



**JOIN THE COLLAB**

— WITH NATURE —



2022

# Sustainability Magazine

INSPIRATION & THOUGHTS ON HOW TO COLLABORATE  
WITH NATURE IN THE BUILDING INDUSTRY

The background of the entire page is a light-colored, semi-transparent image showing a dense pattern of wood cross-sections. The wood grain is clearly visible, with various shades of beige and light brown. The sections are of different sizes and are arranged in a somewhat chaotic but rhythmic pattern, creating a textured, organic feel.

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# Message from the CEO

Welcome to the Junckers Sustainability Magazine. At Junckers, we are committed to the ongoing protection and wellbeing of the environment. Long before global warming became a crisis Junckers searched for ways to use and at the same time preserve one of our planet's most valuable resources, wood. Responsible forestry and sustainability have been part of our DNA since 1930. For more than 90 years we have focused our efforts on solid hardwood flooring. With this magazine we would like to share our views on how we can collaborate with nature and make informed choices about wood as a building material.



This publication is not only a Junckers undertaking. Experts from the timber industry spent time with us clarifying why wood is nature's own stroke of genius. Our magazine leads off with articles explaining more about the world's most environmentally friendly raw material. We share our thoughts on sustainable forestry. And wood you believe it - to grow a sustainably managed forest it must be thinned. Finally, for your inspiration we have included case studies of buildings and projects designed to meet high environmental standards.

At Junckers we want to make wood a first-choice material in design and construction. Because wood presents opportunities and is the sustainable way forward. After studying this magazine, we hope you agree.

Thank you for reading and for joining our collaboration with nature.

Sincerely,  
Lars Gjødsbøl and Team Junckers

A handwritten signature in black ink, appearing to read 'Lars Gjødsbøl'.



# Wood is Nature's Stroke of Genius

Let's talk trees ! Wood is the world's most environmentally friendly material

Made of sun, air, soil and water, wood is a renewable resource that does not produce waste or pollution. Wood can be recycled and saves energy. Wood is what a fossil-free society needs to be built of. Wood is nature's own recycling.

The scientific explanation is photosynthesis, which creates the carbon cycle where trees and other plants collect the sun's energy and the CO<sub>2</sub> in the air. Wood stores CO<sub>2</sub> and saves fossil energy. Wood is a material we need more of to create a cleaner and more sustainable world.

## WOOD CO<sub>2</sub>TS LESS

Trees capture CO<sub>2</sub> from the atmosphere and store it as carbon



## BETTER FOR THE PLANET

Using wood reduces greenhouse gases, halts climate change and improves biodiversity



## THE GREENEST CHOICE

Wood saves emissions through captured carbon throughout its life span



\*Source: [www.trae.dk](http://www.trae.dk)

## WOOD YOU KNOW?

That there are more than 60.000 wood species in the world? At Junckers we manufacture solid hardwood floors of beech, oak, maple and ash

# Sustainable Forestry is Paramount



HENRIK SKIBSTED JAKOBSEN

TIMBER PURCHASER, JUNCKERS A/S

MEMBER OF THE NATIONAL FOREST COUNCIL, DANISH SAWMILL INDUSTRIES

BOARD MEMBER, PEFC DENMARK, ASSOCIATION OF DANISH WOOD & FURNITURE INDUSTRIES



Arguably, wood is the most sustainable building material there is, if it comes from properly managed and accredited forests. A sustainably managed forest includes a long-term vision which considers everything a forest provides, including ecological and social benefits. As well as sequester carbon, forests help ecosystems and biodiversity thrive, and improve the quality of drinking water in their vicinity.

Social benefits include the pure beauty of the landscape forests provide, and any type of leisure activity within the forests, such as hiking. When trees are harvested in a sustainably managed forest, new trees are planted to start the cycle of growth anew. Sustainable forestry halts deforestation and ensures the long-term supply of wood.

## Thinning is winning

To grow a sustainably managed forest it must be thinned. This process is necessary to provide the space the trees need to continue growing to an adequate size and quality. Thinning happens at different times depending on the type of tree grown in the forest. While trees grow, they gradually take up more space and resources. Hence, some trees need to be removed for others to be able to grow - thinning. Almost all wood purchased by Junckers comes from trees that are removed during a thinning process. This has been the case since 1930 when the company was founded on a philosophy of resource optimisation by Flemming Juncker who looked for new fields of application for wood left in the forest.

Curious to learn more about sustainably managed forest and thinning? Watch the video and grow your knowledge

**FOLLOW  
THE  
TREE**

The story of  
carbon in trees



Wood for Good

# Time for Timber

SARAH VIRGO

CAMPAIGN MANAGER, WOOD FOR GOOD



Our message is simple. Wood is good, for a myriad of reasons. We want to ensure specifiers and designers understand these reasons so that we can make wood a first-choice material in construction and support our forestry economy.



Wood for Good is the UK timber industry's leading promotional campaign, advocating for design and construction with wood through the support of changemakers in the industry. We are delighted to include Junckers A/S in that list.

## Wood is Good for fighting the climate crisis

In 2020 we launched a messaging campaign, Wood CO<sub>2</sub>s less. The purpose was to show how wood can help us to combat excess CO<sub>2</sub> in our atmosphere, a major contributor to climate change. It is based on key facts:

- 1) Trees sequester and capture CO<sub>2</sub> from the atmosphere as they grow and store it as carbon. Once harvested, that carbon is stored in wood products.
- 2) More trees are planted to replenish forest area harvested, and more CO<sub>2</sub> is sequestered.
- 3) By using wood products, carbon is displaced as wood replaces other more carbon-intensive materials that may have been used.

## Wood is Good for health and safety

As with all timber joinery products, timber flooring brings a range of health and wellbeing benefits. Research shows that exposure to wood in homes helps to reduce stress, promote connectivity and creativity, and lower blood pressure. A study conducted in 2010 in an Austrian school compared 'timber' classrooms versus 'standard' classrooms. The children in the timber classroom had their heart rates lowered by up to 8600 heartbeats per day. The same study also found that timber in beds helped people sleep better and reduce heart rates by 2700 beats per night.

For allergy sufferers, hardwood flooring is also often cited as the best and healthiest solution. It doesn't hold on to dust mites, mould or mildew. (It's also much easier to keep clean!)

Read more

[woodforgood.com](http://woodforgood.com)

**Wood CO<sub>2</sub>ts less**

**The timber guide to a circular economy**

**Wood** is a natural building material. It can be reused and recycled and is instrumental to the circular economy.

**Circular Economy principles:**

- Design out waste & pollution
- Keep products and materials in use
- Regenerate natural systems.

Use **renewable, reusable, non-toxic** resources as materials & energy.

The **Circular Design Guide** offers advice and an abundance of free resources to encourage discussions around the concept.

The **Cradle to Cradle (C2C) Framework** helps to create new products more efficiently and more sustainably that don't compromise the environment.

The timber **Lifecycle Database** is based on Lifecycle Assessments (LCA) and Environmental Product Declarations (EPDs) of generic UK wood products.

## Wood is Good for a circular economy

Wood also has the advantage of fitting neatly into a circular economy. That's because wood is easily repaired, reused and recycled. When a wood product does come to the end of its useful life, trees will have already been re-planted to replace the tree originally used in the product.

As with any material, when protected and treated correctly, timber will last for years. Many timber merchants will provide advice and suggestions for which products can give their product the longest life.

Timber flooring, when compared to alternatives like vinyl, is very hardwearing. Hardwood flooring can be sanded down and restored several times before needing replacement, giving it an extended lifecycle, whereas carpet tends to be replaced every 7-10 years. This means less material waste in our landfill, leaving less of a mark on our planet.

## What does the future hold?

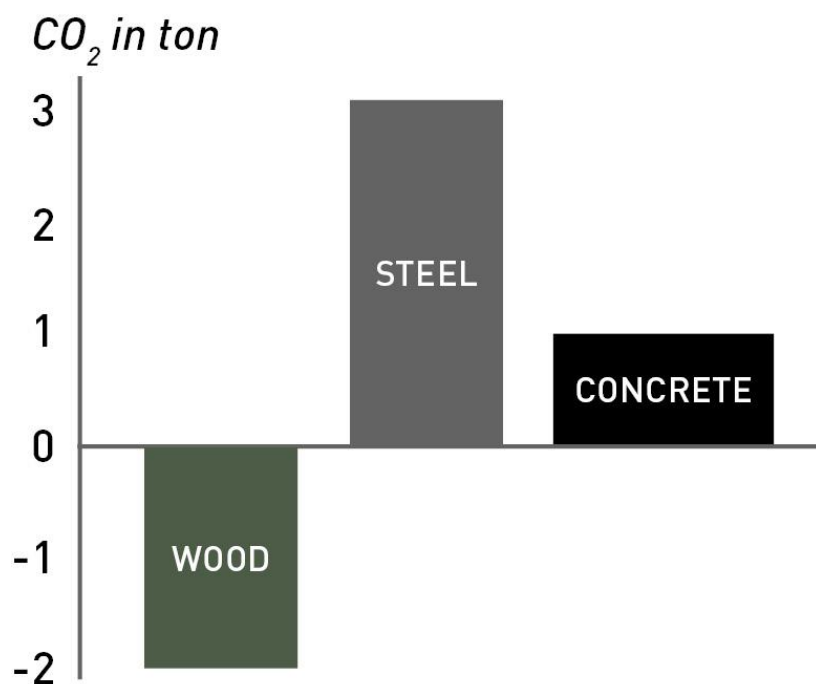
The volume of timber imported in the UK between January and October 2021 was 28% higher than the same period in 2020. Despite this success, we cannot be complacent about promotion of wood. We must continue to harness the positive buzz around wood in the construction and design sector. Thanks to campaigns like Wood CO<sub>2</sub>ts less and Time for Timber, the message that wood and forestry are part of the solution to climate change is being recognised within the construction industry. However, there is still work to be done. The market is predicted to stabilise more this year, but there are still constraints on supply for the timber sector. Conversation is moving on from discussions about embodied carbon in buildings to circularity. We must ensure that we are promoting timber's inherent circular properties to keep discussion of wood at the forefront. It's why, going forward, Wood for Good will be promoting messaging around circularity even more. It is through collaboration and working with supporters such as Junckers that this work can be made even more successful.

# Wood is the greenest choice

In contrast to concrete and steel, the other most widely used construction materials, using wood is good for our climate. Wood comes from a renewable and sustainable source. A single mature tree absorbs carbon dioxide at a rate of 54 kilograms per year. In one year, a hectare of forest can absorb twice the CO<sub>2</sub> produced by the average car's annual mileage. With that 54 kilograms decrease of carbon in the atmosphere, the risk of climate change decreases drastically.

Building materials such as concrete and steel emit a lot of CO<sub>2</sub> during production. Instead of emitting CO<sub>2</sub> wood absorbs it while growing. This infographic offers a clear visual representation of why it is so important to use wood as a building material.

Using wood instead of steel or concrete benefits the climate in two ways. Approximately one tonne of CO<sub>2</sub> is stored in one m<sup>3</sup> of wood. In addition, wood production requires less CO<sub>2</sub> than the production of steel and concrete; an average of one tonne of CO<sub>2</sub> is saved in the production of a similar product made of wood. In this way, using wood saves two tonnes of CO<sub>2</sub> emissions when one m<sup>3</sup> of wood replaces one m<sup>3</sup> of concrete or steel.\*



\*Source: [www.trae.dk](http://www.trae.dk)







## WOOD YOU KNOW?

When trees are harvested in a sustainably managed forest, new trees are planted to start the cycle of growth anew.

Curious to learn more? [Join Junckers here](#)

# A low embodied carbon

Choosing a low embodied carbon floor system and reducing global warming isn't just a nice-to-have. It needs to be addressed for every type of project, from small, residential to large, commercial. Junckers floors can play an important part in net zero buildings.

Every Junckers floorboard is made of strong and durable solid hardwood – there are no synthetic materials which adversely affect the air quality in a room.

## LIFE CYCLE

Junckers floors have an incredibly long lifespan, often in excess of 60 years. A Junckers solid hardwood floor will retain its strength and high quality throughout its life, even if the floor is refurbished many times.

As well as the obvious financial benefits, a floor with a long life cycle is also beneficial to the environment. The longer a wooden floor remains in use, the longer it will store embodied carbon within the product. It will not contribute to landfill, and it will save carbon-generating energy which would have been needed to manufacture and transport replacement flooring.

The reason a Junckers floor has such a long life span is because it can be sanded up to eight or even ten times without losing quality or performance. Each time the floor is sanded and refinished it is given a new lease of life, prolonging its lifespan. This means less waste to manage and ultimately, lower demands on natural resources.

## VERSATILITY

Solid hardwood floors are strong, durable, and versatile. The same hardwood timber is used to manufacture Junckers floors installed at airports and busy shopping centres as for dance studios and large arenas used for world class sport events. Hardwood is a tough, long-lasting surface which is also easy to maintain and repair.

At times we encounter clients who are worried about damaging their floor if they are using it in a new or different way. For example, a sports floor installed in a school hall can also be used for open days or exams without causing damage, despite placing chairs and tables on the floor. A further example is found in community halls, where the owners tend to give their floors a harder time by getting as much use out of the floor as they can. Despite being put through its paces, a solid hardwood floor will last for decades given the proper care and maintenance.

Eventually the floor will show signs of wear and tear, but solid hardwood floors are difficult to destroy and can be refurbished many times over. In the medium-term, the surface will be protected by maintenance coats of lacquer which see off the effects of minor damage and foot traffic for many years.

So do not be too concerned to make use of your hardwood floor. It will take some hard treatment, it is designed to do so, and when the battle scars appear, you can refurbish it... time and time again.

# carbon wood floor

It's not just an issue for professional designers, governments and landmark projects. It's also a concern for residential installations and local community halls to large corporate buildings. It's about carbon building design and reducing global warming.

There are no layers of inferior quality; there is no glue or chemical substances in the flooring and no reliance on fossil fuel derived materials.

## HUMIDITY

Junckers solid hardwood floors cannot delaminate and are designed to work within the normal humidity range for occupied buildings in your region. Whereas some engineered wood floors are known to delaminate or split due to changes in humidity levels.

We know some engineered wood flooring manufacturers recommend no more than a 20% range of humidity for their floors compared with the 30% range recommend by Junckers. This means solid hardwood is more stable than a floor which is limited to a narrower humidity range.

Monitored through strict quality control procedures, our floorboards are carefully manufactured to ensure the wood has a low and consistent moisture content. For our beech flooring, we use our specially developed press drying process which gives our floors:

- Improved dimensional stability - reduced seasonal expansion and shrinkage
- Improved hardness - press drying permanently compresses the wood
- Improved structural strength - simply a stronger floor that will take higher loads
- Improved uniformity of colour

The high level of stability of our floors is demonstrated by the fact that we guarantee them for use with underfloor heating. Every Junckers floorboard is made of strong and durable solid hardwood and a quality design solution based on responsible forestry and certified wood.

## EASY TO RECYCLE

Because Junckers floors are made of pure solid hardwood, they are easy to recycle. You can reuse planks from solid wood floors in many different ways. If the planks are still in good condition, they can be reused as flooring, or as building material for other purposes, such as wall cladding, cupboard doors, tabletops or more. If the floor has reached the end of its long life, the floorboards are biodegradable, meaning they will decompose naturally without harming the environment.

Curious to learn more?

Watch Richard Ayles, UK technical manager, explain why Junckers floors have such a long lifespan

[Click here](#)

# The perfect choice to enhance the light-filled space

When roof window manufacturer VELUX built a new extension at their UK and Ireland head office in Glenrothes, Fife, Junckers solid wood flooring was the perfect choice to enhance the light-filled space.

Over 800 m<sup>2</sup> of Junckers 22mm Beech Harmony two-strip flooring was fitted throughout, forming a unifying surface which links every part of the building, including the impressive entrance, circulation and breakout areas. The contemporary interior uses natural light to full effect, in a perfect demonstration of how VELUX roof windows help create spaces filled with natural daylight, one of the targets of the RIBA 2030 Climate Challenge and an essential ingredient for user wellbeing. A light-coloured floor such as beech reflects a lot of natural light which helps enhance lighting levels, further reducing the need for artificial light, and therefore saving energy. In addition, a pale floor will not contribute to overheating, reducing the need for air conditioning systems.

Ensuring a healthy indoor climate is another important consideration to architects and specifiers, and in addition to fresh air and high levels of natural daylight provided by VELUX roof window products, a Junckers solid wood floor will help achieve a healthy and balanced indoor environment. With a perfectly smooth surface, it cannot harbour dust or mites, and as an all-natural material, wood helps maintain an even temperature in a room and reduces static from any electrical equipment. Junckers' floors hold the Danish Indoor Climate label. This means they have undergone extensive degassing and odour testing to ensure there are no chemical substances in the flooring which may adversely affect air quality. The certification, now recognised by BREEAM, gives specifiers the confidence to specify flooring which will contribute to a high degree of wellbeing in a building.

A hardwood timber, beech is one of the strongest and most durable woods used for flooring. It is a light-coloured wood species which acquires a warm, golden tone with age. The structural grain pattern is straight with a fine, even texture for a classic look.

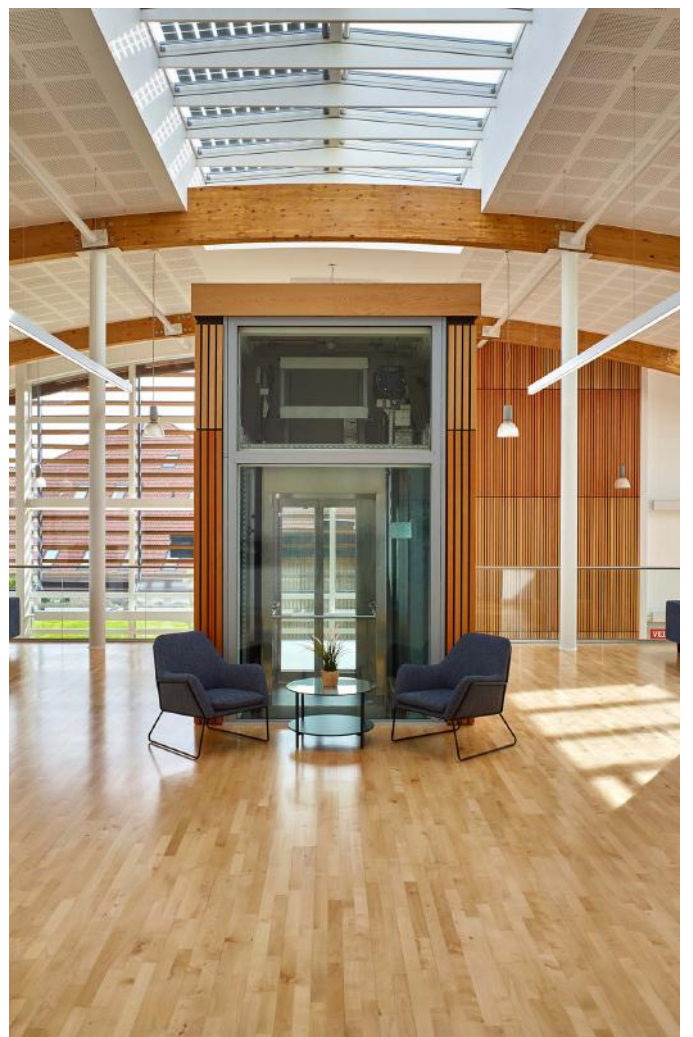
## Details

Wood species: Beech

Location: United Kingdom

Year: 2021







Source: Press release BIG Architects & [www.big.dk](http://www.big.dk)

# Probably the world's first project of its type

The Plus is the world's most environmentally friendly furniture factory in Norway. Probably the world's first project of its type to achieve the very highest environmental BREEAM rating by meeting the requirements for classification as Outstanding. All materials are carefully selected based on their environmental impact and Junckers has been chosen to deliver hardwood solid flooring for the project due to its environmental credentials and EPDs.

Vestre AS, the Norwegian manufacturer of urban furniture and Bjarke Ingels Group (BIG) are the owner and architect behind the world's most sustainable furniture factory tucked in the heart of the Norwegian forest. Envisioned as a village for a community dedicated to the cleanest, carbon neutral fabrication of urban and social furniture, The Plus aims to be a global destination for sustainable architecture and high-efficiency production. As Norway's single largest investment in furniture making in decades, the 6,500m<sup>2</sup> open production facility will double as a 300-acre public park for hiking and camping while serving as a landmark aligned with the region's mission to establish a green manufacturing industry.

The Plus is in the village of Magnor, the geographical midpoint between Vestre's headquarter in Oslo and the company's existing steel factory in Torsby, Sweden. The building is conceived as a radial array of four main production halls – the warehouse, the colour factory, the wood factory and the assembly – that connect at the center. The layout enables an efficient, flexible and transparent workflow between the manufacturing units, thus generating the 'plus' shape at its intersection.

At the center of The Plus is the logistics office and exhibition center with direct connections to all four production halls, allowing Vestre's employees to process logistical traffic with maximum efficiency. The central hub wraps around a public, circular courtyard where the latest outdoor furniture collections are prominently exhibited with the changing seasons. The outdoor plaza doubles as a panopticon for visitors and staff to experience the factory's production processes in full transparency.

The Plus will be the first industrial building in the Nordic region to achieve BREEAM Outstanding, the highest environmental certification. All materials are carefully chosen for their environmental impact, with the façade constructed from local timber, low-carbon concrete, and recycled reinforcement steel. Designed to be a 'Paris Agreement-proof' building, every aspect of the design is based on principles of renewable and clean energy to match Vestre's eco-friendly production, such as ensuring a minimum of 50% lower greenhouse gas emissions than comparable factories.



Bjarke Ingels, Founder & Creative Director, BIG Architects

*"With Vestre we have imagined a factory that is simultaneously front of house and back of house. The beauty of the factory is the clarity of its organization. Conceived as the intersection of a road and a production line it forms a large plus connecting everything to everything. The radical transparency invites visitors and hikers to enjoy the whole process of manufacturing while providing the workers the thrill of working in the middle of the forest."*



From all four sides of the buildings, visitors and staff are invited to hike around the facility and conclude on the green roof terrace, transforming the furniture factory museum into a campus in the woods. An ADA-accessible ramp allows wheelchairs and strollers to meander the serpentine path and enjoy the immersive experience of being among the pine trees.

The Plus reinforces Vestre's vision of combining social and democratic spaces with a future enriched by technology yet grounded in history and nature. On the rooftop, 1,200 photovoltaic panels are placed and angled according to optimal solar efficiency. Excess heat from the panels is connected to an ice-water system for cooling, heat and cold storage tanks, heat pumps and energy wells as a storage support system. Overall, the system contributes to at least 90% lower energy demand than that of a similar conventional factory.

## Details

Architect: BIG

Wood species: Beech

Location: Norway

Year: 2022

Read more

[theplus.no](https://theplus.no)

# An Unusual Building

The Braunstein Taphouse, home to award-winning Danish malt whisky, is not just a beautiful building, it's been designed and built to have ability to be disassembled. Its waterfront location is deemed under threat from rising water levels in the future, which lead Adept Architecture to create a building that can be taken apart and rebuilt or easily reused/recycled.



The building uses as few materials as possible, among them Junckers Textured Oak two-strip hardwood flooring. The structure is based on simple tectonic principles, completed with mechanical joints only. As far as possible, building materials used in the construction are not mixed, allowing for removal without contamination and reducing the volume of waste considerably in comparison to similar constructions.

Located in a part of the harbour which is part of the city's climate adaption strategy, the Taphouse is designed to function as a visitors' centre for Braunstein Brewery over the next decade. Then, depending on rising sea levels, it may have to be removed or moved to a different location. To accommodate the possibly temporary lifespan, the building has been designed for disassembly. It can be taken apart and rebuilt, or all materials can easily be recycled.

The building houses both a café and a restaurant as well as large event spaces that can be used for private functions and by local community groups. The brushed, tactile surface of Junckers Textured Oak floorboards are part of a limited material palette, where both interior and exterior have strong maritime influences. The juxtaposition of steel, accoya and solid hardwood in a rustic finish all contribute to an industrial look, perfectly at home in the harbour.

Committed to offering full environmental credentials, Junckers has completed EPDs for its solid hardwood flooring, the company is certified by the Danish Indoor Climate as well as PEFC™ and FSC® and has a BRE Green Guide A+ rating.





BUILDING OF THE YEAR 2021

Braunstein Taphouse won the commercial category in the Danish Construction Awards which honours buildings with social and architectural significance.

## Details

Architect: ADEPT

Wood species: Oak

Location: Denmark

Year: 2019

Read more

[braunstein.dk](http://braunstein.dk)

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