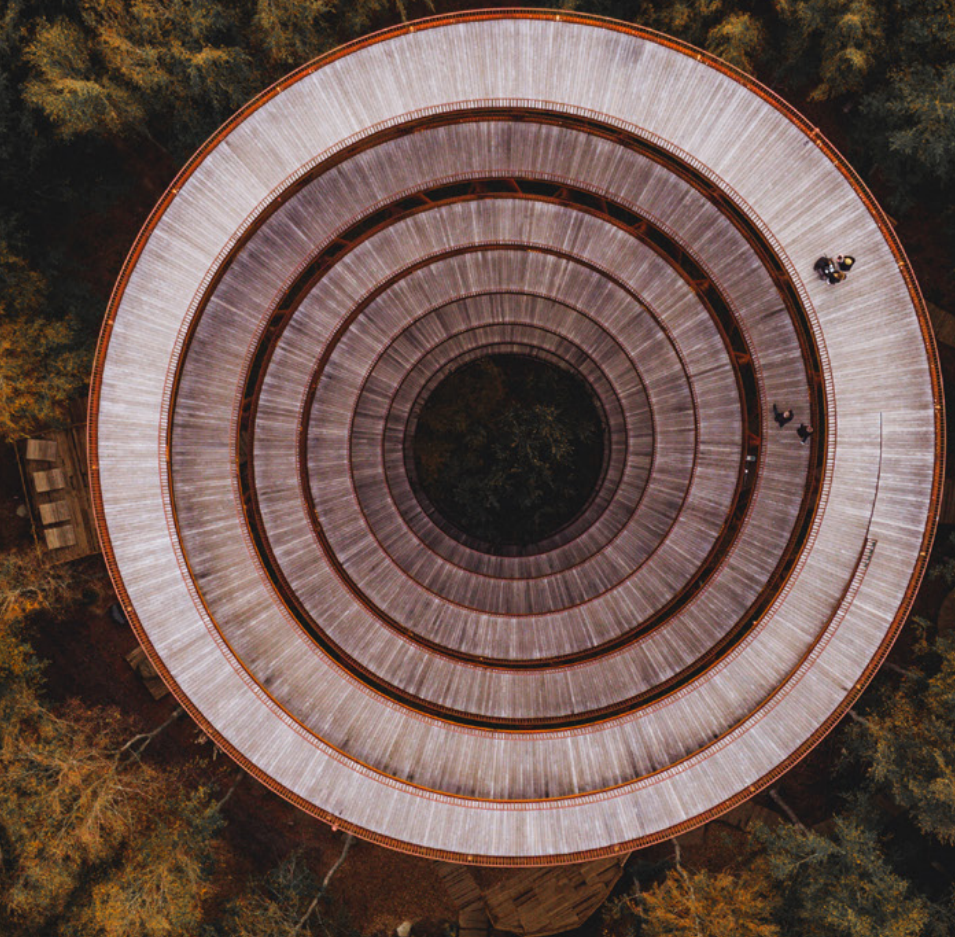
Some residents oppose the changes, feeling as if they are being asked to tear down the upper floor of their own house, sell their front yard to a developer and open their backyards to everyone to use. Transformation here is not just physical: it's also about changing behaviour and culture.

In this project, Desire asks the question: how do we ensure inclusion in the transformation of the larger outdoor area? How do we create the commitment and support needed to ensure the transformation from a parking facility to a biodiverse park is well received, not just when it is opened but also into the future?

One key principle leads all the work: residents must be at least as well off after the transformation as they were before. Everyone must feel heard. Desire will engage the area's many different residents and user groups by informing and sharing knowledge about biodiversity, showing examples to inspire them.

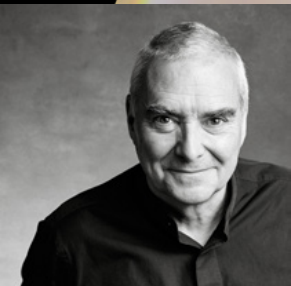
The future area is designed based on a thorough understanding of the users' preferences and expectations. The physical framework will support safe and inviting year-round use, supported by all stakeholders, and so the transformation can take place with a focus on creating an irresistible biodiverse park.

© Camp Adventure (2019) - EFFEKT Architects.
Photographer: Daniel Willadsen



UNESCO World Capital of Architecture

Dominique Perrault
Architect & President of the joint
committee UNESCO-UIA for the World
Capital of Architecture



Architecture is a celebration – in Copenhagen more than anywhere else

For the entire year of 2023, Copenhagen is the World Architecture Capital. This temporary status, created by a joint UNESCO/UIA committee, designates a paragon city in sustainable development. Where better than the capital of Denmark?

The World Architecture Capital is a triennial celebration of a specific city around the world, focusing on architecture as a way to underscore and demonstrate the crucial role that architecture and culture plays in sustainable urban development. It is still a young event: only one city, Rio de Janeiro, has been awarded this title to date.

The event offers a chance to come together as workers of the built environment and exchange ideas and thinking about our practice. Architecture shouldn't solely be considered as a means to an end, but as a field in itself, in tune and in sync with the world and its evolutions.

Copenhagen, the transitional city

At the seashore of Copenhagen there sits a tiny mermaid staring longingly at the sea. Not human yet, not fully sea life anymore, she is a creature of the strand; an intermediary figure. A city could not choose a better icon to represent it, for its own existence is also always in transition. Never a finished oeuvre, the city is always becoming something else, housing more and more diverse types and generations of people as time passes.

Copenhagen is a great example of this. Rebuilt following the Battle of Copenhagen in 1801, and significantly redeveloped via the 1947 Finger Plan strategy, a planning directive that linked road and rail networks and introduced wedges of green space between

them, the city has made and remade itself over time. Refocused to prioritise public transport and the preservation of natural green spaces, banning dense development outside of the close vicinity of a train station, its policies remain relevant given today's transport policies and the significant global challenge to reduce our dependence on fossil-fuel powered vehicles. The transitions within the city have been powered by the will of Copenhagen's citizens and their own vision of a desirable future, as well as the accuracy of the perception of city designers.

City-making and Copenhagenization

From the internationally-recognised works of Bjarke Ingels or Jørn Utzon to the urban works of Jan Gehl, Copenhagen's architecture has also been influential internationally in the world of city-making. The verb Copenhagenization has become a symbol of the spread of cycling in cities, with a global influence revolving around a peculiar understanding of public spaces and their importance in city making. Cities as diverse as Mexico City and New York City have benefitted from its influence.

The World Capital of Architecture is a celebration of this specific heritage and current state, and is celebrated through numerous events such as the first permanent exhibition of Danish Architecture at the Danish Architecture Center, and multiple experimental architecture pavillons around the city, culminating in the influential UIA conference.



Astrid Maria Rasmussen, Copenhagen Media Center

Creating sustainable futures for all

How can architecture shape societies and create potential for a more sustainable, equitable and inclusive future?

Contributor

- Mette Lindberg, CEO, UIA World Congress of Architects, 2023

In collaboration with

- <https://uia2023cph.org/partners/>

In July 2023, the 28th UIA World Congress of Architects was held in Copenhagen. Focused on architecture and sustainability, it promoted, discussed, and showcased how architecture can work as a vital tool in achieving the UN's 17 Sustainable Development Goals. This ground-breaking event was one of the world's largest on sustainable architecture and created an opportunity to explore new solutions and materials, examine the latest research, enjoy dialogues across sectors and borders, and meet influential profiles.

Urban planners, investors, developers, designers, and the building industry need to move in the same direction, to use resources better, build in regenerative and planet-caring ways, and create more equal societies. Forums and congresses like this are critical for their development. When we bring people together to discuss and innovate on critical issues like this, we find ways to help industries, and through them, societies, move forward together. Real and lasting change happens with a gathering of people.

The next step is action. In the aftermath of the congress, each participant returned to their own countries with something tangible to work with: a new material, a different solution, new connections, or new ideas that could change the way they build cities, buildings and communities.

Along with new strategies and ideas for sustainable architecture and urban planning, including the use of renewable materials and energy-efficient designs, it was intended that collaboration between architects and policy-makers will globally kickstart the development of more effective policies and regulations promoting sustainable and equitable urban development.



Daniel Rasmussen, Copenhagen Media Center

Harnessing the power of data in design

Henning Larsen's Urban Decarb tool helps understand the real impact of design choices in an urban development plan.

Contributor

- Henning Larsen
- Rambøll

In collaboration with

- Rambøll Innovation Fund

While quantifying the carbon footprint of buildings has improved in recent years, buildings cannot be examined in isolation. The immense impact of embodied carbon on an urban scale – meaning the emissions associated with the whole lifecycle of material components in our cities – is too often overlooked.

Henning Larsen's architects, urbanists, and computational designers have developed Urban Decarb, a tool for integrating carbon knowledge of urban components in the early design stages of urban development. The tool covers all the physical elements of the city, from roads, buildings and surfaces to infrastructure, landscape and what's underground, as well as mobility and energy supply, elements that make up around 60% of a personal carbon footprint.

Based on synchronised datasets associated with the geographic context of the project, Urban Decarb presents the designer with approximations that make it possible to assess the impact of their design decisions early on, by comparing the carbon cost of scenarios as they are being modelled in real-time.

The tool introduces new and unique knowledge to the design process, so projects remain in alignment with both global and local climate strategies and legislation. It is also a means of deepening contextual understanding to include a carbon focus and create an immense environmental impact when scaled.

It holds significant strategic value for landowners, authorities, and developers who want to engage in a conversation about how they can optimise and strengthen the sustainability profile of their project, and acts as a first step towards a greener, more sustainable urban development plan.



Photo: Henning Larsen



Photo: Design by MAST, Visualisation by MIR

Designing for life on water

Visionary design studio MAST is at the cutting edge of architecture on and around the water.

Contributor

- MAST

MAST (Maritime Architecture Studio) was founded by the Danish-Australian architect duo Magnus Maarbjerg and Marshall Blecher. Their combined design studio and workshop is based in the boat yards of Copenhagen, giving them a unique insight into the technical conditions required to build on water, as well as the social dynamics that create meaningful and sustainable water environments.

Their mission is to help cities develop sustainable and innovative waterscapes that benefit people and the planet. For several years, they have discussed the relationship between the city and the water and worked intensively on developing new sustainable concepts and concrete methods for building on water.

Projects include 'Copenhagen Islands', a floating islands project designed to create a park, or 'parkipelago' on water that can be used for myriad leisure activities. An aim was to focus attention on an improved harbour environment, global climate change and increased water levels – some of the biggest problems the world is facing today. Another project, innovative floating pontoon system 'Land On Water', is modular and flat-packable, overcoming some of the problems inherent in traditional CO₂-heavy floating pontoon solutions, typically made from concrete, styrofoam and steel.

MAST's rapidly growing portfolio includes floating homes, harbour baths, and urban development projects in Denmark and abroad. It has been awarded international accolades including the Taipei International Design Award, the Beazley Design Award and the Danish Design Awards.



Photo: Adam Mark

Creating the housing of the future, today

Living Places Copenhagen is an experimental prototype developed to benefit people and the planet equally.

Contributor

- VELUX

In collaboration with

- EFFEKT

- Artelia

- Enemærke & Petersen

The VELUX Group's vision is to lead the way within the building industry and show how rethinking buildings can help solve some of our global climate and health challenges. Living Places Copenhagen is a demonstration on how to build homes with a three times lower CO₂ footprint, and a first-class indoor climate, at a price that matches the market for a one-family house at scale.

Jernbanebyen, a reclaimed railway space in the heart of Copenhagen, hosts the first set of prototypes of the Living Places concept, built by VELUX in partnership with EFFEKT, Artelia and Enemærke & Petersen. The exhibition is a partner project for the UNESCO-UIA World Capital of Architecture, consisting of seven prototypes: five open pavilions and two finished homes at full scale, to show that we can build homes that are healthy for people and the planet right now.

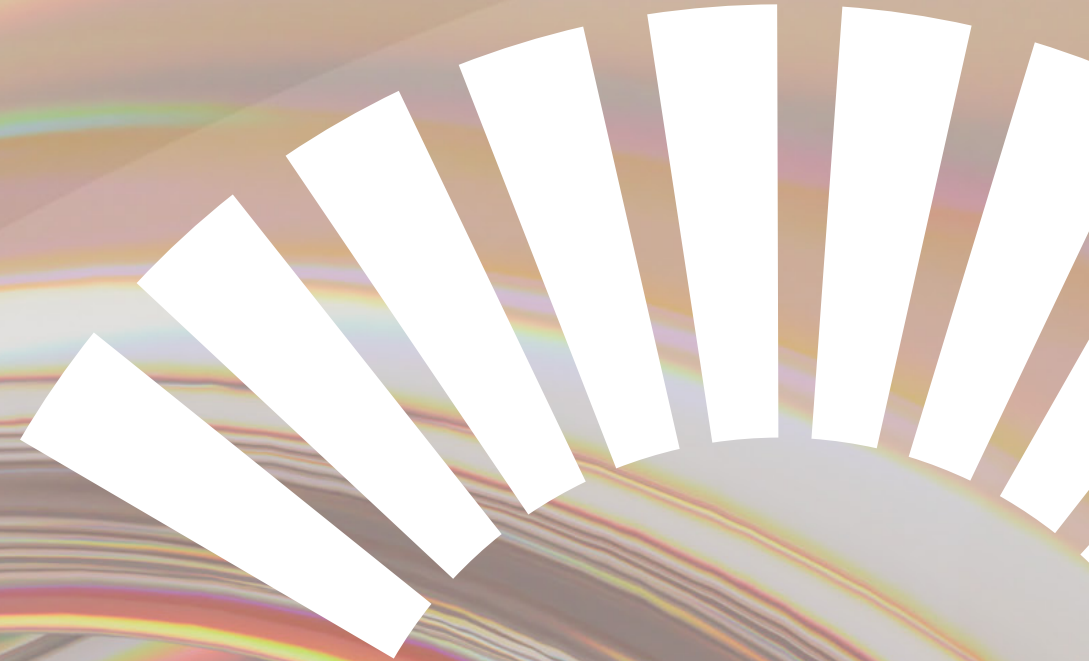
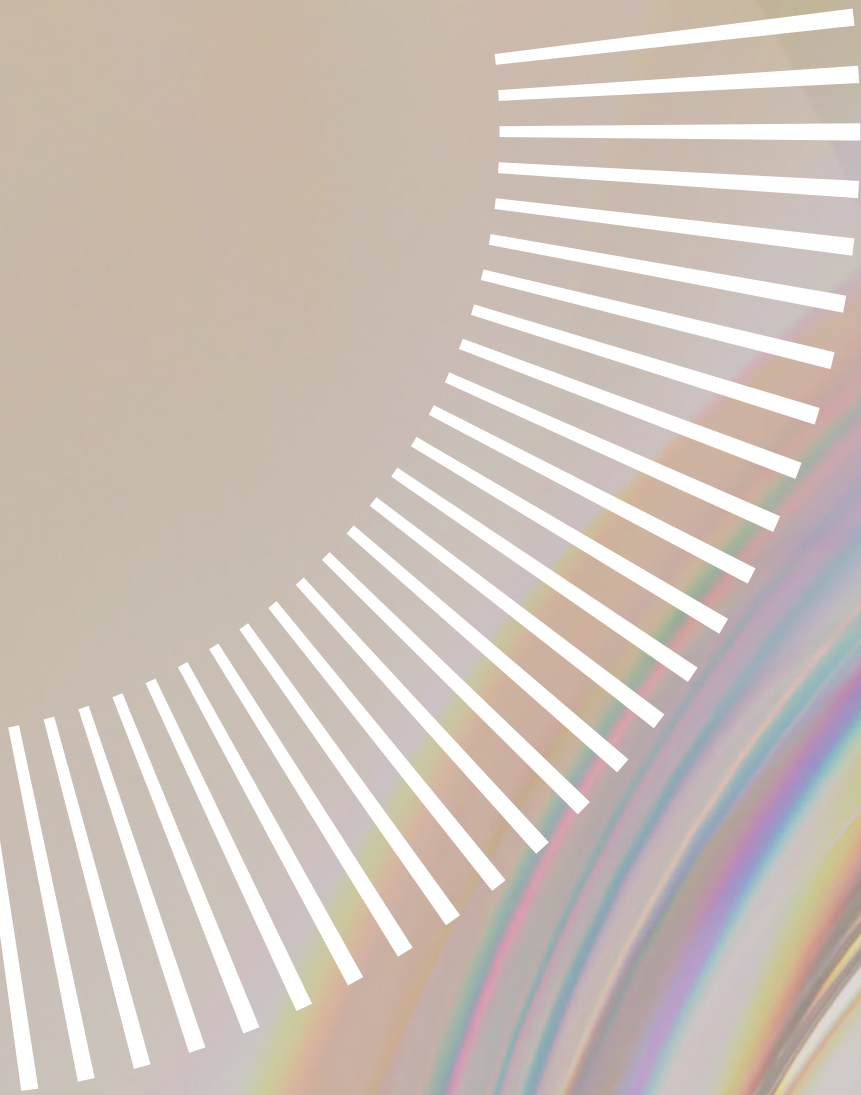
The concept is based on five key principles: homes should be healthy, affordable, simple, shared over time and scalable. Starting from the ground up, each building component is optimised for the best combination of price, indoor climate and carbon footprint. A special focus given to the envelope of the building – the entire exterior building system – where significant CO₂ savings can be achieved.

Living Places Copenhagen demonstrates how to build homes with a CO₂ footprint of 3.8 kg CO₂ per square metre per year – three times lower than the current Danish legislation of 12 kg CO₂ per square metre per year – all while making use of daylight and fresh air to deliver a best-in-class indoor climate, to a price that matches the market price for a one-family house or row houses at scale.



Photo: Adam Mark

Final words



There is no alternative

Daria Krivonos of the Copenhagen Institute for Future Studies leaves us with a rallying call to action: change is imperative and a sustainable society is unavoidable. It is now for us to take the next steps.



Daria Krivonos
CEO
Copenhagen Institute for
Future Studies

A sustainable society is no longer just a vision, it's a necessity. Yet the transformation required to get us to a truly sustainable state – one in which we develop a responsible relationship with the resources of Earth – is enormous and all-encompassing. No society has ever been faced with a problem of this nature, one that so fundamentally asks of us to change our behaviour for the good of future generations.

In a way, the changes we need to make are relatively banal. They require no heroic self-sacrifice or acts of great bravery. Our forebears have fought wars, withstood hardships beyond measure, and lost loved ones in the fight for freedom or to end slavery or tyranny – in short, to create a better world. In contrast, the challenge of our age merely requires us to change our habits; to travel less by plane, to change how we eat, and to buy less stuff we might not truly need in the first place, all of which will contribute to enabling future generations to enjoy the freedom, the nature, the beauty of this world that we have been so blessed to experience ourselves.

Our current state has expired

Most of us have a rough idea of what must be done, yet we are so unaccustomed to making the kinds of concessions necessitated of us that it could almost seem that we are in a state of paralysis. We still drive petrol cars to work, live in homes that are fuelled by non-renewables, and buy often-discarded clothes made from materials that are unsustainably sourced – not because we don't care but because these habits are part of the fabric of 21st century life.

They have been formed and carried over from a past where the toll our lifestyles took on the climate and natural habitats of the planet was of little consideration, both politically and privately. This was the society that created the wealth and prosperity that have made our lives so much easier, more comfortable, and convenient. But it has become painfully clear that this society also has an expiration date.

To begin repaying our ecological debts, the fabric must be torn, and a new one weaved together. What this means is that every one of us will need to face a new reality where we stop valuing the relatively predictable present higher

“ It is the challenge of a generation, and should we fail to rise to the occasion, our descendants will bear the consequences many generations into the future.

than the uncertain future. Every one of us will have to embrace innovation and creative thinking as we strive towards locating a new and better way to live. The longer we wait, the less feasible the idea of incremental change becomes. It is only by working together and by helping each other that the obstacles that lay in front of us can be overcome. It is the challenge of a generation, and should we fail to rise to the occasion, our descendants will bear the consequences many generations into the future.

A collective shift is needed

There are those who prefer to point to someone else to do the job for them. While it's true that more conscious consumption and lifestyle changes on the part of individuals will not solve all our problems, a collective shift in mindsets and habits will be a necessary component. If more of us would be willing to pay extra for products that are truly sustainable or 'green', there are companies who are more than willing to meet that demand. We need to be open to change, and ready to embrace creative options that can help us accelerate what needs to be done.

If we want our governments to truly commit to a sustainable agenda and impose far-reaching and bold regulations, we will need to change how we vote. To quote a worn-out but fitting adage, it falls on each of us to be the change we want to see in the world. This is especially true for those of us with the highest carbon footprint (something which tends to be closely correlated to wealth), as well as the decision makers in the world of business with the power and influence to enact change that extends far beyond their own individual consumption and lifestyle choices.

We need to step forward

Those of us who live in the world's advanced economies

bear a particular responsibility to lead the change. After all, while we have benefitted the most from the fossil fuel economy, we also stand to suffer the least of its consequences.

Just as the old ways of doing business are fast becoming part of the past, governments need to take a long-term view to create a safe passage to the future. This includes ensuring political representation for unborn generations (alien as that concept may seem). Acting on behalf of people who do not yet exist comes with some obvious challenges, but inspiration for how we can approach the task can be found in the innovative Welsh Future Generations Commission, Malta's Guardian of the Future Generations office and other similar initiatives.

The UN General Assembly has started taking small steps in this direction with the publication of a "Declaration on Future Generations" report. Included in its recommendations are a 'generational test' to evaluate decisions and policies against their long-term impact on future generations as well as the development of an 'Intergenerational Sustainability Index'.

Embracing change

Change is uncomfortable for the human mind. But the sooner we can embrace the fact that there is no alternative to creating a sustainable world, the better off future generations will be.

This report is filled with examples of creative and companies and organisations that are pushing for this change. It is a long journey that starts with feeble, uncertain, and trying steps. But hopefully, these steps will soon turn into a march, at the end of which the generations of today can hand over the greatest gift there is to posterity – the gift of a planet worth living on.

What can the creative industries offer scientists, policy-makers and businesses as they face a future focused on the circular economy and the essential green transition?

From understanding how to create desire for greener lifestyles and behaviours, to inspiring examples of business processes and tools that will shape a circular future, Creativity as a Driver for Green Transition is intended to inspire your next project and make sustainable business processes irresistible.

About Creative Denmark

Creative Denmark assists international stakeholders and decision makers in exploring solutions, products, and processes within the Danish creative industries. As a not-for-profit, public-private partnership, our primary objective is to connect international demand for innovative solutions with Danish creative companies and competencies. Through our efforts, we strive to raise awareness about the transformative potential of Danish creativity as a driver for sustainability and increased quality of life.

For more information visit
creativedenmark.com

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