

# MOR

[www.egger.com](http://www.egger.com)

**MORE FROM WOOD.**



EGGER Group Customer Magazine

13



## A classic with a future

Focussing on a material that inspires people  
to achieve more together.

### TRUST YIELDS SUCCESS

How logistics are focussing on digital and analogue  
creativity to work more efficiently.

### WHAT ABOUT THE FOREST?

New concepts wanting to make the tree world  
fit for the future.



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## WELCOME TO LEXINGTON

After two years of construction, our leap across the pond is complete! The new site in Lexington, North Carolina (USA), begins operations. Getting to this stage was a logistical tour de force. 40 suppliers from eleven European countries had to be coordinated to ship a ContiRoll, two short-cycle presses, a crane and high-bay racking on schedule to the USA in a total of **1500** containers. During construction, 5500 people worked on the project.









# EGGER REPRESENTS THE SPIRIT OF INNOVATION AND TRADITION – LET’S LOOK FORWARD TO THE FUTURE TOGETHER.



The past year has presented us all with new challenges. There is hardly a business area that has not come under pressure from the pandemic and the resulting restrictions. But times of crisis also have their good points. They force us to reassess our priorities and adapt our actions to the new circumstances.

It is still too early to draw any conclusions. However, it is already apparent that reliable partnerships and the courage to innovate remain the cornerstones on which our self-image as a Group rests. This applies all the more in 2021, the year in which EGGER turns **60**. And will also apply in future. In 1961, Fritz Egger Sr opened the first chipboard plant in St. Johann, Austria. His first load of timber was delivered to him by the grandfather of Hannes Buchsteiner, who now works as EGGER’s regular freight forwarder, coordinating 125 tractor units and 200 semi-trailers every day. Flick to our Solutions section to read how this long tradition sowed the seeds for a successful and innovative story.

Wood – it is our business and our passion. “More from wood” is our motto. And so we are not looking back nostalgically, but excitedly towards the future. In the cover story, we learn how well the classic material wood is prepared for the 21st century. In an interview, futurologist Reinhold Popp explains why we cannot see into the future, but can still prepare for it. We are already doing this in our laboratories, for example, where we have now developed over 20 alternative binding agents. And we’re still researching further. Read more on this topic in this issue.

We’re continuing to grow without forgetting our roots. Why not see for yourself? We hope you are inspired by this issue!

EGGER Group Management

A stylized, handwritten signature in black ink.

**Walter Schiegl**  
(Production / Technology)

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**Thomas Leissing**  
(Finance / Administration / Logistics)

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**Ulrich Bühler**  
(Marketing / Sales)









## TRADITION AND FUTURE

The 10-metre high and 30-metre long bamboo pavilion designed by Zuo Studio for the World Flora Exhibition in Taiwan is reminiscent of the Chungyang Mountains, the largest mountain massif on the island of Taiwan. The walk-in object in Huludun Park combines traditional craftsmanship and innovative concepts of sustainable material use. **320 bamboo plants** were used in the construction of the pavilion by local craftsmen. With the construction the architects also want to point out the sustainable quality of bamboo as a building material.

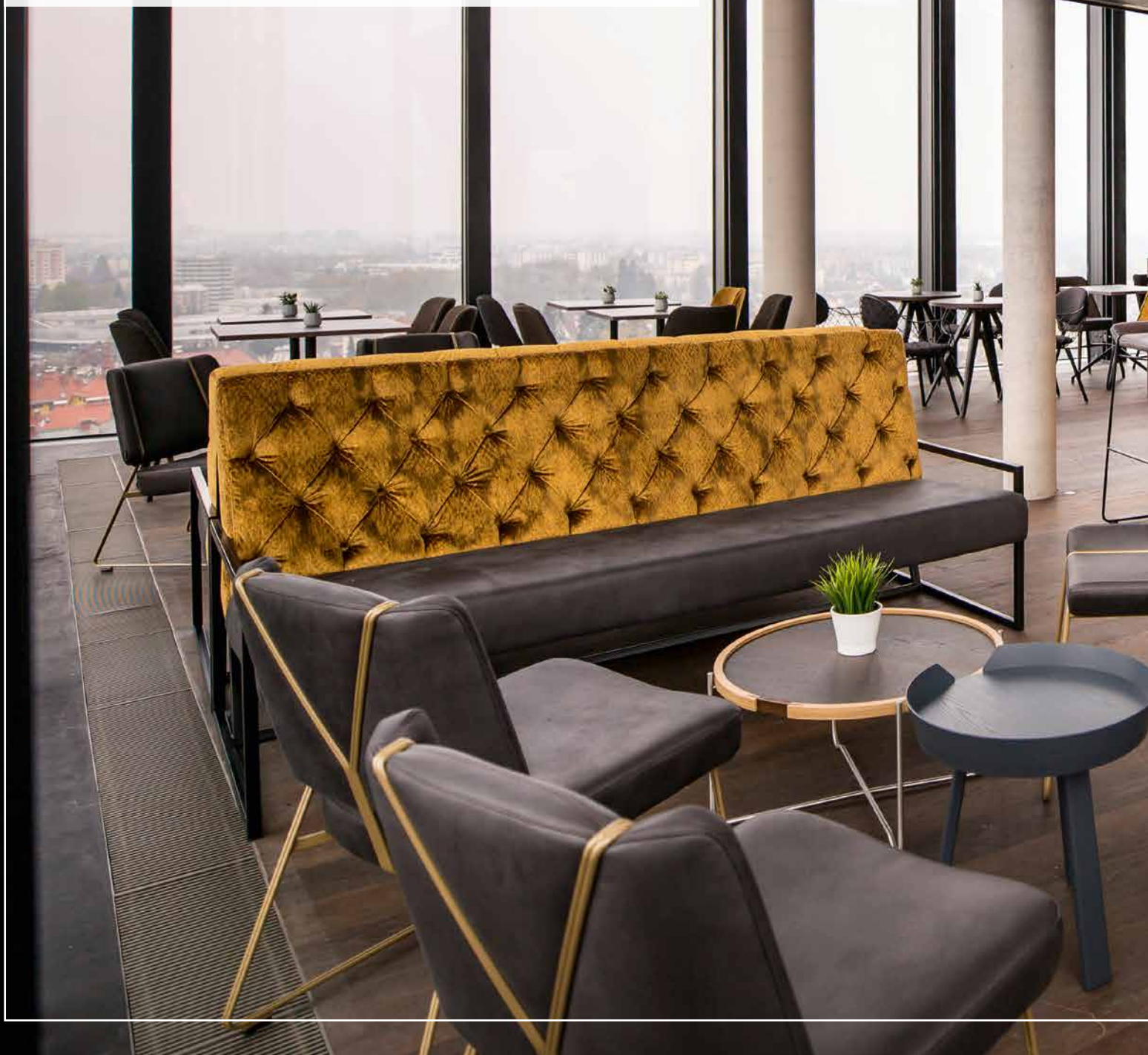
[www.zuostudio.com](http://www.zuostudio.com)



## ARTISTIC DESIGN FOR SALZBURG

A new top destination for tourists has opened at the main railway station in Salzburg: the arte Hotel focuses on simple, urban elegance and high-quality materials. And EGGER supplied the products required. The matt MDF lacquered boards and Topmatt laminates from the **PerfectSense** range lend rooms an elegant design without seeming forced. To ensure perfect transitions and finishes, the lead interior design office based in Vienna – Derenko – also had matching edging made.

[www.derenko.at](http://www.derenko.at)



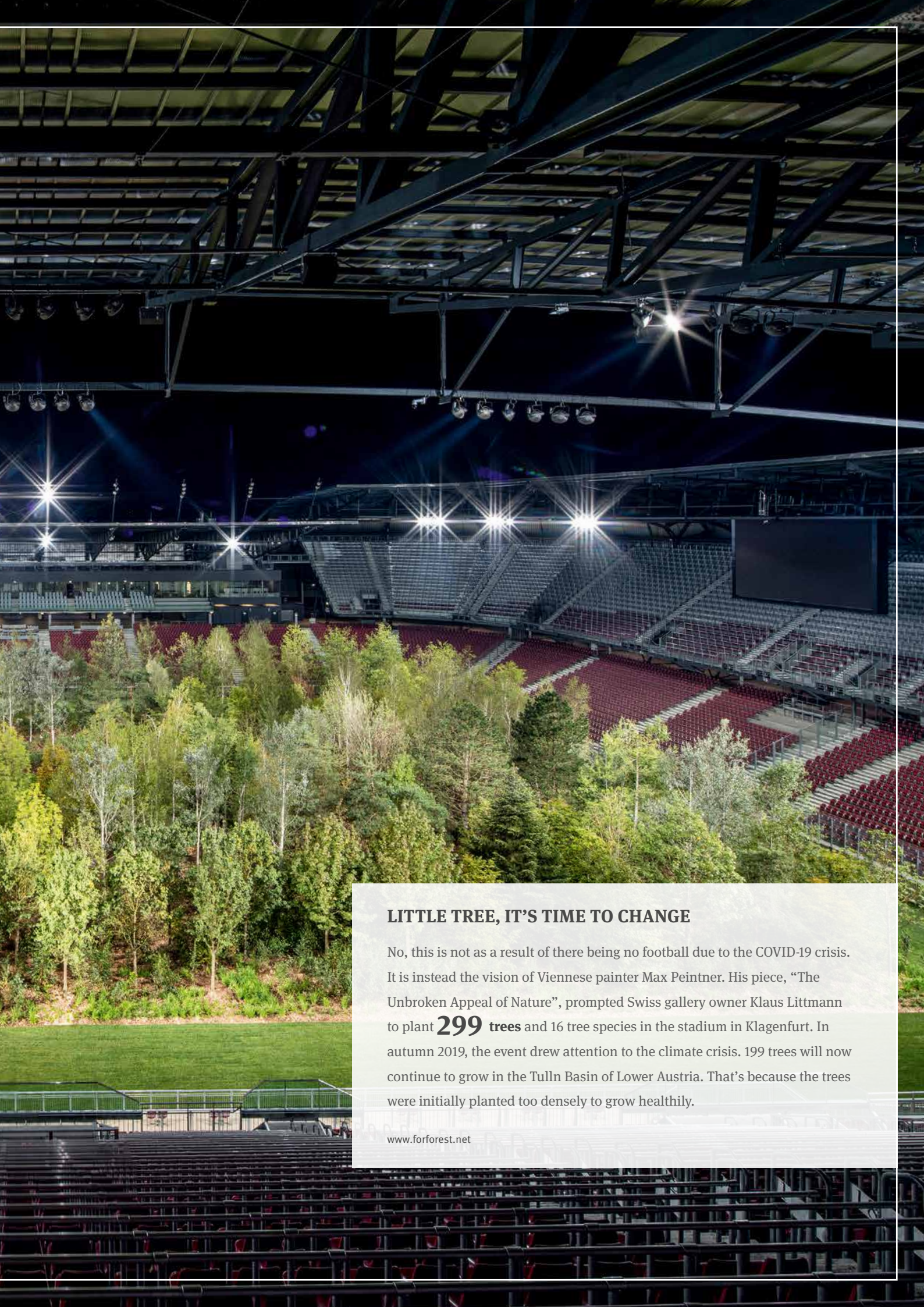












## LITTLE TREE, IT'S TIME TO CHANGE

No, this is not as a result of there being no football due to the COVID-19 crisis. It is instead the vision of Viennese painter Max Peintner. His piece, “The Unbroken Appeal of Nature”, prompted Swiss gallery owner Klaus Littmann to plant **299 trees** and 16 tree species in the stadium in Klagenfurt. In autumn 2019, the event drew attention to the climate crisis. 199 trees will now continue to grow in the Tulln Basin of Lower Austria. That’s because the trees were initially planted too densely to grow healthily.

[www.forforest.net](http://www.forforest.net)





# E\_ INSPIRATION

“We’re now going back to the material  
we used to use because we’ve realised  
wood has always been the better  
material in many ways.”

Céline Montanari, Royal Institute of Technology, Stockholm (pages 12 to 17)

# Ideas for tomorrow



## SMART TRANSMITTER MAST

[www.uni-kl.de](http://www.uni-kl.de)

Mobile streaming, augmented reality, autonomous driving: in an increasingly digitalised world, a wide network of 5G transmitter masts is becoming ever more important. Christopher Robeller's team at the University of Kaiserslautern has investigated how they could also be integrated aesthetically into a modern cityscape. His idea: transmitter masts made of wood. According to the researchers, the natural material blends far more harmoniously into the cityscape than conventional structures made of grey concrete and steel. Furthermore, wood is particularly suitable because it not only binds carbon dioxide, but also generates less CO<sub>2</sub> in production.

## RENEWABLE SENSOR

[www.empa.ch](http://www.empa.ch)

The biocompatible sensors, developed by researchers at the Swiss Federal Laboratories for Materials Testing and Research (Empa) in collaboration with Canadian scientists, lie flexibly on the skin and measure health-related data, such as salt concentration in the blood. This eliminates the need for painful blood sampling. The sensors are manufactured on a 3D printer. The ink is nanocellulose, which originates from wood. Set with nano-silver wires, the material is electrically conductive. As a renewable raw material, nanocellulose is both inexpensive and particularly biocompatible because it is based on natural resources.



## CHARRED FAÇADE

[www.openstudiocollective.com](http://www.openstudiocollective.com)

For this cosy residence in the woods of Washington, the architects from the Open Studio Collective in Portland were inspired by colleagues from the Far East. The builders there processed parts of the façade using the Yakisugi method – a traditional Japanese technique for preserving wood, in which the wood is made waterproof and thus more durable by slightly charring the surface. Cute visual side effect: deep black discolouration makes it seem as though the façade has been painted. The carbonisation caused by charring also protects the wood from insects.



# A classic

The "Eames Lounge Chair" (1956) is a modern classic. Its organic shape goes back to experiments on forming plywood commissioned by the US Army.



# with a bright future

Wood is a material that has accompanied people from the very beginning.

Looking at a material without which the past would not exist and which helps us to make the future better.

AUTHOR Nils Bröer



## OVERVIEW OF THE TOPICS

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- 42 – 45 The future of trees: an  
inventory on the future use  
of the forest

“To man, wood is the most humanly intimate of all materials,” wrote American architect Frank Lloyd Wright in 1928: “Man loves his association with it, likes to feel it under his hand, sympathetic to his touch and to his eye.” It’s true, wood accompanies us in our daily lives like no other material. The dining table where we start our day, the shelf in the office, benches in the park, Glenn Gould’s piano. The idea that wood is a classic is obvious. Nevertheless, that notion falls short because wood is so much more than that.

The “organic architect”, as Lloyd Wright was known, is a good example of the attempt made to combine tradition and modernity. His “Fallingwater” house is one of the most important buildings in modern times. And wood plays a very important role here. The material is a constant found throughout construction

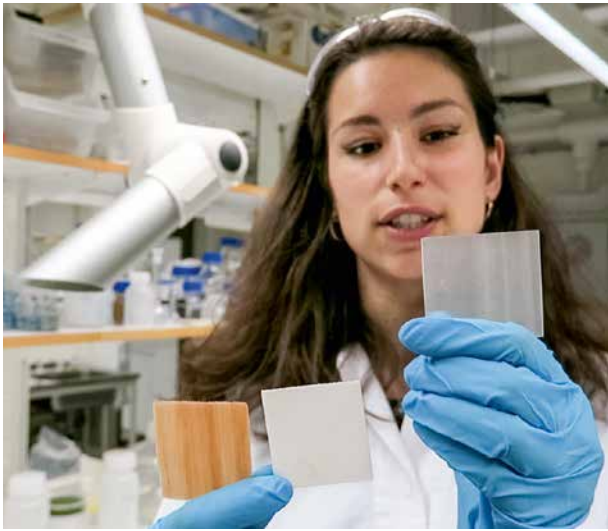
history. It ensures that our fascination for the natural and the genuine is preserved – despite all the innovative spirit.

## The human being and wood

The material has always inspired thinking and the horizon of human creativity: “The relationship with wood is part of human nature, the examination of wood as a material is a fundamental element of human history, as well as the history of human craftsmanship,” writes Joachim Radkau. The scientist became known thanks to his work on the history of technology. For what do we think of when we want to tell our species’ story from the very beginning? Our ancestors’ wooden huts, hunting equipment and household appliances. The Iceman’s tools contained no less than 17 different







Transparent wood measuring 10 × 10 cm. Céline Montanari is currently working on upscaling the new material at the Royal Institute of Technology in Stockholm.

**“In the end, industry must change its production techniques so that wood is at the fore.”**

Céline Montanari, materials scientist

→ types of wood, each of which was used according to its specific properties. Without wood as a material, our history would be completely different.

### Wood is a classic for all!

The history of innovation of modernity, milestones in furniture design, the home environments in which we live: they would be unthinkable without the material wood. Designers, material scientists and architects conduct research on this interdisciplinary material. Innovations in processing lead directly to further usage developments: designer couple Charles and Ray Eames, commissioned by the US Army during the Second World War, first experimented with a plywood moulding technique to perfect leg splints for disabled veterans. In 1946, they used the same technique to create the “Plywood Group”, modern seating classics that still fascinate us today because the backrests seem to adapt organically to the shape of the human body. Wood is a material that makes classics possible.

When sociologists describe the structure of modern societies, they like to speak of functional differentiation. This means that specialised sub-sectors, such as the economic or legal system, make their – in other words, functional – contribution to ensuring that the system as a whole continues to develop in an increasingly sophisticated and efficient manner. For modern industrial production, this

means that excellence results from the division of labour. The same is true for wood research: it is no longer only craftsmen and architects who are advancing the material, but also high-tech scientists who are providing us all with a new perspective on what we can achieve with wood in our everyday lives.

### Harder than glass and concrete

“More from wood” – EGGER’s corporate motto also underlies this wood research. At present, new methods in materials science are being applied so intensively to the material itself that they will change our understanding of the material forever. By modifying at the nano level, researchers have succeeded in optimising wood in such a way that it acquires completely new properties and becomes harder than concrete and glass.

At the Royal Institute of Technology (KTH) in Stockholm, Céline Montanari is working on making wood transparent within the Department of Fibre and Polymer Technology. The patent for the high-tech material was filed in 2016. Upscaling work is currently in progress. In the laboratory, work is focussing on the substance – quite literally. It all starts with delignification, a process we all know from paper production. It involves removing the lignin from the wood. In other words, the substance that holds the wood fibres together. The resulting residue is an unstable white material of cellulose and hemicellulose.

The empty cell chambers can then be filled with a high-tech monomer. This causes the wood to become translucent: “Anyone who has ever poured olive oil on a handkerchief will have an idea of what the result looks like,” says Montanari. The material is polymerised under heat and is three times harder than glass. Furthermore, the mechanical and thermal advantages of wood remain. The bottom line is that Transparent Wood insulates ten times better than glass and is significantly more shatterproof: “It doesn’t crack, it splinters – like wood,” Montanari enthuses. The material is not completely transparent. Instead, it is reminiscent of milk glass. The translucent light is diffusely distributed throughout the room and does not radiate into the room as if bundled through glass.

#### DELIGNIFICATION

1. Natural, untreated raw material wood.
2. Delignification: all the lignin is washed out.
3. Compaction: the cellulose structure is compressed and the cavities are compacted.



For her master's thesis project entitled "WhiteWood" at the Lucerne School of Art & Design, designer Meri Zirkelbach spent two years researching areas of application for delignified wood in collaboration with materials scientists at ETH Zurich. This bicycle helmet is one of her designs.

The young scientist sees this as an advantage: "Transparent Wood provides a maximum of natural light and helps to save electricity and heating costs since the material can store the warmth from sunlight during the day and release it again in the evening."

#### Transparent wooden windows

Architects are already interested in using the material in skylights to diffuse light into the room. "However, Transparent Wood can be used in principle wherever we need the excellent properties offered by wood and want to avoid other materials," says Montanari.

The material's optical properties also predestine it for use as a cover layer for solar cells, where the widely scattered light diffusion ensures maximum energy yield. Montanari is currently considering making the Transparent Wood glow: this could be achieved by introducing quantum dots – a nanoscopic material structure, usually made of semiconductor material and also used in LED technology – into the material.

When irradiated with certain light waves, Transparent Wood itself could then be illuminated. The scientist is excited: "Quantum dots are so cool, I've just got to say that." Montanari expects a marketable product within the next ten years. That's a short period of time to establish a completely new material. After all, the demands on industrial production are immense: "In the end, industry must change its production techniques so that wood is at the fore."

High-tech wood at nano level also provides the basis for the "Nano Cellulose Vehicle (NCV)", which researchers from Kyoto University are leading the way in developing with 20 partners on behalf of the Japanese Ministry of the Environment. The futuristic sports car consists of







A new wood-based material:  
nanocellulose fibres, diameter:  
20 nanometres.



Parts of the body and  
interior of the “Nano  
Cellulose Vehicle (NCV)”  
are made of the wood  
fibre composite material  
cellulose nanofiber.



2500 apartments,  
60,000 m<sup>2</sup> of office  
space and 90 shops will  
be housed in buildings  
made of wood in the  
Masthamnen district of  
Stockholm.



Frank Lloyd Wright designed “Fallingwater” so that the building fits organically into its surroundings. The waterfall should be an integral part of the life of those who live in the house.



→ 20 percent wood or rather a composite material called cellulose nanofiber. With a diameter of 20 nm, the fibres of this wood-based material are one million times smaller than the wood fibres found in wood chips. The resulting material is five times stronger than steel despite being one fifth of its weight. It's no wonder that the first study at 1050 kg unladen weight is around 525 kg lighter than the similarly designed Lamborghini Aventador. However, the Italian supercar is likely to easily outpace the bio-based Japanese vehicle right now. The hydrogen-powered, eco-racer can only reach speeds of 20 km/h.

Just as the material has always determined the outcome of our actions, technology and production logic have changed more and more. Now we've reached the point where we can reconcile the two. The genuine and enduring quality we value in wood becomes the essence of modern industrial production, which literally makes “more from wood” and provides an answer to the most urgent questions of our time: how can we make our world

sustainable through innovative products and efficient management? Wood is a classic, yet wood is also a driver of technology.

In the district of Masthamnen in Stockholm and the district of Fælledby in Copenhagen, new wooden districts are being built. In France, public buildings are to comprise at least 50 percent wood from 2022. At the base of Mount Fuji, the Toyota Group, together with the Danish star architect Bjarke Ingels, is planning the “Woven City” over 175 hectares, a fully networked eco-system in which scientists and residents will research in an urban laboratory how we will live in the future – in buildings made of wood.

“We're now going back to the material we used to use because we've realised wood has always been the better material in many ways,” says Céline Montanari. It is likely that the material will be used in the future as an ultra-light alternative in space travel and aircraft construction. One thing is certain: the material has even more

potential. For it to be used in new contexts, people from the most diverse disciplines must work even more closely together. In the working world of the 21st century, where collaboration is at the forefront, wood is the ideal material: its material logic demands us to become better and better – together. “Wood is far too valuable to simply throw it away” – this statement is even more valid today than ever before.

1858

Azel Storrs Lyman (US) applies for a patent for a fibreboard.

1887

Ernst Hubbard (DE) patents "artificial wood" made from wood flour and albumin glues.

1905

Invention of the first "flakeboards" in the USA.

1926

Karl Freudenberg (DE) patents a board made of wood shavings and glue of that era.

1932

Max Himmelheber (DE) invents chipboard and develops its industrial production.

1934

First industrial plants in the USA for boards made of sawdust and wood shavings.

1935

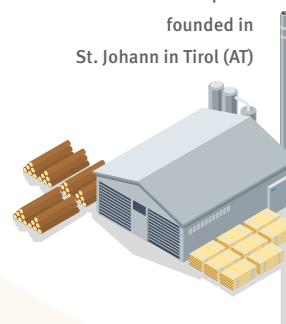
First OSB patents in France and Japan.

# A material's career

Reducing the use of raw materials, expanding the potential of wood: these are the goals driving wood technology.

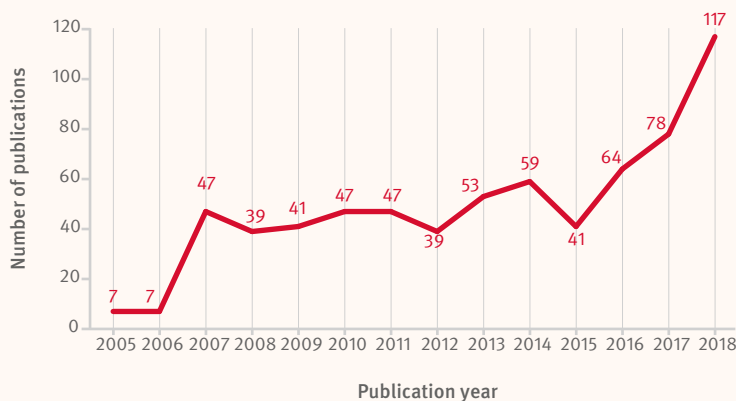
1961

First EGGER plant founded in St. Johann in Tirol (AT)



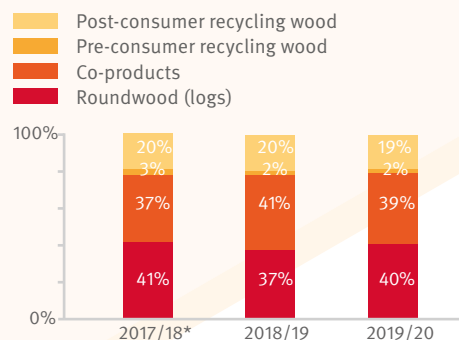
## PATENT DEVELOPMENT SINCE 2005

Wood-based materials are subject to continuous further development, as shown by recent worldwide patent applications.



## RECYCLING MIX IN THE WOOD USED

Twelve of the EGGER Group's 13 chipboard plants integrate the recycling of waste wood.

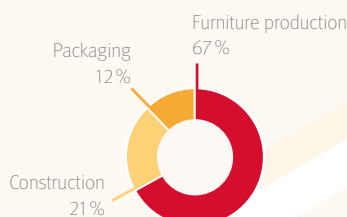


\* Due to rounding, the total is 101%.

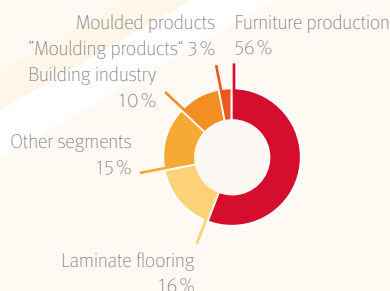
## WOOD-BASED MATERIAL CONSUMPTION 2018

What are chipboard, MDF, HDF and OSB used for? An overview using Europe as an example.

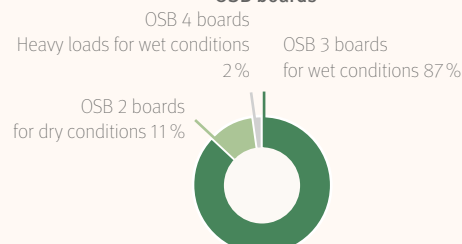
### Chipboard



### MDF/HDF boards

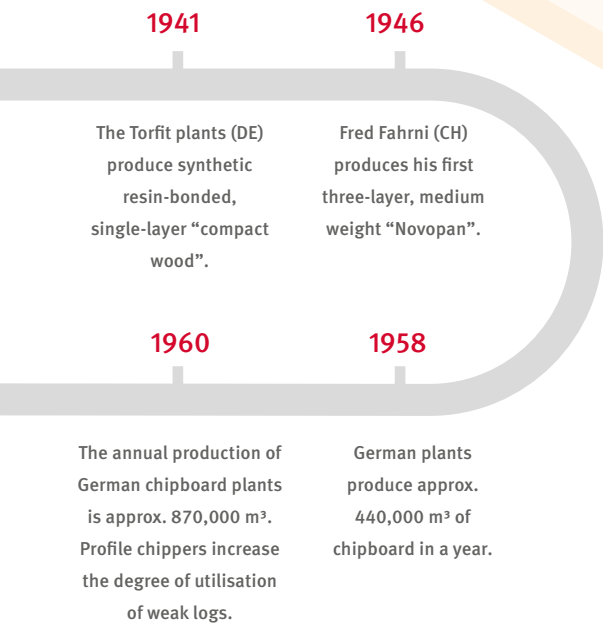


### OSB boards

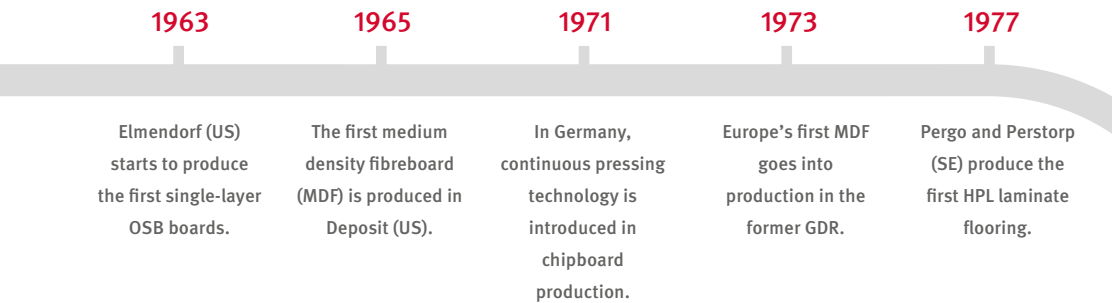
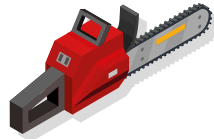


“ If chipboard had not yet been invented, it would have to be invented in response to the European Commission’s New Circular Economy Action Plan.”

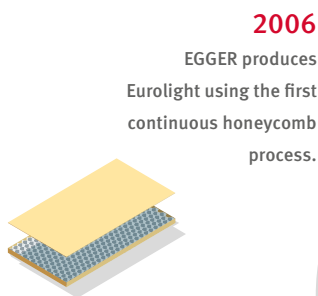
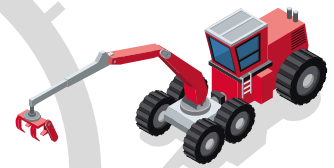
Anemon Strohmeyer, Managing Director of the Verband der Deutschen Holzwerkstoffindustrie (VHI), April 2020



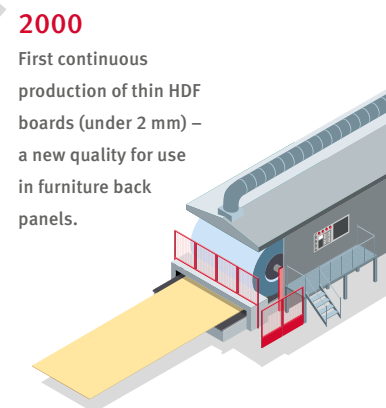
**1950**  
Chainsaws revolutionise forest work.



**1980**  
Germany formulates guidelines for limiting formaldehyde emissions. <sup>1</sup>  
—  
More fully harvested trees make forest work more efficient and cutting-edge.



**2003**  
Japan introduces the strict F\*\*\*\* limit value for formaldehyde emissions from wood-based materials. <sup>2</sup>



**2007**  
Global production of wood-based materials (excluding plywood) reaches a volume of around 55 million m³.

**2019**  
A total of around 215.4 million m³ of chipboard, MDF boards and OSB boards are produced worldwide.<sup>3</sup>



215.4 million m³

Sources  
Timeline: “Modern wood-based materials” by Michael Paulitsch and Marius C. Barbu, DRW-Verlag, 2015  
Patent development: Derwent Innovation  
Recycling mix: EGGER Sustainability Report 2018/2019  
Wood-based material consumption: UNECE  
“Forest Products – Annual Market Review 18 / 19”  
<sup>1</sup> DIN e.V.  
<sup>2</sup> Environment brochure “Naturally EGGER”  
<sup>3</sup> European Panel Federation (EPF) “Annual Report 2019-2020”



# “We always have a choice”

What can we learn from the crisis for the future? A conversation with futurologist Reinhold Popp about successful future thinking, utopias and timeless values.

INTERVIEW Till Schröder

**MORE: The topic of the future has been booming for years. The spectrum ranges from science fiction and visionary yet unprovable prognoses through to more or less well-founded “future concerns”.**

**Where does futurology fit in here?**

Reinhold Popp: The future cannot be predicted. On the one hand, however, the basic outlines of important development structures are already emerging, and, on the other hand, our ideas about the future influence the way we live today. On the basis of empirical and theoretical analyses, futurologists use historical and current processes of change to think ahead into the future.

**How does futurology deal with a crisis such as that caused by COVID-19, whose basic features have not been encountered in the past?**

Serious research works with scenarios. These are generally if-then assumptions: “If, in view of a specific challenge, measure A is taken, then the predominantly positive scenario strand X is plausible. If, however measure B is taken, there is much to be said for the negative scenario strand Y.” This enables the necessary differentiation. A pandemic was an example, adopted in several future studies, of a scenario strand that cannot be defined in terms of time, but one that is certainly possible.

**So this crisis could have been predicted?**

In retrospect, in the context of COVID-19 and future-oriented research, I am asking myself why health policy and health systems in many countries were so poorly prepared for a pandemic – despite existing future-oriented simulation studies. This critique points to the connection between foresight and precaution: of course, no one could know which specific virus would spread at what time. But it was sufficiently known that this future would very probably come in the short to medium term and that we would then need protective clothing and masks.

→

Calling for more interdisciplinary dialogue:  
futurologist Reinhold Popp.







## IN CONVERSATION WITH REINHOLD POPP

### ABOUT

#### REINHOLD POPP

is one of the few university lecturers in the German-speaking world who systematically deal with future-oriented research. Several of Professor Popp's publications are regarded as reference works of German-speaking futurology. Before his engagement at universities in Vienna and Berlin, he led renowned institutes for future-oriented research.





Reinhold Popp lives in Salzburg (AT) and researches at the Sigmund Freud Private University in Vienna (AT).

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**» Above all, the quality of a manager is shown during a crisis. «**

**Reinhold Popp**, futurologist

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→ **You draw a distinction between precaution and foresight. What makes foresight so difficult?**  
 Future-oriented sciences are related to historical sciences. These findings show that a given historical event rarely has one single cause. Therefore, we should not give in to our tendency towards monocausal thinking with regard to the future. We already made this all too human error of reasoning before the COVID-19 crisis, when we derived the forecasts for the future of

our working and living world from a single phenomenon: digitisation. Such extremely simplistic forecasts cause us to lose sight of the diversity of our lives.

**Doesn't every expert only have an eye for the causes he or she understands?**  
 From the perspective of reputable future-oriented research, the cooperation of interdisciplinary teams is indeed recommended. These teams would be able to produce scientifically sound scenarios on complex future

issues that take into account both the positive and negative consequences of a crisis.

**The situations in which management teams have to make decisions today are often complex. How does successful future thinking work?**

Almost all personal decisions are based on more or less well-thought-out opinions about the opportunities and risks in the future game of life. This raises three central questions about the future: What's coming? What will be left? What will go? Human thinking about the future is, of course, never only influenced by the results of rational analysis, but inevitably also by emotions, unconscious motives and moral attitudes. From a psychological point of view, it also makes sense to not only think about an ambitious dream goal when planning the future, but also to consider milestones and overcoming possible obstacles.

**Realists like to dismiss "dream goals" as "utopian". Has utopia had its day?**

When Thomas More wrote the famous novel "Utopia" in 1516 and thus coined the term "utopia", which is widely used today, most people's living situation was extremely precarious. Our living conditions today were – at that time – considered an unattainable and unimaginably luxurious dream of the future. Nevertheless, even today utopias have not become superfluous, and on closer inspection, utopian wishes for a better future play a very important role in our modern life as well.

**In what way?**

One thinks for instance of the utopian promises of religions and esotericism, or of the utopian traditions of political parties, which are admittedly no longer easily recognisable in everyday life. In this context, we should not forget that the achievements of democracy, the welfare state or even the European Union are the gratifying results of

earlier political utopias. Today's social movements are also about great utopias, such as the "Fridays for Future" and peace movements. A great many people also believe in technical utopias, for example that robots will rule the world in the future or that laboratories in Silicon Valley will soon succeed in producing high-tech supermen who will live forever. These approaches are very influential utopias. Digital surveillance of the Chinese society also has utopian aspirations. A utopia more in keeping with the West, on the other hand, would be "digital humanism", about which we unfortunately talk far too little.

#### **Can you briefly explain digital humanism to us?**

This approach was formulated by the Munich-based philosopher Julian Nida-Rümelin. In essence, he welcomes digitisation as good and important – provided it serves humanitarian development and a free society. After all, not everything that is technically possible must be done. Decisions on the use of machines must be made on the basis of good ethical considerations. We've always got a choice! In reproductive medicine, that's what people do.

#### **Why is it important for companies to deal with the topic of utopia?**

In economic life, the importance of utopias should not be underestimated. A closer look behind the concrete mission statements issued by individual companies reveals a utopian work of art. This includes the hope for a democratic labour and economic policy, for continuous and at least moderate economic growth, for open borders in a European economic union, for a world economy characterised by peaceful coexistence and functioning trade agreements, and so on. Continuing this success story is by no means as self-evident as we like to believe when the global economy is running normally. Crises that recur at regular intervals – most recently the pandemic, which

unfortunately is still continuing – are also an indication of this.

#### **How will the crisis change corporate governance in the future?**

I assume that neither our behaviour nor our circumstances will change as profoundly after the coronavirus crisis as is often assumed at present. Apart from the above-mentioned relativization of the exaggerated assessment of digitisation, the challenges facing the working and business world before the coronavirus crisis will not change significantly. This also applies to the quality criteria demonstrated by good management. Those who managed their companies prudently before the pandemic will also have a good chance of steering them through the crisis-related dip. Above all, the real quality of

a manager is shown during a crisis and on the arduous way out of that crisis. In this difficult phase, a productive mix of future-oriented competencies is required. The ingredients include business and economic knowledge, humane management, realistic foresight, targeted precautions, staying power and vigilant composure.

The invention of Utopia: woodcut of the island Utopia from the first edition of the novel of the same name by Thomas More (1516).







# E\_SOLUTIONS

“The caravan is only ready  
for a journey when it is well  
prepared – this is something  
we work on every day.”

Rainer Brandauer, Chief Logistics Officer EGGER Group  
(pages 30 to 33)

# We Are EGGER

## LUCIE RICHERT

Certification Project Manager, Wood Purchase, Rambervillers (FR)

Being part of something bigger – this motivated the young forester Lucie to apply to the EGGER Group in 2019. Within her team, she now holds a newly created position as Project Manager. This includes monitoring the certification of wood purchasing for the two French EGGER plants in Rambervillers and Rion des Landes and continuously improving it. “I am in close contact with my colleagues around the world, discussing best practice models with them and exploring how I can drive forward the digitisation of wood purchasing.” She is currently particularly concerned with tracking certified timber volumes and digitising quality control. “Networking is essential and an important source of inspiration for my daily work.”



## YULIYA KUKSHAUS

Log Yard Manager, Gagarin (RU)

Things get rough at the log yard. Thundering trucks deliver piles of logs, and chainsaws screech during quality control. “My 40 members of staff are busy receiving the raw materials and sorting them for the respective chipper,” says Yuliya, who first worked as an assistant to the Production Manager in Gagarin and then managed the translation office. When her boss asked her five years ago whether she would dare to lead the eight employees, 16 wheel loader drivers and eight employees at each of the two chipping plants, she did not hesitate for a moment: “I wanted to develop myself further. And even though it wasn’t easy to assert myself as a superior in this male-dominated environment, I have no regrets.” She loves her varied work in the log yard and the team spirit shown by her dedicated colleagues.

## PETER KLINGLER

Head of Material Planning, Decorative Paper, St. Johann in Tirol (AT)

Peter says he is “practising for retirement” while working his current 23-hour week at the main plant in St. Johann. He will continue to be responsible for the material planning of decorative papers, although he already semi-retired in March 2019. Who else would do it? When EGGER started producing decorative papers in 1999, he was the sole planner for two lines for a long time. He was only joined by a colleague when the third line became operational. And who will take over this task when he retires in March 2021? “Since June, I have been introducing a young colleague to our suppliers to ensure a smooth transition.” And what about himself? “I won’t get bored. My wife, children and granddaughter are already waiting for me!”



# Solutions thought through to the end

Success is never an individual achievement. Strong partners and the ecosystem around a company are just as important. We present four important pillars that make sustainable growth possible.

AUTHOR Nils Bröer



In its search for new decors, the EGGER Design Lab relies on an international network of regional decor managers.

## DESIGNING IN TEAMS: THE EVOLUTION OF DECORS

When first developing a new decor, you initially have to search for the right starting material, i.e. finding woods and stones and scanning the materials. The network with which the EGGER Design Lab in Brilon (DE), headed by Klaus-Dieter Monhoff, detects new trends, comprises 21 experts, 16 of whom work in Brilon, while the others are local decor managers in the target markets. They stay in touch with customers and collate suggestions that influence decor development. The same applies to cooperation partners and suppliers with whom EGGER constantly exchanges information. In contrast to fashion trends, developments in

interior design are evolutionary, not revolutionary. For the decor manager, this means “observing, understanding and anticipating”. What is typical EGGER? It’s hard to say: “We are so successful with decors such as Halifax Oak that many architects now immediately associate it with EGGER,” says Monhoff. Farmhouse Pine shows that decors sometimes take a surprising development path. “Over the course of 15 years, the design became the most famous decor on the English market.” The starting point was a wooden toilet seat that a customer had sent in to inspire a decor. Mind you, they didn’t send in a photo, but the actual item.

### 2001

With the introduction of the Cremona Oak decor, EGGER is ahead of its time. While oak decors are in demand today, the market only knew of beech and maple at the turn of the millennium.

### 2014

Introducing the synchronised pore: EGGER is not the first on the market with this technology, but implements it the most consistently. Sales have almost doubled every year since 2016.

### 2015

Addition of laminates and compact laminates to the Feelwood range.

### 2019

Interzum Award for the PerfectSense Matt and Duo Edge combination.

Water-resistant, scratch-resistant and up to 90 percent renewable raw materials: GreenTec.



## CONTINUOUS INNOVATION: SUSTAINABLE FLOORING

EGGER has been active in the flooring segment since 1991. But a lot has changed since then in terms of product technology. “The developments in the area of water resistance and surfaces are immense,” says Maria Nehring, Head of Marketing, EGGER Flooring Products. More specifically, this means that the GreenTec Design Flooring presented by EGGER in 2020 features a product structure that is precisely geared to these trends. The wear layer is robust and water-resistant, the wood-based coreboard shows very little swelling behaviour and the cork underlay mat insulates footfall sound.

This makes it suitable not only for the bathroom at home, but also for use in commercial rooms. “We have taken our

time to develop a sustainable alternative to PVC and vinyl flooring,” says Maria Nehring. Development work on the predecessor to GreenTec lasted three years alone.

EGGER Comfort Flooring is a little more comfortable, but by no means less innovative. The double-sided cork coating of the HDF coreboard allows for an integrated sound-proofing underlay and 40 million thermo-insulating cork cells provide a pleasant footfall feeling. “Thanks to digital printing, cork flooring is available in a wide variety of designs,” says Nehring. Cork layer lamination takes place in plant 2 at the EGGER site in Wismar (DE). By integrating all work steps in a single location, production is organised efficiently.

### 1999

The flooring system in EGGER's new European plant in Wismar (DE) is considered the fastest and most modern in the world. It can make 100 floorboards per minute.

### 2005

Synchronised pore technology is used for the first time in the flooring sector. Initially reserved for major customers, the structure developed at that time is still successful today in a slightly adapted form.

### 2006

Production launch of direct print DPR® flooring. The process protects the environment since the water-soluble, hardened varnish is printed directly onto the coreboard.

### 2011

Introduction of Comfort Flooring on a cork board with integrated cork sound-proofing underlay and cork top layer.





Evolution of architecture: the Tirol Lodge in Ellmau is based on the design idea of the EGGER concept house.

## → IDEAS WITH A FUTURE: THE CONCEPT HOUSE

“The OSB board has been developed to a large extent,” says Carsten Ritterbach, Commercial Director of Sales for Building Products at EGGER, and although there are always “adjustments and optimisations”, EGGER essentially differs in that “we give our customers recommendations and support them as best we can and in different ways when using our products to build with wood.” The EGGER headquarters in St. Johann (AT), the TechCenter in Unterradlberg (AT) and the administration buildings in Brilon (DE) and Radauti (RO), which were all built with EGGER materials, really showcase the products in use. The buildings’ modular design was also the inspiration when planning the EGGER concept house: “in 2015, at the height of the refugee crisis, we joined forces

with Holzbau Saurer and architect Bruno Moser to consider how we could develop living space for refugees,” explains Ritterbach. The EGGER concept house was born from this idea. “To this day, we receive regular calls from interested parties asking where to buy the concept house.” The constant demand shows “that affordable housing is still a big issue in society,” says Ritterbach. The evolution of the concept house – which envisages a room size of 11.4 by 2.8 m as this corresponds to the maximum floor area of EGGER OSB boards – can be seen in Ellmau (AT), a neighbouring town of St. Johann. The Tirol Lodge Hotel, also designed by Bruno Moser, is based on the same approach. The main components are EGGER DHF and OSB 4 TOP boards.

### 2006

Presentation of EGGER OSB 4 TOP. The OSB board has an integrated vapour barrier and sets the standard for timber construction boards on the market.

### 2010

EGGER’s own modular design architecture is launched at the Radauti (RO) site. The main administration building at the site was constructed in just 5 months and is one of the first to meet the gold certification standard of the German Sustainable Building Council.

### 2015

The new EGGER headquarters in St. Johann (AT) is completed. The following year, the design by architect Bruno Moser is awarded the Bronze American Architecture Prize in New York.

### 2016

In Uchingen near Stuttgart (DE), refugee accommodation is being built based on the EGGER concept house, with space for 60 people over 500 m².

## BETTER THAN NATURE: FURNITURE MANUFACTURING WITH EGGER

In the 1950s, wood was a luxury commodity, whereas chipboard was a way to create an affordable material that made furniture and interior design affordable. “That was a stroke of genius since this process made furniture affordable,” says Hubert Höglauer, Head of Marketing and Product Management Interior and Furniture at EGGER.

In addition to the evolution of boards, surface design has become increasingly important in furniture and interior design since the 1980s. However, in the noughties, coated chipboard still had the reputation of being a cheap imitation of nature – especially as it often had less spectacular plastic surfaces. Since EGGER introduced Feelwood decors in 2015 at the latest, this notion is a thing of the past. “Combining the structure with a synchronous decorative paper look represented a major milestone,” says Höglauer. “When carpenters and architects come to us today, even the experts find it difficult at first glance to distinguish between a solid surface and Feelwood decor – even when they first touch it, too.”

But it is not only the tactile properties that make a difference: “On the one hand, we imitate nature and make natural materials affordable. On the other hand, our products feature properties that do not even exist in nature,” says Höglauer. Melamine-coated surfaces are not only highly antibacterial, but also UV-resistant and scratch-proof. “In addition, our customers can plan using large-format products that nature does not offer,” says Höglauer.

Besides deceptively genuine wooden surfaces, designers have been increasingly turning to innovative PerfectSense products since 2015. They are also constantly being developed. Starting with the Decorative Collection 2020, PerfectSense Topmatt has also been available in the worktop segment. “We are also seeing an increasing trend towards high-quality, matt and simple products in the worktop sector,” says Höglauer. “Thanks to PerfectSense and our compact laminate, we are not only expanding our portfolio, but also increasing our competence.”



Short-cycle press for synchronised pore production in St. Johann (AT).

### 1989

The first postforming line goes into operation. It currently produces 7.2 million linear metres of worktop per year.

### 1993

The first furniture components plant is built in St. Johann (AT).

### 2006

Eurolight lightweight board introduced. With its central cardboard honeycomb core layer, it saves on resources and lowers transport costs.

### 2015

The product innovations PerfectSense and Compact Laminate are launched.

### 2019

At the new site in Biskupiec (PL), the world's most modern worktop production line goes into operation.

### A PARTNER IN TIMES OF CRISIS: LAMINATES FOR HOSPITALS

EGGER laminates are already used in many hospitals, for example as impact protection or in bathrooms, where the antibacterial effect offered by thermoset hardened melamine surfaces is particularly important. During the coronavirus crisis, the team in Gifhorn (DE) produced laminates that were used in hospitals in Finland, Israel and Japan. In the north of Europe and in Israel, where one fabricator fits out several clinics, EGGER laminates are used in medical roller boxes and mobile screens. “Here, laminates offer a huge advantage over textile room dividers since medical personnel are in constant contact with them,” says Mario Sevignani, Plant Manager Sales in Gifhorn.

In March and April, the demand for laminates in the healthcare sector increased six-fold. “The fact that there were still no bottlenecks is testament to the delivery performance that staff in Gifhorn showed, despite all the difficulties,” says Sevignani. For the on-site team, this meant reorganising shift operations and protecting colleagues in the at-risk group while still meeting the increased demand with reduced manpower. The site is located at the heart of the German automotive industry. “While capacities were reduced at these plants, EGGER was even able to increase its personnel requirements,” says Sevignani proudly.



Mario Sevignani, EGGER Plant Manager Sales in Gifhorn: during the coronavirus crisis, he and his team supplied highly antibacterial laminates for hospitals.





# Always moving

Optimally planned transports protect nature and cut costs. This is why EGGER works with reliable regular freight forwarders and also continuously develops analogue and digital processes.

AUTHOR Jan Ahrenberg





Digital planning: While lorries are still on their way to deliver materials to the plant ...

... return trips are already planned there to avoid empty runs.



Silk, spices, porcelain and paper – without the daring caravans that fought their way through icy highlands and scorching deserts even before the birth of Christ, Europeans and Arabs would probably not have been able to trade treasures from the Far East for centuries. After all, the best goods are hardly worth anything if they cannot be transported to the customer. And this has hardly changed to this day.

"Logistics is one of the most important tasks when you produce on an industrial scale like EGGER," says Rainer Brandauer, Chief Logistics Officer at the company. In most plants, well over 100 lorries deliver raw materials such as wood and glues every day; in large plants, this number exceeds 200 lorries. On the other side of the production line, there are at least half as many lorries in the starting blocks waiting to deliver the finished goods to customers as quickly

as possible. Thousands of tonnes of freight also arrive and leave the EGGER plants by water and rail every day. Even the smallest changes in the process can have an immense impact – for better or worse.

"This is demonstrated in particular by exceptional circumstances such as those we experienced during the corona crisis," explains Rainer Brandauer. For example, the border closures at the beginning of the coronavirus crisis led to some bottlenecks. "However, we were still able to handle them quite well and quickly. This was largely because we primarily rely on regular freight forwarders, with whom we work very closely and in a spirit of trust. When the drivers were no longer allowed to cross the borders, our freight forwarders sometimes brought themselves new drivers with minibuses to the site so that they could take over the loads and





→ thus meet the agreed deadlines," praises Brandauer.

This was anything but a given. For years, international trade and competition have put the logistics industry under such cost pressure that today even the slightest of additional bumps in the road often put it completely off track. "That's why we work at all 20 sites worldwide primarily with local regular freight forwarders, whose business has often grown with us." That gives planning security, on both sides. "And it's invaluable in the logistics business. Only then can transport solutions be efficiently designed and developed in the long term."

### Shared growth becomes shared success

One of these regular freight forwarders for the plant in St. Johann (AT) is Hannes Buchsteiner, Managing Director of EXIM Transport GmbH, based in nearby Mariastein. The businessman has managed the company since 2004. Adopting a new name, he took over the business from his grandfather, who initially delivered the first load of wood to EGGER – and delivered the first load of chipboard to customers.

In the 1970s, his grandfather's fleet grew to 25 lorries – the company grew alongside EGGER. Nowadays, 125 tractor units and 200 semi-trailers are on the road for Buchsteiner's company, which is now called EXIM Transport. This business success would not have been possible without being in such local and personal proximity to the EGGER headquarters.

"We have a very similar view of business and we also enrich one another when it comes to innovations," says Hannes Buchsteiner. It is therefore essential for logisticians to have as few empty runs and downtimes as possible. Together with EGGER, the company therefore developed a system to avoid empty runs after delivering glue. Instead of tank lorries, Buchsteiner therefore dispatched semi-trailers as early as the 1980s, and the interior featured large bubbles for the glue that were attached with a

belt system. Following delivery, these could be rolled up by hand – almost like giant toothpaste tubes. This then created space for returns, where the lorries transported decor papers to Unterradlberg.

### Lighter lorries for efficient, environmentally friendly transport

"Over the years, we have continued to refine this system in five or six steps," explains Hannes Buchsteiner. "Today, the glue bubble is no longer rolled up by hand, but lifted under the ceiling by means of an electric lift after unloading - this relieves the driver and is fast, clean and efficient". Another optimisation topic is the lorry payload. Together with its transport partners, EGGER exploits all potential fields in this respect: From the use of lighter lorries, to the correct use of these vehicles, to the weight optimisation of transport packaging.

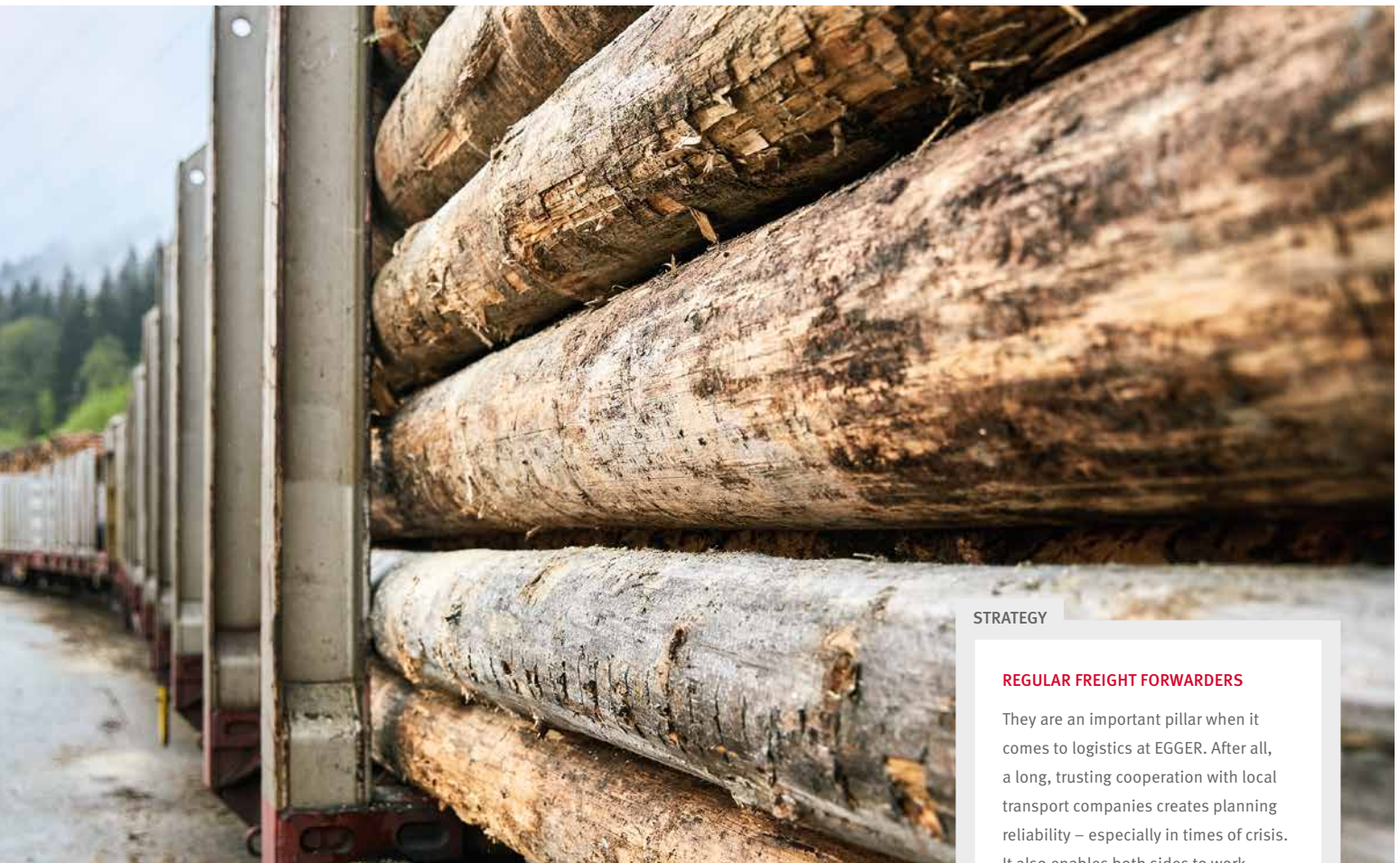


***"The fact that we have been working with our regular freight forwarders for such a long time and in a spirit of trust puts them in a position to make long-term plans."***

**Rainer Brandauer**, Chief Logistics Officer EGGER Group

EXIM Transport: What began with a single lorry is now a large company with a modern fleet.





Multi-track: Rail is also used primarily for transporting raw materials to the plant.

#### STRATEGY

##### REGULAR FREIGHT FORWARDERS

They are an important pillar when it comes to logistics at EGGER. After all, a long, trusting cooperation with local transport companies creates planning reliability – especially in times of crisis. It also enables both sides to work together on innovations and continually optimise processes.

"The fact that we have been working with our regular freight forwarders for such a long time and in a spirit of trust puts them in a position to plan for the long term," explains Brandauer. "This also has a positive effect on investments in the vehicle fleet. And modern, lightweight lorry combinations are a benefit for the freight forwarder, for us and for the environment." This shows very clearly how everyone benefits when the freight company is treated fairly. "It goes without saying that we have nothing to give away. But, together with our carriers, we are looking for really efficient strategies. And exploitation only brings short-term savings, in the long term - and this is how we want and need to think as a Group - it would be counterproductive and of course not in our interest".

On a global level, EGGER therefore pursues numerous other strategies to make the transport of raw materials and goods as cost-efficient and sustainable as possible. Wherever it makes sense, rail is used, usually for the delivery of raw materials, but also for the transport of semi-finished and finished products from plant to plant. EGGER also relies on intermodal transport, i.e. the combination of different modes of transport. For example, deliveries from the Gagarin (RU) plant to England by lorry and ship or exports to overseas markets by rail and container transport. And of course there should be as few empty runs as possible.

"Our dispatchers in the plants use digital tools for this purpose. Transport monitors allow them to see in real time

which deliveries are about to arrive and which deliveries are pending. This allows them to plan return trips before the lorry enters the yard, thus minimising downtime and empty runs," says Rainer Brandauer. This is because the internal plant logistics are a further building block for optimising external logistics. "The caravan is only ready for a journey when it is well prepared – this is something we work on every day."





# Praising the surface

How the trend towards purism and black give a new meaning to our understanding of colour, light and structure.

AUTHOR Valérie Hasenmayer

1

Simple, clear, uncluttered. These are the most important residential trends of the last three years. Minimalism reigns in contemporary home environments. Materials and surfaces are increasingly the focus. The continuous development of surface technologies, such as Feelwood and PerfectSense at EGGER, is in keeping with the lifestyle of this new orderliness.

“Less, but better”: the motto of the legendary designer Dieter Rams is more relevant today than ever. Rams, who helped the German company Braun achieve world fame with his design of minimalist functionalism, was driven by the idea of freeing products from everything that did not directly serve their practical value. According to his ten principles for good design, “it makes

a product understandable". The product world that the trained architect had been designing in Kronberg, Hesse (DE) since 1956 was unobtrusive, honest, long-lasting and last but not least environmentally friendly.

### From Dieter Rams to Jonathan Ive

With his designs, Rams created the blueprints for today's design classics: Braun's design is used as a reference for almost the entire Apple product range; Dieter Rams was a great role model for Apple designer Jonathan Ive.

"Less, but better": this also applies to today's home environments. The so-called clear-space trend is both a furnishing style and lifestyle at the same time. Instead of accumulating cheap products, the focus is on calm and clarity, on quality and sophisticated aesthetics. It is not only in large metropolises that reduced design language and high-quality materials are displacing heavy furniture worlds and room-filling shelves full of decorative items.

### Clarity and simplicity

White and Angora Grey shape this urban residential style. Klaus-Dieter Monhoff, Head of EGGER Decor and

Design Management, saw this interior trend emerge at the same time as Apple products. Since the snow-white and haptically perfect iPods came onto the market in the mid-noughties, the trend has exploded and is still continuing today, he says. "At the same time, we have already been able to see in our trend research how the themes of clarity and simplicity have spread – from high-gloss gadgets through to the living room," according to the expert. His team identifies promising trends and develops appropriate designs in the EGGER Design Lab in Brilon (DE).

### Longing for an antithesis to everyday stress

It is obvious that many people are longing for diminution and clarity right now. Aesthetic preferences are developing in parallel to our basic needs. The more hectic the working day is, the stronger the desire for a calm antithesis to the end of the day: practicality, ease, rest for the eye. The home – which was still adorned with soft beanbags, colourful playful accents and large-format posters in the 1990s – is now becoming a scaled-back place of retreat, free from all superfluous things.

Currently, the most prominent advocate of this "less is more" principle is Marie →

- 1 The aesthetics of perfection: with subtle matt / gloss effects, the Deepskin Excellent texture creates a sophisticated and natural overall impression.
- 2 Changing home environments: matt and rustic textures characterise this design approach for connecting kitchen and living spaces.





→ Kondo of Japan. Her tips on decluttering are the subject of worldwide bestsellers and a successful Netflix series. One of her best known recommendations is to experience the proverbial “spark of joy” when tidying up: only keep the things that really give us pleasure. Marie Kondo is not concerned with letting go, but rather with a basic collective need of our time: experiencing joy in the little – but essential – that remains.

The desire for clarity and elegance leads directly to a stronger focus on the quality of materials and the value of our home environments. Surfaces that are no longer buried under mountains of kitsch become more prominent. Colour, reflection and haptics become an emotional experience.

### Black gains in importance

In this area, EGGER is continuously working on future-proof solutions, such as PerfectSense technology. The German Design Award winning lacquered boards are refined with multiple layers of lacquer in an elaborate process. They not only meet the high visual demands of our time, but are also particularly resistant to the smallest of scratches and dirt particles. Anti-fingerprint technology also ensures that the visual purity of the surface is maintained – even in the midst of hectic everyday life. “However, quality is not only evident from the surfaces, but also from the colour tones,” says Klaus-Dieter Monhoff.

EGGER has therefore not only developed a particularly clear white, but also various shades of grey, and over the past two years, black has become increasingly important. Partly as an accent, but also more and more across larger areas. And this is where the importance of the surface is key. After all, every detail on embossed surfaces is immediately evident on black: this also increases a product’s value.

When fast-moving trends are replaced by sustainable and timeless products, this also leads to new consumer behaviour. Dieter Rams’ influence on design also applies to the way we make our purchasing decisions: we are prepared

to invest more money in order to obtain better products that are not only aesthetically more appealing, but also of higher value and therefore more durable.

### Focus on surface quality

Surfaces and materials play an increasingly important role. With less distraction, they stand out more and must be of a correspondingly high quality. As part of their trend research, the EGGER design team could clearly foresee and observe such preferences. The desire for value brings the haptic qualities of the material ever more into focus. The Stuttgart-based institute raumprobe compares the tactile experience of haptically high-quality surfaces with a handshake: “a passive handshake speaks volumes on a tactile-perception level. So does the hearty pressure of a greeting or the sealing of a business deal.” In other words, the confidence of a firm handshake is similar in its tactile experience to the feeling we have when we feel quality.

Research continues to drive perfection on the surface. Smart coatings that add new performance properties to surfaces – such as bacterial resistance, self-healing or superhydrophobia – are gaining ground. According to the consulting firm Frost & Sullivan, IBM, Samsung and Apple are also actively researching intelligent coatings.

→

- 3 Focussing on the essential: in modern office worlds, interior designers rely on grey and black to create a concentrated atmosphere.
- 4 A role model for Apple: Brown “TP 1” (l.): combining a pocket transistor radio “T 4” (top) and portable record player “P 1” (bottom). Dieter Rams. 1959. Braun “L 2 loudspeaker” (r.). Dieter Rams. 1958.

3





4

The market is booming: the market research institute Verified Market Research (VMR) has calculated that the turnover of the smart coating industry will increase to 12.7 billion US dollars by 2026. This would represent a five-fold increase in market value, which according to VMR estimates stood at USD 2.6 billion in 2018.

Monhoff is currently focussing closely on trends of the near future: “one can be curious about what the coronavirus crisis will bring about – following a phase during which people spent an extraordinary amount of time within their own four walls.” Indeed, social distancing measures during the

COVID-19 pandemic led to developments that one would never have thought possible before. Residents in urban areas in particular initially perceived domestic isolation as a great relief and an opportunity to put distance between themselves and the excess of social obligations and eternally chasing after them. Everyone had to stay at home and rely on themselves. There was telephoning and communicating, meditating, tinkering and pondering – and last but not least: sorting.

#### **Back to nature?**

The rediscovery of appreciating authentic relationships will certainly

have a long lasting effect. As will the desire to have more time and space for the essential things in life. Will this further strengthen the trend towards a minimalist, calmer haven of tranquillity at home? “The opposite could also happen – perhaps the need for greater security during the crisis will also increase the longing for cosiness and warmth instead of minimalist clarity,” muses Klaus-Dieter Monhoff. “Perhaps many city dwellers will be drawn to the country – towards opulent nature and colourfulness instead of urban coolness.” Only time will tell – and will continue to shape people in their home environments anew.



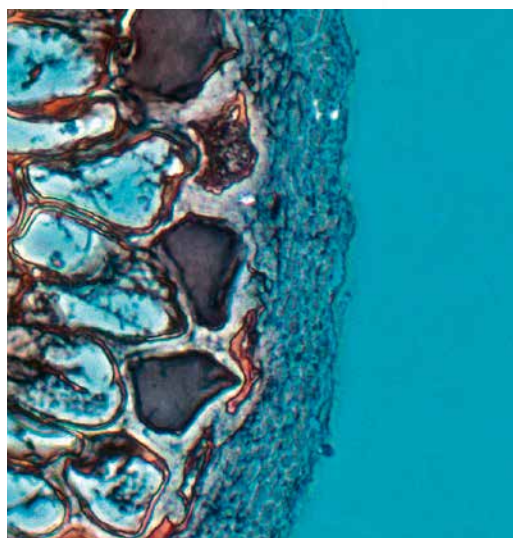
## 5 THINGS ABOUT

# roots

They anchor the plant in the soil, give it support and ensure supplies of water and important nutrients. It's no wonder that people are particularly fascinated by them.

## 1 FLAT OR DEEP?

Besides the plant stem and the leaf, the root is one of the three basic organs of the cormus – the multicellular vegetation body of a plant. Among other things, botanists distinguish between flat- and deep-rooted plants. While the former grow just below the earth's surface and are adapted to absorb rainwater seeping into the soil, deep-rooted plants drive a thick main root strand vertically into the earth to supply the plant with deeper-lying groundwater. The fact that some organisms overcome astonishing obstacles in the process is demonstrated by a fig tree species in South Africa whose roots find their way through porous rock, penetrating up to 120 metres deep into the ground.



## 2 STRONG HAIR

Under a microscope, you can see the tiny root hairs, about one millimetre long, on the outer edge of the root strand. They extract nutrients and water from the soil and are fused directly with soil particles specifically for this purpose. One single root system usually has several billion of these fine hairs, which can extend over a total length of more than 10,000 kilometres. A carbohydrate-containing film surrounding the hairs also allows minerals to be absorbed.



### 3 MEDICINE FROM THE FAR EAST

It is said to help with stress and fatigue, improve memory and strengthen the immune system: ginseng root is considered a miracle cure, particularly in the Far East, and has been used in traditional Chinese medicine for over 2,000 years. Once reserved for the rich and powerful, this plant from the aralia family was often more valuable than gold. The plant then reached Europe in the 17<sup>th</sup> century. Here it has been used for medical purposes, among others, since the 20<sup>th</sup> century.



### 4 MAJESTIC SIZE

The California native giant sequoia (*Sequoiadendron giganteum*) can reach dizzying heights of up to 95 metres. In contrast with the impressive growth of this majestic tree is its root system, which usually does not reach more than one metre below ground. However, to give this giant stability, its roots extend up to 30 metres sideways and cover areas of up to 300 square metres underground.

### 5 MAGIC POWER

Anyone who digs up the mandrake root without taking precautions can be driven to madness or even death due to its vile screams. At least, that was the common consensus in the Middle Ages. But even until the 19<sup>th</sup> century, the human-like root was still the subject of many myths: worn as an amulet, it was supposed to protect its owner from evil spells and diseases, and help them become wealthy.







# E\_NATURE

“You could glue wood to itself  
using lignin. There could not  
be a more sustainable binding  
agent.”

Andreas Geyer, Head of the EGGER Chemical Competence Centre  
What holds the board together at its core (pages 46 – 48)

# Sustainable living



## CLEAN AIR

[www.greencitysolutions.de](http://www.greencitysolutions.de)

Through “City Tree”, the start-up company Green City Solutions has declared war on air pollution in the world’s major cities. The moss-covered wooden construction is intended to bind up to 80 percent of the fine dust in the air caused by traffic and industry, while also producing fresh oxygen. This is managed by the intelligent ventilation and irrigation technology on the interior. According to the founders’ promise, the moss mix that sprouts behind the wood filters breathing air for up to 7,000 people in just one hour. In addition to its home city of Berlin, the start-up has already taken its “City Trees” to pedestrian areas of Hong Kong, Oslo, Paris, Amsterdam and London.

## CLEAN SOUND

[www.sonoambra.com](http://www.sonoambra.com)

Less is more – this is the motto of Danish furniture designer Hans Sandgren Jakobsen. With the “Sono Ambra” loudspeaker made of oak, he has now taken this philosophy to the extreme. The small smartphone speaker does not need electricity or Bluetooth. Instead, it is simply attached. It amplifies the sound acoustically. Jakobsen playfully combines the old with the new. In his solution, low-tech meets high-tech, analogue meets digital, simple woodworking meets highly complex computer and mobile phone technology. We will be giving away one of these speakers in our puzzle on page 50.



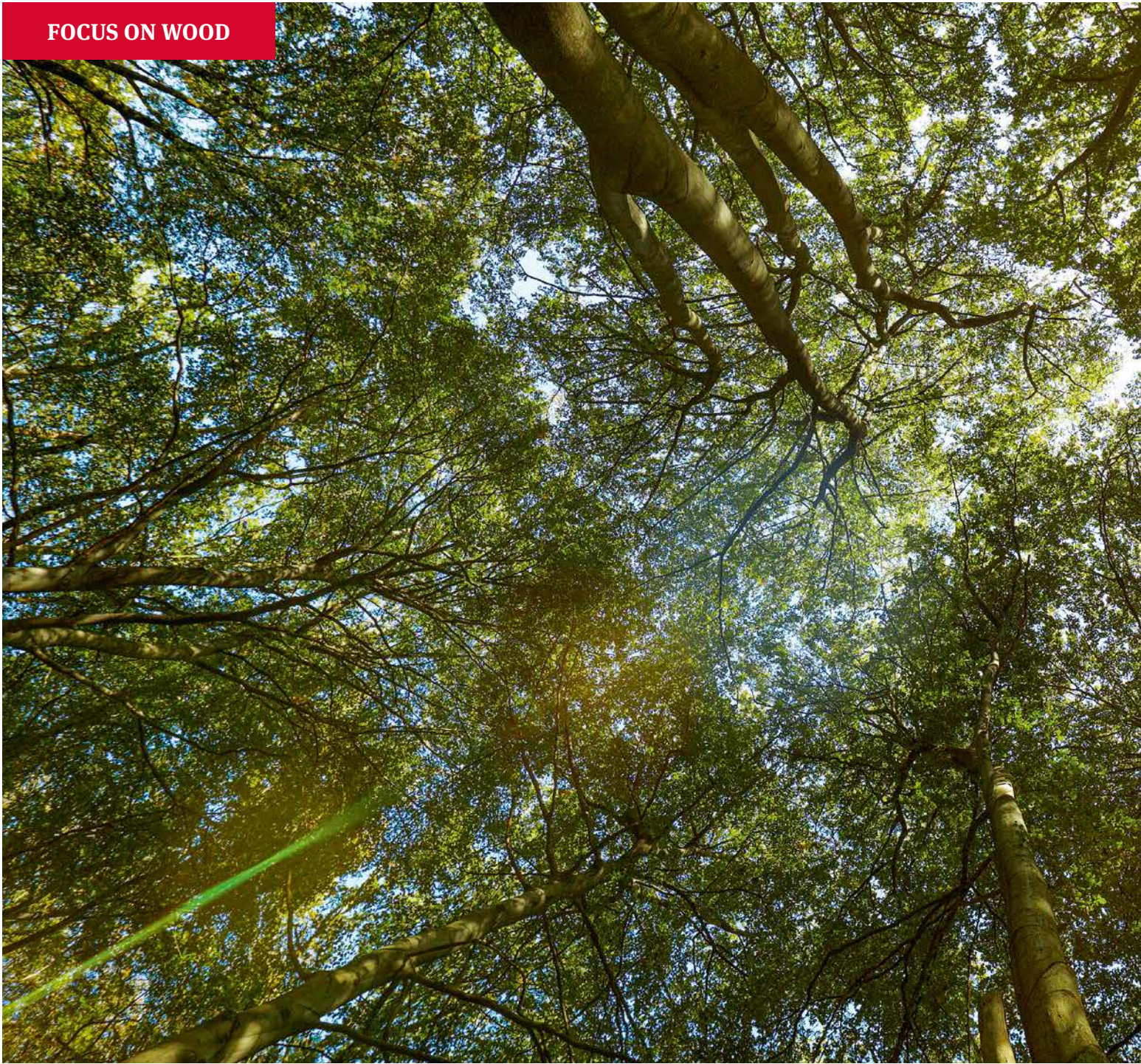
## CLEAN MESSAGE

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Environmental protection is often advertised on clip-on badges. We all remember versions with messages like “Nuclear power? No thanks”. Yet their production is anything but ecological: the main components of conventional badges are tinplate and plastic. Hannes Schmitz, an environmentalist who has been in the badge business for over 30 years, could not accept this contradiction. Together with the University of Natural Resources and Life Sciences (BOKU) in Vienna, the Austrian has therefore developed a biodegradable, CO<sub>2</sub>-neutral alternative. He uses wood fibres from certified sustainable forest management, which means that his badges decompose by themselves after eight to ten weeks on the compost heap.





# The future of trees

Climate, technology and social interests are changing.

This also has an impact on the forest. Let us take stock.

AUTHOR Jörn Käsebier





Forests as a field of conflict: they provide raw materials for the wood-processing industry, are popular recreational areas and also play a key role in the fight against climate change.

will attempt to reconcile silvicultural requirements with the needs of the timber industry,” says Project Manager Dirk Berthold from the Fraunhofer Institute for Wood Research, Wilhelm-Klauditz-Institut WKI in Braunschweig.

The researchers are testing two different silvicultural systems on land belonging to public and private forest owners in Germany. High thinning achieves the desired thicknesses more quickly and in a condition that can withstand wind and weather through clearing individual trees. Yet it is questionable whether the quality of the wood suffers as a result. In contrast, trees reached a smaller diameter as a consequence of low thinning. When pursuing this method, the trees grow close together and compete for canopy space. Although this leads to better wood quality, these trees are generally weaker and therefore more susceptible to wind breakage, drought and tree pests.

But maybe this loss of quality can be compensated for using a certain sorting method? This is where EGGER comes in as an industrial research partner. Sorting processes are being tested at the site in Brilon (DE). At the same time, advancing climate change exerts a great deal of time pressure: the great drought of recent years has severely affected spruce trees. Douglas fir and larch are now the focus of research, as these tree species are better able to cope with the new climate conditions.



How well forests cope with climate change is closely related to biodiversity. Biodiversity makes the forest more resilient to rising temperatures, storms and pests. However, in Europe, Russia and North America, biodiversity is significantly lower than in tropical areas. This was strikingly demonstrated last year by a study completed by international scientists from the German Centre for Integrative Biodiversity Research and the Martin Luther University Halle-Wittenberg (DE). They created a map of the world's forested areas, which they can update with new data continuously to see how the

forests are developing. So is increasing biodiversity the solution? It's not that simple.

While research in Halle is carried out to look at environmental protection aspects, another team is also considering industrial objectives under the conditions of climate change. “FutureWood” investigates how the quality of coniferous woods can be maintained in the future and what this means for the composition of the forests. After all, sawmills are already having to compensate for poor wood quality through quantity. “Our project







- 1 Modern harvesters ensure forestry work is effective yet gentle.
- 2 Materials made of wood shavings reduce the consumption of solid wood.

Companies such as EGGER have known for years that an alternative to spruce is needed and have adapted to this when purchasing wood. “We expect this trend to intensify,” says Manuel de Menech, Wood Purchasing Manager, Eastern Europe. This has an impact on production. Using appropriate innovations, it is possible to adapt products and technologies to other wood species.

How much wood is available is also a political issue. The forest is considered an important building block in the fight against climate change and preventing the extinction of species. Environmentalists are calling for more land to be left as virgin forest and to reduce cultivation. The forest is also in demand as a recreational area. Hikers and walkers want to cross it and revel in unspoilt nature. Enjoying good forest air – also known as forest bathing – is gaining in popularity.

All this will further increase competition for the raw material. The demand for wood is growing across the world. The construction industry, for example, is relying more and more on this renewable resource, and increasingly also in countries that do not have their own tradition of constructing using timber. In most cases, composite concepts made of concrete and a high proportion of wood are the result, including an increasing number of high-rise buildings. When it comes to façades, architects also like to rely on this natural raw material – it embodies sustainability. And builders and designers like to show that they’re thinking about it, too.

Another branch of industry that increasingly relies on wood is the biochemical industry since it’s looking

for a substitute for plastic. Even though the price of oil has recently fallen significantly, it could rise again in the medium term. On the other hand, the longevity of plastics made from fossil fuels has led to disposal problems. As a result, there are worldwide efforts to develop alternatives to plastic products or at least to reduce the proportion of plastic in products – or vice versa: to increase the proportion of wood. These wood-plastic composites, i.e. compounds of wood shavings and plastic, are now even used for coffee capsules.

EGGER has been using wood shavings from the very beginning. Production fully utilises wood as a raw material. All residual wood, from our own sawmills and manufacturing, is used for production, refining processes or to generate energy in biomass power plants. The wood-based materials producer strictly follows the concept of cascading use: the company will only consider wood to be an energy source when it can no longer be recycled further.

Competition for the raw material is therefore increasing. This makes it all the more important to use it more and more efficiently. EGGER has therefore been working for a long time on technologies that allow an ever more economical use of wood – and successfully: the proportion of waste wood in chipboard has increased continuously over the past 50 years, without compromising quality. Another example is the Eurolight lightweight board with its honeycomb cardboard core. “For the same thickness, it requires much less material than a comparable solid board,” says Manfred Riepertinger, Head of Core Material and Sustainability.

More and more advocates around the world are demanding wood is only burnt at the end of cascaded use. The calls to spare wood as a fuel or even to exclude it completely are becoming louder. However, there is criticism of subsidies for wood heating systems such as pellet stoves. The debate is not concluded.



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**» Cascading use must continue to gain in importance and could even become mandatory. «**

**Manuel de Menech**, Wood Purchasing Manager, Eastern Europe

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**What holds the  
board together  
at its core**





**1** Wood scan: the sponge-like structure of the xylem fabric contains lignin, which is a promising candidate for the binding agent of the future.

**2** Over the past 15 years, EGGER has tested around 20 alternative binding agents in the laboratory to determine their suitability for gluing chipboard.

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Binding agents are among the most important ingredients for a successful chipboard – both the properties as a material and sustainable criteria are important. EGGER is therefore constantly researching the further development of these central components.

AUTHOR Jan Ahrenberg

Fresh wood, sawmill residues and up to 30 percent recycled wood – what is permanently combined in EGGER chipboard comes from very different sources. The binding agent that brings all these components together in one material is therefore crucial to ensure the product is of consistent quality. “Today, we mostly use UF glues, i.e. urea-formaldehyde resins, that cure completely during the pressing process,” explains Andreas Geyer, who heads the Chemical Competence Centre Chemistry at EGGER. “It offers all the properties we need to manufacture our products in a technically, economically and ecologically sound way.” Over decades of research, the formaldehyde content in chipboard has been steadily decreasing. Wherever possible, alternatives based on melamine or isocyanate are already being used. For example, half of EGGER’s OSB boards are already completely free of formaldehyde simply by using isocyanates.

Today, the formaldehyde content in

EGGER products not only falls below the legal requirements in the various countries and markets in which EGGER is active, but it is also very close to the natural levels found in wood. “Many people forget this when it comes to the potential dangers: trees, fruit and even people constantly release formaldehyde,” explains chemist Geyer. As is often the case, it’s the dosage that makes the poison. And this has no longer been a problem with wood-based materials for some time. Above all because EGGER has continually refined the formulation of its binding agents.

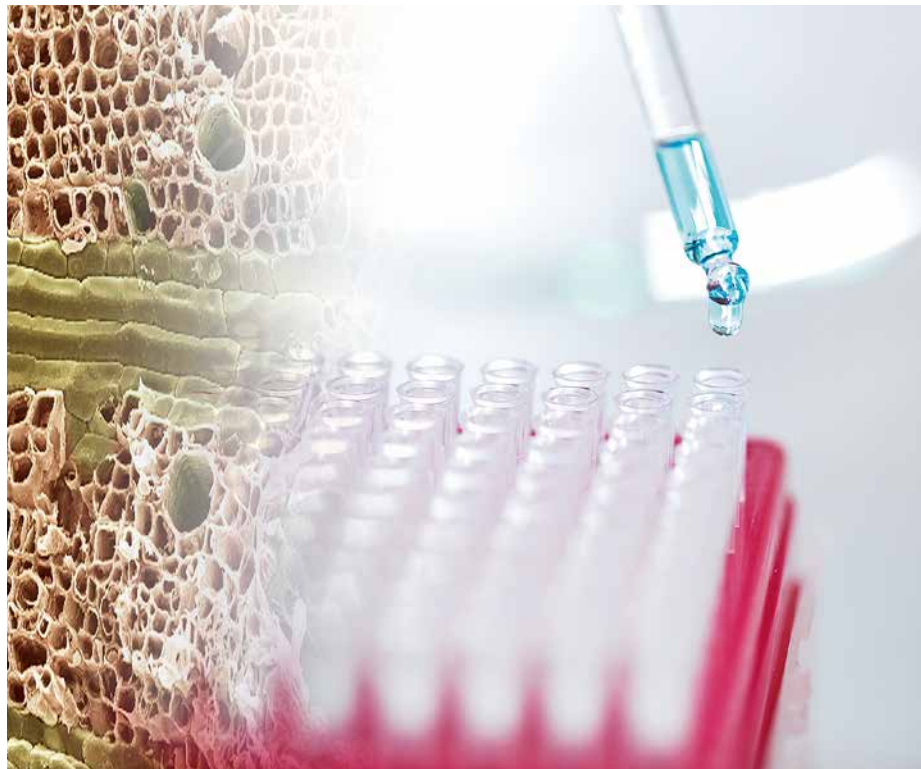
At the same time, however, demands on the sustainability of the products themselves continue to increase, which is why Geyer and his team are continuously researching new alternatives to UF glues that are ecologically even better.

“As a manufacturer, EGGER has a duty to keep the health aspects of its products in mind in three areas of activity,”

says Moritz Bühner, Sustainability Manager for the EGGER Group. “These are product responsibility for products that are harmless to health, responsible production with the lowest possible environmental emissions and, last but not least, responsibility for our own employees, i.e. health protection in the workplace.” In addition, there is a general social trend and necessity to dispense with fossil fuels and raw materials wherever possible, since they are finite by their very nature. Bühner agrees with his colleague Andres Geyer that urea-formaldehyde resin is no longer an issue when it comes to product emissions. The small proportion is bound in the product and often additionally sealed by coatings. In addition to formaldehyde emissions, there are also emissions of VOCs – volatile organic compounds that do not originate from the binding agents but from the wood used. These in particular are often perceived by customers as product-specific odours, and, in the past, have led to a negative public

→





Laying the foundations:  
EGGER has its own research  
and development laboratory  
at the site in Unterradlberg.

→ perception of UF glues. “This is another reason for us to continuously optimise our binding agents and also to look for possible alternatives,” says Bühner.

And EGGER takes this very seriously: “Over the past 15 years, we have experimented with around 20 different binding agents in our search for alternatives to formaldehyde,” says lead chemist Andreas Geyer. Over the years, it has been shown that each has its own advantages and disadvantages. For example, it is possible to replace organic components with inorganic ones such as kaolin or concrete. “In many respects, this also provides a material with good properties. However, in the end, the product has almost completely lost its wooden character. It looks more stone-like.” A second group of promising candidates are saccharides, or sugars. They occur en masse in nature and are completely harmless to health when used in wood products. “However, we must ask ourselves where we get the raw material from. And there we quickly find ourselves in competition with the food and feed sector.”

### Avoiding monocultures

In concrete terms, this means that in order to produce binding agents from sugars on an industrial scale, large areas of land are needed to cultivate corn, for example. On the one hand, however, it is needed to feed the world’s population and livestock, and on the other hand, EGGER does not want to be responsible for further agricultural monocultures and all the associated problems for flora and fauna. “Ultimately, a sugar-based binding agent only creates new problems for our company’s sustainable strategy,” says Moritz Bühner, who has had to look at the holistic aspects of production throughout his professional career. The situation is similar with protein-based binding agents. “If we look at the growing monocultures of genetically modified soybean plants worldwide, it quickly becomes clear that this would not be a sustainable strategy.” Especially since cultivation requires fertilisers based on fossil raw materials such as urea.

At EGGER, we have to think more holistically to design a sustainable strategy for the entire Group. Andreas Geyer and Moritz Bühner have therefore jointly defined the requirements for the binding agent of the future: where possible, the necessary raw materials should be available locally, in sufficient quantity and quality, to avoid transport routes and monocultures. Ideally, one would also want to become independent of fossil fuels. “This is currently still difficult to implement since many non-fossil binding agents are only available or applicable in some regions,” says chemist Geyer. In addition, it should be possible to continue using the existing plants with only minor adjustments required.

There are currently very few candidates that meet these diverse requirements. “From an economic and ecological point of view, it therefore makes sense to continue using and developing the existing binding agents,” summarises Moritz Bühner. However, research is currently being carried out on another binding-agent base material, which could one day not only fulfil all expectations, but perhaps even exceed them, adds Geyer: “Lignin is a natural component of wood and is a waste product of paper production, for example. This would make it possible in future to practically glue the wood using itself. There could not be a more sustainable binding agent.” However, it will be a few more years before that happens – years in which EGGER will continue to use fossil raw materials as responsibly as possible.



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[www.egger.com/  
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# Thinking about tomorrow today

Acting sustainably has always been part of EGGER's daily practice.

Now the wood-based material manufacturer has also committed itself to the principles of the United Nations Global Compact.

By publishing its first sustainability report in summer 2018, the EGGER Group laid the foundation for transparently disclosing all sustainability measures. A lot has happened since then. For the current issue, EGGER has fundamentally revised the report, intensifying and evaluating the dialogue with various stakeholders.

The 2019/2020 Sustainability Report now enables readers to find the information they need even faster and to gain deeper insights in an even more focused way. The contents have been completely restructured, thus providing additional transparency.

In addition to publishing the new report, a decisive milestone for future action was also set: in January 2020, the EGGER Group pledged its support for the ten principles of the United Nations Global Compact in the areas of human rights, labour standards, environmental protection and anti-corruption.

In the coming years, the wood-based material manufacturer from St. Johann will integrate the principles of the Global Compact into the company. With this, the family company has once again confirmed its pioneering role as a responsible player and its willingness to act sustainably.

## SUSTAINABILITY REPORT

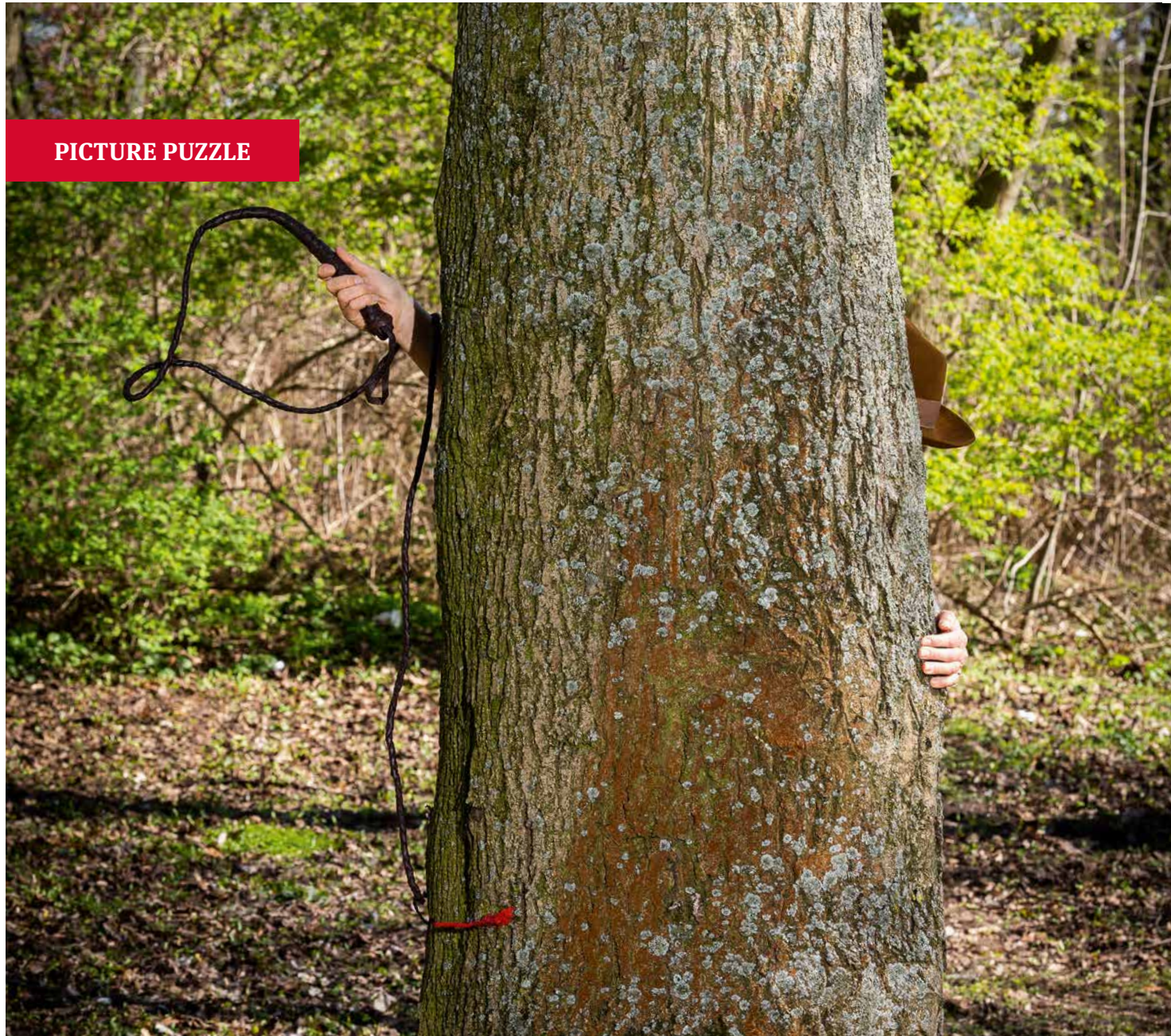
### AVAILABLE ONLINE

Sustainability at EGGER is becoming even more transparent and clear: the current Sustainability Report is available in an interactive format. Topic-related factsheets provide detailed and precise information about the many dimensions of sustainable action at EGGER. The report is available in German and English:

[www.egger.com/sustainability](http://www.egger.com/sustainability)



## PICTURE PUZZLE



## Tree huggers wanted

Nowadays, this tree hugger is best known for his role as a daring archaeologist who travels the world on numerous adventures. A whip, revolver and leather hat are his constant companions. Another famous role saw him fly through space at the speed of light as a smuggler. He even loves to fly in real life. In 2015, he barely survived an emergency landing in his propeller plane after its engine stopped shortly after take-off. Before he fully committed to acting, he worked as a successful carpenter for a long time. Some of his customers included Hollywood celebrities. For example, he built a sundeck for the actress Sally Kellerman, known from the film “M.A.S.H.”, and a sound studio for the Brazilian composer Sérgio Mendes.

### What is the name of our tree hugger?

Write to **MORE@egger.com** with the name of the actor. One lucky winner who submits the correct answer will receive a “Sono Ambra” loudspeaker (p. 41). The deadline is 31 March 2021. The judges’ decision is final.

The answer to the picture puzzle in the MORE 12 edition was Otto Lilienthal. Thank you for your many answers. Ludwig Höfelsauer from Munich (DE) won a set of sustainable care products from the Austrian brand ERUi Organic Sustainable Cosmetics.



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