

# MORE

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EGGER

EGGER Group customer magazine  
12



## Trust

Great things can only be achieved together.

### SERIAL CONSTRUCTION

How digitisation is turning the construction industry upside down, and changing craftsmanship

### ARCHITECTURE OF THE FUTURE

An interview with Rachel Armstrong, pioneer of experimental architecture

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FIRST CHIPBOARD PLANT IN THE USA

Construction work on the first EGGER chipboard plant with coating capacities in the USA is progressing. The site in Lexington, North Carolina, covers an area of approximately 96 hectares. The administration building for around 80 employees has already been completed. Production will begin there at the end of 2020. With an investment volume of EUR **440 million**, the plant will create 400 new jobs. The new location shortens delivery times and significantly improves the availability of products for American EGGER customers.

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# TRUST, FOR US, IS BASED ON CLEAR VALUES AND DIRECT CONTACT WITH PEOPLE.



Trust is a valuable asset. Nobody wants to lose it. Trust is the result when people behave as expected. Trust thrives between people who are generous to one another. The foundation, however, is reliability. In light of this, shaking hands and eating together are timeless customs that can strengthen mutual trust.

On the other hand, we can't shake hands with artificial intelligence (AI). When it comes to customer service, **70 percent** of respondents in a recent study by research company Savanta prefer a real person to an AI system. Most also assume that chatbots have preconceived opinions – a poor starting point for open exchange.

And yet it is important to take advantage of technological innovations. They change companies, public institutions and processes. It is a peculiarity of modern life that we not only trust our fellow human beings, but also superordinate systems – such as institutions, currencies and brands, says scientist Ute Frevert, who specialises in the history of trust. If systems change, this ought to result in a crisis of confidence. But on closer inspection, this happens less than expected. Familiarising yourself time and again with something new is also part of life.

We are dedicating the twelfth issue of MORE to the topic of trust. For us, one thing is certain: Trust is based on clear values and direct contact with people. We are grateful for the trust placed in us and look forward to a critical, open exchange. We hope you are inspired by this issue!

EGGER Group Management

A handwritten signature in black ink, appearing to be 'W. Schiegl'.

**Walter Schiegl**  
(Production/Technology)

A handwritten signature in black ink, appearing to be 'T. Leissing'.

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

A handwritten signature in black ink, appearing to be 'U. Bühler'.

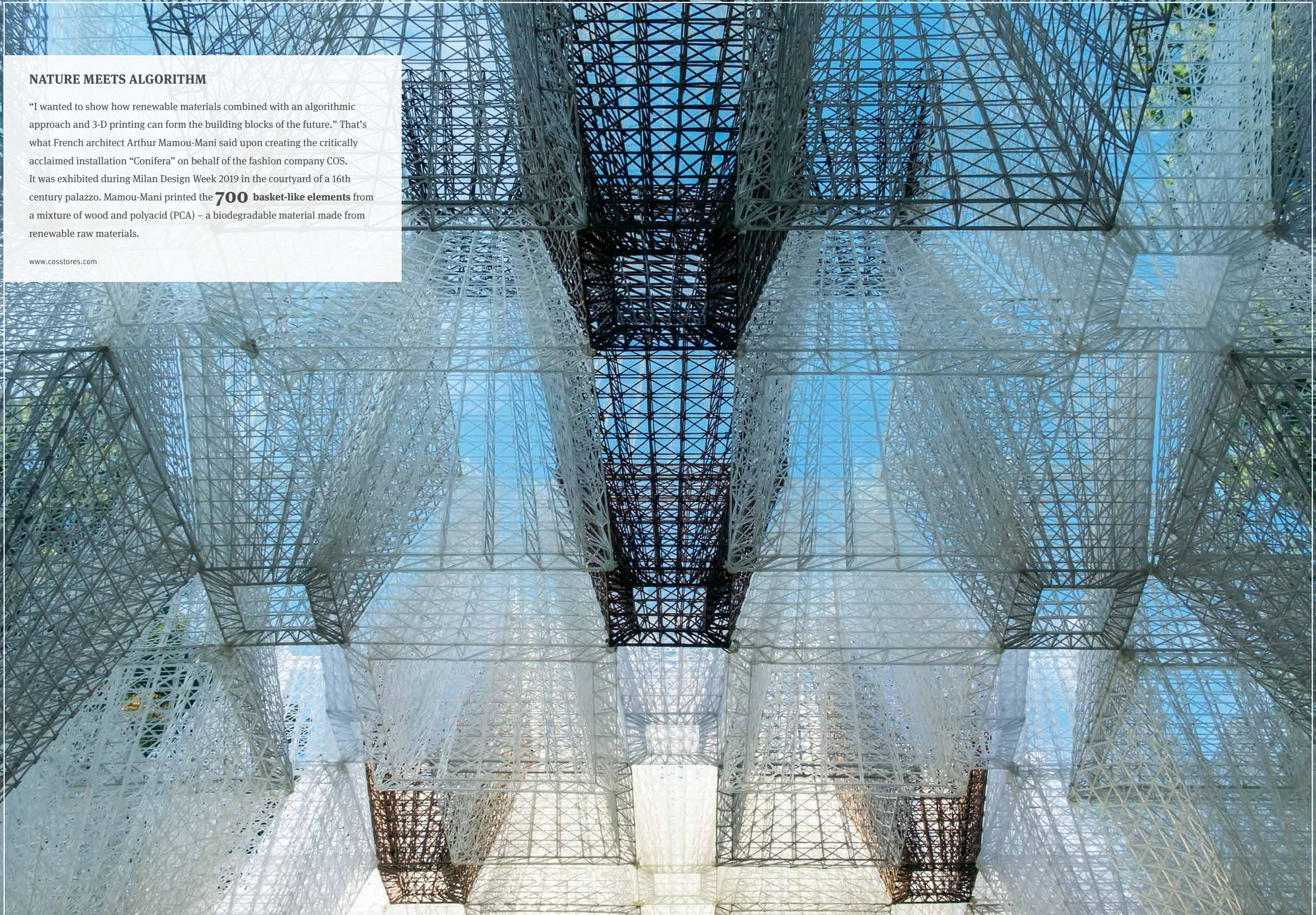
**Ulrich Bühler**  
(Marketing/Sales)



## NATURE MEETS ALGORITHM

“I wanted to show how renewable materials combined with an algorithmic approach and 3-D printing can form the building blocks of the future.” That’s what French architect Arthur Mamou-Mani said upon creating the critically acclaimed installation “Conifera” on behalf of the fashion company COS. It was exhibited during Milan Design Week 2019 in the courtyard of a 16th century palazzo. Mamou-Mani printed the **700 basket-like elements** from a mixture of wood and polyacid (PCA) – a biodegradable material made from renewable raw materials.

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







LITERATURE YOU CAN TOUCH

They still exist; People who prefer to browse carefully furnished stores rather than buy books online. To keep it that way, Canada’s largest book retailer – Indigo Books & Music – has opted for a homely interior design with EGGER products in several stores. In the Toronto branch, **2800** square meters of books are lined up under the ceiling. EGGER’s Feelwood Ambiance synchronous pore surface creates an atmosphere in which bookworms gladly forget time.

[www.chapters.indigo.ca.gov](http://www.chapters.indigo.ca.gov)



An aerial photograph showing two large, irregularly shaped rafts floating on a dark river. The rafts are constructed from numerous long, thin wooden logs, some of which are stacked vertically and others horizontally, creating a dense, textured surface. The rafts are positioned in the lower half of the frame, with the river flowing from the top towards the bottom. The surrounding landscape is rocky and sparsely vegetated, with some green shrubs and trees visible along the banks. The water is dark and reflects the sky, with some white foam visible near the rafts.

## READY TO DRIFT

Transporting wood along rivers to sawmills is still a common mode of transport in Canada today. The rafts are up to **1 kilometre** long. Eoin Carey captured a fabulous drone shot while fishing as the rafts were prepared for transport.

“The contrast between the logs that have recently been placed in the water and those that have been lying in the sun for some time is evident from this unique perspective,” says the photographer, who won a prize at the Annual Forestry Photo Contest 2019 organised by the Canadian Timber Industry Association.

[www.woodbusiness.ca](http://www.woodbusiness.ca)



# E\_INSPARATION

“The most successful economic relations exist between those countries that cultivate a good culture of trust.”

Gerhard Reiweger, Austrian ambassador (retired)  
“Mistrust is expensive” (pages 24-27)

## Ideas for tomorrow



### BY A WOODEN THREAD

[www.tff-kassel.de](http://www.tff-kassel.de)

Scientists at the University of Kassel are developing a continuous filament made of solid wood. It is flexible, stable and sustainable, and combines the advantages of textile and wood. The “Tethok – Textile Tectonics for Wood Construction” project investigates how willow wood thread can be used as an architectural material. The aim is to use textile construction methods to further develop timber panel construction or concepts for timber structures, for example. To do so, researchers are transforming millennia-old knowledge of traditional braiding into industrial, digital and robotic manufacturing processes.

### THERE'S SOMETHING WRONG

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

Mushrooms usually destroy tree trunks – but sometimes they also embellish the wood. One such example is the truffle beech, whose wood with dark lines has been in great demand among furniture makers since ancient times. The truffle beech, however, is rare and difficult to find. Scientists at the Swiss Federal Laboratories for Materials Testing and Research (Empa) have developed a procedure with which the interesting grain can be specifically reproduced. Mushrooms create patterns in hardwoods such as beech, ash and maple. The marbled woods can then be further processed into beautiful furniture, parquet floors and kitchen fronts, but also into fine musical instruments.



### STUCCO PRINTING

[www.columbia.edu](http://www.columbia.edu)

Researchers at the University of Colombia have produced wood imitations using the voxel-3-D printing process. To do so, they cut their olive-wood template into micro-metre-thin slices, took 230 photos and reworked them. This meant the interior's natural grain could also be reproduced. However, the surface and colour still differ significantly from real wood. Nevertheless, 3D wood could become interesting for the furniture industry when developing new designs. Decorations, which could otherwise only be added by a wood turner, could be made cheaply with it.



## OVERVIEW OF THE TOPICS

- 12-17 **Feeling safe: An essay on the meaning of trust**
- 18-19 **Trust in a handshake: An interview with owners Fritz and Michael Egger**
- 20-23 **Control is a thing of the past Companies use trust as a success factor**
- 24-27 **“Mistrust is expensive” Interview with former diplomat Gerhard Reiweger**

Our society is based on trust. But that seems to be in danger right now. What can politics and companies do to win it back – and keep it?

AUTHOR Sead Husic

We sometimes have to put our lives in the hands of others. A fear of flying can be countered if passengers perceive the crew as trustworthy.

One could hardly think of a more trustworthy person than the quiet, older gentleman with combed back grey hair and clever, bright blue eyes. Bernard L. Madoff, operator of an investment fund, was revered in New York as a stock market genius and gentleman. He was considered a philanthropist because he donated large sums to charities – until shortly before the financial crisis, when his house of cards collapsed in 2007. In March 2009, a New York court sentenced him to 150 years imprisonment for securities fraud, money laundering, perjury and false statements to the Securities and Exchange Commission.

Around 4500 victimised investors had trusted him. Madoff had seemingly met their expectations as a man of integrity. History shows that trust is fraught with risk. And yet we trust constantly and everywhere: we go for a walk because we're certain nobody is going to rob us. We share secrets with our friends, we believe that money keeps its value, all motorists adhere to traffic rules and the post office delivers our parcels as agreed.

In a world of specialisations, one must trust the other – because not everyone knows everything. Sociologist Niklas Luhmann saw trust as a means of reducing social complexity. If we trusted nothing and nobody, our lives would be too complicated, and that poses a problem.

### Are we experiencing a crisis of confidence?

Of course, surveys and their sources should also be treated with a healthy dose of scepticism. But when the renowned Pew International Research Center detects a decline in confidence in Western governments, the media also takes note. What's more, the international survey institute Ipsos measured that on average around 65 percent of people worldwide have lost confidence in the media. And one in two mistrusts international institutions. Sociologists explain this worldwide development with the increasing complexity of our world. Globalisation and digitalisation have led to highly complex, non-transparent processes that are becoming increasingly difficult to understand, not only for

# Feeling safe





Almost everywhere, representatives of helping professions are regarded as particularly trustworthy. Nurses enjoy an even higher level of trust than doctors.

→ everyday people. And you don't want to trust a system that you can neither understand nor control.

If it is true that there is currently a crisis of confidence, there is danger ahead for politicians and companies. Populist movements are experiencing an upswing by providing simple answers to complicated questions. The mood is eroding democracies and free markets; it can rub off on business partnerships that are actually good ones. Geopolitical upheavals are also seen as a growing investment risk for international companies. The question is therefore existential: how can lost trust be regained?

**You cannot demand trust, only give it**

We're asking the wrong question, says the British philosopher and professor emeritus of Cambridge University, Onora O'Neill. O'Neill has worked intensively on trust and its role in society. "If everyone is now demanding that confidence be strengthened, that is not a wise goal," says O'Neill. "Trust is something you can give, but not demand." O'Neill therefore advocates reversing the perspective and looking at trustworthiness instead of trust. This means those who want more trust from others will not be helped by any complaints – all that remains is for them to prove that they themselves are trustworthy.

Many companies have recognised this connection. They have made their

production methods transparent so that customers can check the conditions under which their goods were manufactured. They prove that they work according to ecologically sustainable principles and treat their employees fairly. The British department store chain Marks & Spencer, for example, is committed to removing all hazardous ingredients from its supply chain and product range by 2020. EGGER ensures that only raw materials from sustainably managed forests are used along the entire supply chain (see p. 46ff). The idea is to establish clear rules and to prove that they are respected – not for moral but economic reasons. Companies depend on their customers' trust. If they do not consistently deliver high quality

and make their processes transparent, no PR campaign will help. Customers and business partners are less and less willing to tolerate a lack of sustainability standards. The same principle applies to politics: False promises will be unmasked by reality sooner or later. On the other hand, consistency and reliability pay off. A long-term strategy must therefore consist of recognising binding rules and repeatedly explaining and making one's own actions comprehensible (see interview on p. 24ff).

**Trust is built on reliability and personal contact**

When Madoff was still trusted by his clients, there were a few financial math-



## THE TRUST GAME

Economists understand trust to be the positive expectation of cooperation where there is a risk that the other party will gain an unjustified advantage. After all, where you don't have to be afraid of being tricked, you don't have to rely on trust.

The trust mechanism was investigated in a now classic experiment: the trust game. The rules: Two players receive a certain amount of money. Player 1 can send part of it to player 2. The researcher triples the allotted amount and gives player 2 the sum. Player 2 may now return part of it to their teammate.

If player 1 assumes that player 2 will share fairly, they could send them the full amount – this way, both of them would have the most money possible. If, on the other hand, player 1 believes that player 2 will act selfishly and keep everything, they should not give them anything. Economists start

from the latter scenario since the homo economicus always acts purely selfishly.

In the meantime, countless studies have proven that this is not the case. On the contrary, the results show that people try not to disappoint the trust placed in them. Usually, player 2 sends money back, and usually the amount they send is proportional to the amount they received from player 1 initially. And this is also the case, even if there is no second round.

One explanation for this is that trust is evolutionary. Scientists at the Max Planck Institute for Evolutionary Anthropology in Leipzig wanted to find out and adapted the game for chimpanzees. In fact, monkeys give each other the benefit of the doubt, but adapt it to the actual behaviour of the other player. Very human, basically.



→ ematicians who were convinced that his profits were not possible unless his business was breaking the law. For years, however, the Securities and Exchange Commission did not follow these indications carefully enough. The intransparency of Madoff’s business model should have raised suspicion. This case shows

that blind trust is unreasonable, sometimes even negligent.

If we are talking about a crisis of confidence, then the solution cannot be to throw all scepticism overboard in future. Instead, we need to consider what a world should be like in which people trust each other again more? The philosopher Onora O’Neill has already given us the answer: “We trust those who act trustworthy.” Trust is not a blanket belief in systems functioning correctly, but the result of personal experience. Anyone who has behaved reliably and honestly thus far will continue to be regarded as a safe bet in the future. Where mistrust

is rampant, it is particularly important to concentrate on direct contact. After all, stable, reliable relationships are the basis for long-term trust – over and above any crisis.

“Trust is given to those who behave in a trustworthy manner.”

Onora O’Neill, Philosopher



CAN THIS SOFTWARE LIE?



Artificial intelligence in everyday life: capturing and evaluating traffic situations

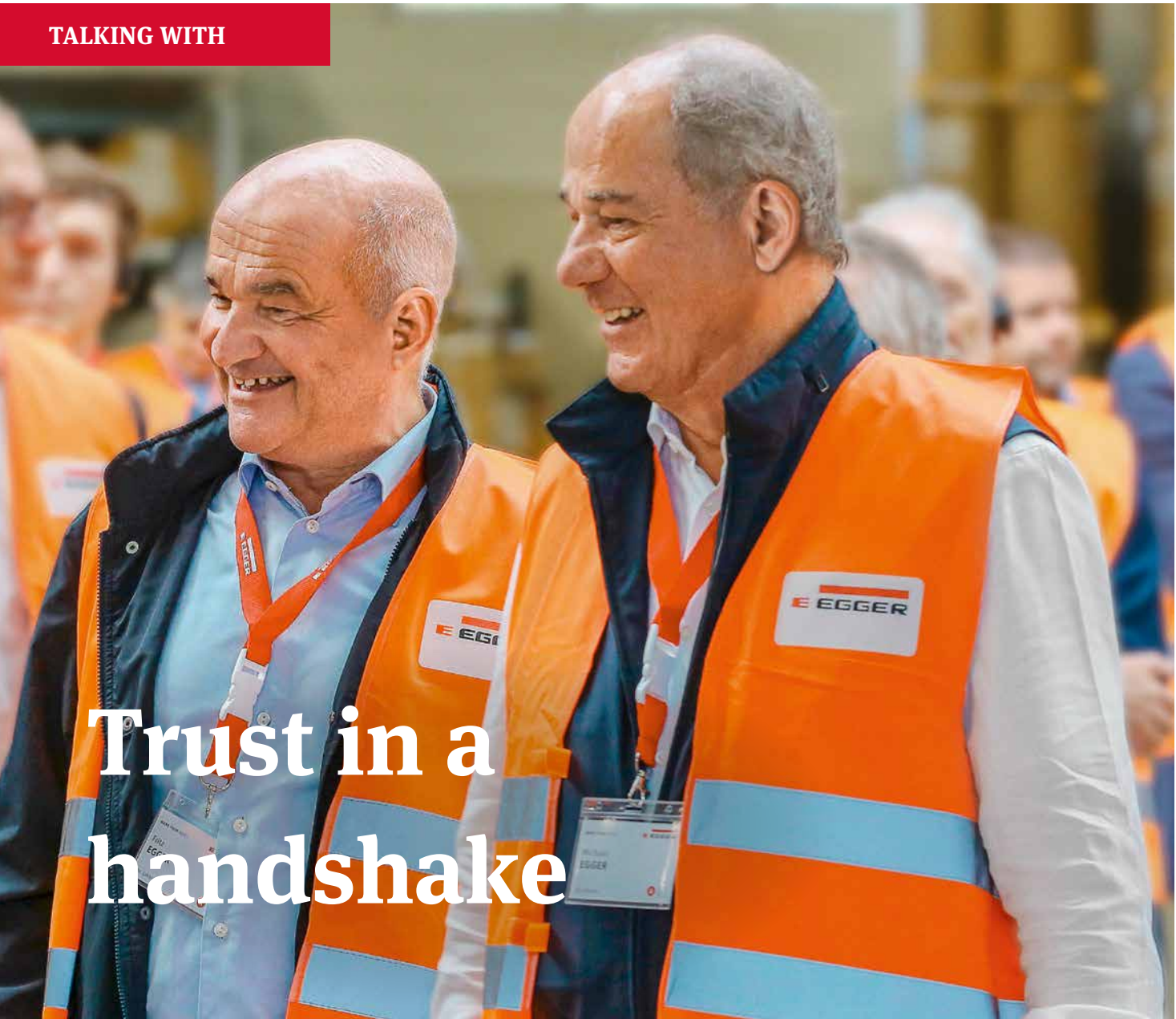
Who would you trust more: a human being or an algorithm? Sure, most people say they would opt for a human being now. A study by Harvard Business School found that we probably misjudge ourselves on this issue. In fact, trial participants were more guided by the recommendation from an algorithm than by the advice of another person.

The question of whether that’s wise is becoming more and more urgent. Facial recognition software, driverless cars, instantaneous translation – we’re outsourcing more and more tasks to systems yet we don’t really know how they work.

Experts such as Adrian Weller from the Alan Turing Institute in London see this as a serious problem. Weller calls for AI systems to become more transparent: Users should be able to understand which variables played a role when making a decision. If software rejects a loan application, it should be clear why this is the case. Transparency would become even more important if algorithms were to influence existential decisions such as court rulings or medical diagnoses in the future.

Firefighters are high up on the international trust scale. Perhaps this is because the results of their work can easily be identified, even by everyday people.





# Trust in a handshake

The owners of the Tyrolean family business: Fritz Egger (left) and Michael Egger (right).

How do you create trust between employees and management – and maintain it? An interview with Fritz and Michael Egger.

INTERVIEWER Manuela Leitner

**How important is trust in the company to you?**

Michael Egger: I believe trust to be one of the most important things in the world, both privately and in business. If trust is lacking, something goes wrong.

Fritz Egger: This is why head, heart, common sense and trustworthiness all come together as the pillars of our family business. This creates trust.

**How does trust change in a growing**

**business? In an internationally active company such as EGGER, now with 9600 employees, you can't know all of them personally anymore...**

Michael Egger: It is important to us that all EGGER employees are valued and treated with respect. It goes without saying that this respect also requires mutual trust. We share our values with our line supervisors. They spread our culture of trust throughout the company.

Fritz Egger: We must also respect differ-

ent countries' cultural differences. The company's core values apply at all sites, whether in Russia, Argentina or any of the 19 EGGER plants. This includes the culture of trust. Employees who cannot identify with it will find it difficult to grow with the company.

**Were there any difficulties in dealing with cultures from different countries within the company?**

Michael Egger: Despite the size of the company, we have succeeded in establishing a good, shared culture. However, this also means that we would not tolerate a culture in which employees would not be valued in the way we have exemplified, for example. We have to live up to our values anew every day, we have to work on them. And it is the same with our company culture.

**How do you see the relationship between trust and control? Is it contradictory?**

Fritz Egger: No. After all, trust also needs an element of control. And the more plants our group includes, the easier it is for us to monitor them since we can compare them with each other. EGGER line supervisors are also required to check their employees for punctuality, cleanliness, quality, etc. At the end of the day, it's like being in a family: Here, too, a healthy balance between trust and control is needed.

**Is it a risk for you to fundamentally trust your employees?**

Fritz Egger: It is absolutely necessary to trust one's employees. When we hire a new employee, it goes without saying that we closely monitor whether the cooperation is developing positively. But if we were to mistrust them from the off, it would be contrary to our fundamental values.

**Do you trust people easily? You've met a lot of people over the years.**

Michael Egger: Of course, you have a certain knowledge of human nature. With age, you develop a sense of who you can trust. You learn to interpret things such as handshakes, looks and appearances correctly.

Fritz Egger: Of course, you're also bound to be disappointed once in a while over time. But this doesn't make you dumber, it makes you more experienced and you might be able to judge better next time.

**How do you deal with a situation when trust is dashed?**

Fritz Egger: That depends on what exactly didn't work out in that particular situation. If someone has made a mistake, admits it and tries to fix it, it is not a breach of trust. But if someone makes a mistake and tries to cover it up with new mistakes, then trust is called into question and it is necessary to have serious discussions. Allowing mistakes to happen in general – to learn from them – is also a matter of trust.

Michael Egger: The freedom to act also plays a role here. You also have to give your employees the opportunity to try things out. And that, in turn, requires trust. If we hadn't sometimes dared to try something, we certainly wouldn't have been able to develop the company in this way.

**How important is the personal element when concluding contracts?**

Michael Egger: Our father was a farmer, he shook hands on something and it was then binding. Of course, this is no longer possible given the size of the company today. Nevertheless, it is important to show the contract partner confidence and to present yourself as trustworthy. Personal contact will always be one of the most important aspects for us.

Fritz Egger: And, of course, this requires that we trust our employees and that they are fair towards our customers and

suppliers. Otherwise we end up caught in a tangle of e-mails and no one knows the other anymore. Personal contact distinguishes us as a company. And we are convinced that this path is the right one in the long term.

## PORTRAIT

### MICHAEL AND FRITZ EGGER

Sons of company founder Fritz Egger Senior, Michael and Fritz have successfully established the company on the international market. These days, the two owners are no longer involved in the operational management of the business, yet have a significant influence on the Board of Directors when establishing strategic guidelines to develop the company.



# Striking the right balance

Trust is part of good company culture. To earn that of your employees, you need a bit of control.

AUTHOR: Sead Husic

*Team members are like nodes in a network. If a player changes, the entire system changes.*

Before David Packard founded a company with William Hewlett that would later become one of the largest technology groups in the USA, he worked as an electrical engineer at General Electric. In his autobiography, Packard recalls his time as an employee in the 1930s. He particularly remembered how carefully General Electric had guarded the working materials – fearing that employees might steal something. A measure with doubtful success, as Packard writes, since the employees resented their bosses' mistrust. "And so they stole tools and spare parts whenever they could."

Those who want to increase productivity should refrain from excessive performance checks. In a study conducted by the German Economic Institute in Cologne (IW), researchers found that employees who were not monitored for working hours, illness and performance were more satisfied with their work – and more willing to perform. When you feel as though you are taken seriously, you can push yourself further. This applies to all companies, regardless of size. But there are differences, too.

**The small company: Where everyone knows everyone – and depends on everyone**

In a small company, the relationship between employees is inevitably particularly close. This means, everyone knows each other well. But it also means that if a person does not do their job, everything gets stuck straight away with their colleagues. This is another reason why it is important for everyone to be able to rely on each other.

Doreen Hanetzok is the Managing Director of Tischlerei & Küchenhaus Velten. The company with 16 employees is located an hour's drive from Berlin. "For me, trust is the basis for meaningful cooperation," says Hanetzok. "Otherwise, I'd have to stand next to my staff every step of the way and examine every move." It also means measures such as digital time recording are not required. The freer employees can be when organising their working hours, the better – as long as the end result is right. But trust is not a one-way street. As Managing Director, Doreen Hanetzok needs her employees to trust her entrepreneurial solutions. Doreen Hanetzok therefore does not want to completely do without control. Careful quality control, for example, is indispensable. "After all, the company must be accountable for all errors."

**The mid-size company: Safety thanks to checks and an atmosphere of trust**

If the company is somewhat larger, trust is based on more rules. This is the case for the Nüssli Group in Hüttwilten, in the Swiss canton of Thurgau. Nüssli manufactures temporary buildings for special events: grandstands, stadiums, pavilions and exhibition halls. Over 450 employees work for this global player, which is represented in 23 locations worldwide. Mark Breitenmoser is Co-Director and Market Officer of Nüssli. "There can be no blind trust with us," says Mark Breitenmoser. "Many projects carry health and safety risks, so strict controls are necessary just for safety reasons." Control systems are therefore used to provide maximum technical guarantees. After all, stages, stands and pavilions are ultimately used by thousands of people. →





*They are all in the same boat: on a racing yacht, clearly defined positions from the 18th man to the strategist successfully guide the team across the finish line.*

→ Two years ago, the company erected a roofed grandstand for a football club in Kiel during the season. The public was already using one half of the grandstand while the rest was still being built. To ensure spectator's safety, inspections and approvals had to be carried out before each match. Employees had to regularly interrupt their work for new checks.

The working climate is not put at risk by these controls, says Breitenmoser. "After all, it goes without saying that we rely on an atmosphere of trust throughout our entire operation." Nüssli cultivates an open feedback culture and encourages employees to make their own suggestions for improvement. "For me, trust is one of the most important conditions for economic success."

#### **The large company: Open discussions create trust**

Dieter Siempelkamp also values the topic of trust highly. "For me, this is one of the most important questions influencing the success of a company," says the honorary chairman of the technology company of the same name, headquartered in Krefeld, Germany. He took over the management of the company from his father in 1970 and turned it into an international company before retiring in 2003. Today Siempelkamp employs over 3000 people worldwide, with the largest proportion of the turnover being generated in the plant and mechanical engineering areas.

The company has a long-standing partnership with EGGER: At the end of the 1980s, its main plant in St. Johann (AT) doubled its daily output in one fell swoop thanks to the first continuous chipboard press in the German-speaking region, the "ContiRoll®" from Siempelkamp.

Dieter Siempelkamp observes that trust can fluctuate greatly over time. Economic fluctuations and crises have an impact on employees' mood. "Earlier – in the



*The whole is more than the sum of its parts: Team spirit can be trained, as proven by team sport.*

50s and 60s – the mood and feelings were positively supported by the development and boom across all industries," he says. "A culture of trust was also developed faster in companies in the past." Today, on the other hand, companies are exposed to greater fluctuations – and must act accordingly. Open, trusting dialogue plays a central role in this.

Siempelkamp had many long conversations with candidates interested in filling the new Managing Director position before the role was awarded to Christoph Michel at the beginning of 2019. His first official duties also included introducing regular discussions with staff whom he visited in their respective offices. Having direct exchanges, which is at the forefront here, will also be crucial for CEO breakfasts in the future. This is intended to improve internal networking among colleagues. "Employees should also have an opportunity to meet me in a relaxed atmosphere," Michel explains. Because last but not least, a shared meal should serve to build mutual trust. Of course, it's no longer enough to speak directly with several thousand employees. Good internal communication runs through various channels. "It is precisely because, as the new CEO, I lead the company with my own personality, drive projects and changes; it is important to hold ongoing discussions across the

organisation and establish a connection with employees," says Michel. This makes decisions easier to understand.

The following conclusion can be drawn: trust and control are mutually dependent. This is also confirmed by a study completed by a British-Dutch research team. Control can therefore have a positive effect on employees' trust. They consequently experience the company more predictably and fairly. What's more, controls strengthen employee belief in the company's ability to deliver on its promises to them and customers alike. If that's true, it's about striking the right balance between trust and control.



# “Mistrust is expensive”

Gerhard Reiweger was the Austrian ambassador to Romania and Bulgaria. In our interview, he explains how to assert one's own interests without spoiling the mood.

AUTHOR Ariane Breyer

**When is an ambassador successful? If they are ultimately able to assert their country's interests?**

Of course, an ambassador must represent the interests of their country. But the question is how do they do it? The essence of diplomacy is not to get confrontational. As an ambassador, you have to state your position, but always be willing to talk. This is based on mutual trust.

**But if these positions are completely irreconcilable, are there any tricks that will make it easier to reach the goal in negotiations?**

What kind of tricks are we talking about? Diplomats must be able to look behind the scenes. They should be able to obtain information more easily and learn things faster than the public. This requires access to high-ranking personalities who can make decisions and are influential. You can only get a last-minute appointment with the Minister of

Economic Affairs if you are appreciated as an interlocutor. Manipulation and dishonesty destroys the basis of your work.

**Perhaps this secrecy is the reason**



***“You always have to make new friends in the diplomatic profession.”***

**Gerhard Reiweger**, Austrian ambassador (retired)

**why it is perceived that diplomats must master manipulative behaviour.**

Perhaps our special status also arouses mistrust: the beautiful house, the car, the office with staff. Yet, this status carries an important function since it allows us to approach high-ranking



Ahead of a gala dinner hosted by the British Queen: even at the highest level, eating together has always served to build trust above all.



→ interlocutors. What's more, the many meetings and dinners are not for personal entertainment, but for the purpose of building and maintaining relationships that can be relied upon later if necessary.

**How do you behave in a way that makes you seem trustworthy?**

You have to be particularly discreet. People only tell you something when they can trust you not to go public with it. You also have to be consistent. You are trustworthy if you behave as expected. If there are conflicts between governments, diplomats should also address them. And in a way that does not jeopardise negotiations and keeps lines of communication open. The essential thing is showing sensitivity towards the interlocutor and the situation, and using the right tone.

**Can you learn to do that?**

Yes, but not from a textbook; you learn it from your environment. Calm and reserved language is necessary – it quickly becomes a matter of course in this profession.

**Were there situations during your career in which the basis for discussion was endangered?**

After the 2016 parliamentary elections in Romania, the government wanted to change a law and it was suspected that the change was to protect corrupt politicians – but the population took to the streets for weeks. Some foreign embassies expressed their “concern” about the issue; in the language of diplomacy, this is clear criticism. Austria also had to decide whether to comment publicly on the issue.

**What did the Federal Foreign Office in Vienna decide?**

I was instructed, together with other EU countries, to publish a critical opinion. In the end, the Romanian government withdrew certain emergency decrees as a result of public pressure.

**And did mutual trust suffer from this criticism?**

Of course, the Romanian government was not happy. But also not surprised; after all, we had made our position clear time and time again. The question is whose trust you want to gain. We have consolidated the confidence of Romanian society as a whole in Austria's consistent attitude by committing ourselves to the rule of law.

**You sometimes get the impression that – in politics and economics – rather loud, unpredictable characters are successful.**

This may be so in exceptional cases, but as a general rule I doubt it. Studies show that the most successful countries economically are those that cultivate a good culture of trust. In societies where confidence levels are low, economic development also comes to a standstill. In Austria, we focus on the value of a handshake. There's an important insight in this: if I first have to critically question every agreement and don't trust my partner, there are transaction losses. Mistrust is expensive.

**Austria is the second largest investor in Bulgaria, and third in Romania. How important were business interests for your work?**

Close economic cooperation is also based on the fact that Austria shares close cultural ties with these countries. And since a large proportion of the investments concern politically sensitive areas such as banks or the energy sector, economic issues played a very important role in my work.

**The rise of populist parties is often described as the result of a crisis of confidence. Where does this loss of confidence come from?**

I think it's the other way around: for years, populist movements have worked to stir up mistrust in established political structures in society. Criticism is certainly necessary of all institutions. But in order to function, a society needs

a certain level of basic trust. It seems to me that society is now becoming too divided.

**How can we solve the problem?**

By clearly saying again and again when populists spread lies and make false promises. I am convinced that reliable, sincere conduct pays off in the long term.

**You were the Deputy Director of the Diplomatic Academy in Vienna for several years. What is needed for a successful diplomatic career?**

The diplomatic service is looking for team players with confident communication skills. Intercultural openness is important and taking pleasure from new things. You must always be prepared to establish contact with strangers, to acquire trust. You always have to make new friends in the diplomatic profession.

**Even with those you don't get on with personally?**

As with everything in life, you can't always choose people. Nevertheless, you have to try to keep communication going, even when things get uncomfortable. That's basically the only trick.



**ABOUT**

**GERHARD REIWEGER**

Born in Vienna, he was the Austrian ambassador to Bulgaria from 2010 to 2014, and then represented Austria in Romania until October 2017. Reiweiger studied German and English language and literature, and subsequently attended the Diplomatic Academy of Vienna, where he was Deputy Director from 1997 to 2010.



# E\_SOLUTIONS

“The reputation of the craftsman trade must improve so that it remains attractive for young people.”

Hermann Kaufmann, Professor of Architecture, Munich Technical University, “Prefabricated construction? No way!” (pages 30-33)

## We Are EGGER

### NINA FRIGGER

Expert in protective clothing, Brilon (Germany)

Whether it's trousers, jackets or polo shirts, EGGER employees around the world have been wearing the same industrial safety clothing for ten years. “You can now immediately see who is a colleague at every plant,” says Nina Frigger, who helped set up the project. Frigger began her training as an industrial clerk at EGGER in 2009, and since 2017, she has been the lead buyer for workwear and occupational safety for the entire group. She helped develop the designs and decides which fabrics, reflector strips and zips to use. As she is in constant contact with colleagues from all plants, Nina Frigger immediately notices any changes that need to be made. “Close cooperation enables us to identify opportunities for improvement at an early stage and thus guarantee the highest possible level of safety for our employees.”



### ELLA XIA

Marketing Project Manager China, Shanghai (China)

Ella Xia completed her Masters in Business Administration in Germany and worked in Saarland for several years before returning to China as a Marketing Expert. There, she most recently worked in the construction industry. Since March 2018, Ella Xia has been one of nine members on the EGGER team in Shanghai. She advises Chinese customers, and plans and organises trade fairs, seminars and marketing events throughout China. Xia herself describes her position as a kind of bridge between the headquarters in St. Johann (AT) and local customers. “I am responsible for bringing EGGER values to China,” says Xia. This also means that she always ensures that EGGER quality is maintained down to the last detail: from how products are presented in dealers' showrooms to the edges on trade fair booths.

### REGINALD BURKS

Purchasing Manager, Lexington, NC (USA)

The day when the new EGGER plant in Lexington starts operating is approaching. Reginald Burks is there to make sure that everything runs smoothly. As Purchasing Manager, he is responsible for procuring all equipment from tools and cranes to building materials. “As the purchasing manager of a plant under construction, you have to think ahead: what could happen, how can we make provisions, where can we get spare parts quickly?” He has already negotiated contracts with suppliers and service providers. Burks holds an international MBA and worked for a German chemical company before taking up the position in Lexington. By the way, he also says the fishing is excellent there.

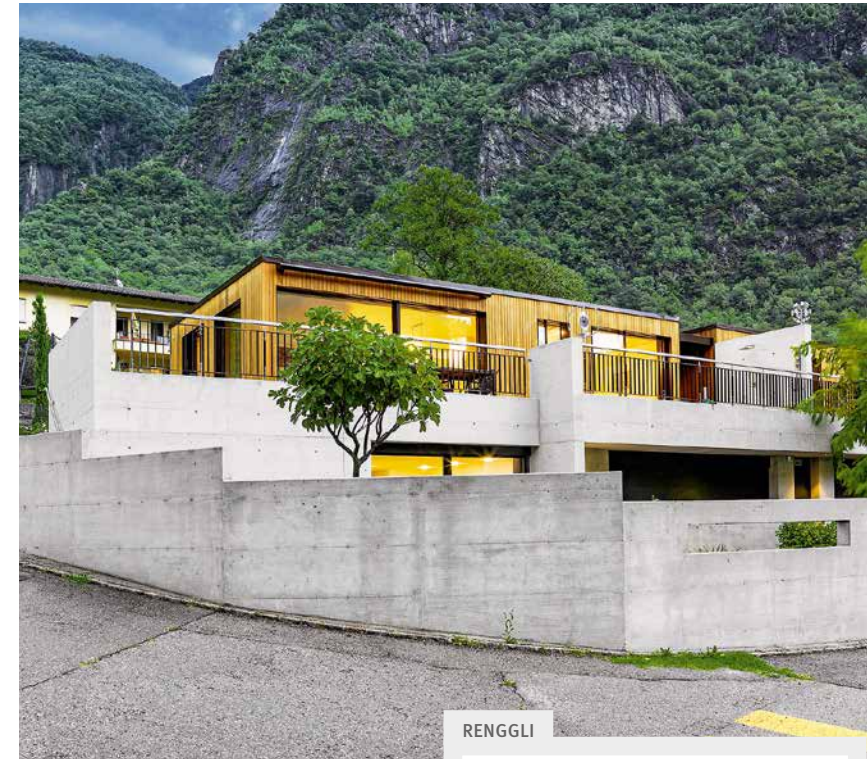






# Prefabricated construction? No way!

- 1 The new wooden “Ho Ho” high-rise in Vienna sees a strong concrete core meet the precise work of a carpenter.
- 2 Thanks to a modular design, the wooden house features a unique design.



RENGGLI

## MODULAR DESIGN

Renggli AG is a family business with over 200 employees. The company is one of the leading specialists in energy-efficient construction using wood. Renggli builds houses for private individuals, companies and the public sector – as a general contractor or wood construction partner for planners and architects.

Serial wood construction is changing the industry – and changing the timber engineering profession. Is digitalisation driving out craftsmanship?

AUTHOR Judith Jenner

It is a spectacle for the entire neighbourhood when trucks from the Swiss company Renggli arrive. In just one day, prefabricated wooden elements are turned into an entire detached house: using a hybrid, wood-system or modular design. And yet the houses don't all look the same because the company's own construction system allows highly individualised buildings to be planned. Layout, size and number of windows and doors – everything can be chosen flexibly.

The advantages are obvious: The customer can look forward to cost certainty and an ecologically sustainable house. The planner retains his creative freedom. But what does system housing construction do with timber engineers? Will the craft be replaced by digital technology? Does the high number of elements being prefabricated gradually make material experts superfluous?

Wood is a trendy material. Ever higher timber skyscrapers are making a name for themselves around the world. But wood is also gaining ground where it is not possible to reach such heights. Austria is leading the field in Europe, where the proportion of timber buildings rose from 25 to 45 percent between 1998 and 2013. In Switzerland, a quarter of all new buildings are now built with wood, and in Germany it's around a fifth. Concerns regarding fire protection, sound insulation, static and durability have largely been dispelled; from detached homes to complex office facilities, anything is now possible.

**Individual wood constructions in series are becoming more and more important**

Holzbau Saurer – based in Höfen, Austria – is usually booked months in advance. For over five decades, the

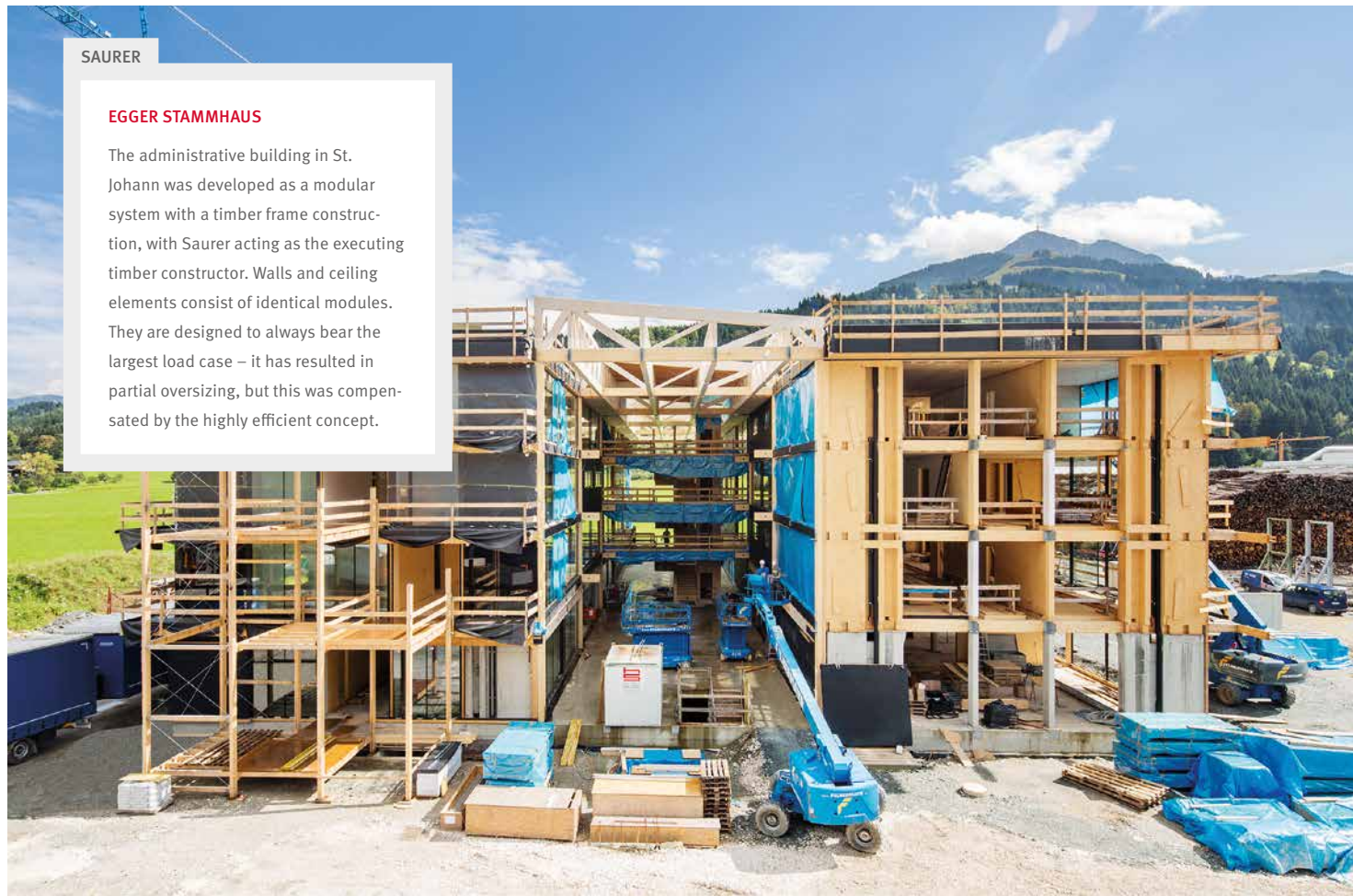




SAURER

**EGGER STAMMHAUS**

The administrative building in St. Johann was developed as a modular system with a timber frame construction, with Saurer acting as the executing timber constructor. Walls and ceiling elements consist of identical modules. They are designed to always bear the largest load case – it has resulted in partial oversizing, but this was compensated by the highly efficient concept.



The EGGER administrative building in St. Johann was mainly built from our own products.



***“In future, serial wood construction will be an important subdivision for all timber constructors.”***

Hermann Kaufmann, owner, HK Architekten

→ family-owned company has been one of the largest and most innovative players not only regionally, but internationally too. This has particularly been the case since Saurer combined its core business – traditional wood construction – with the possibilities of series production. In summarising the benefits, owner Wolfgang Saurer says that “the interior can now include self-supporting spaces that can be designed very individually and can easily be adapted to new requirements.”

At Saurer, around 100 employees look after customers as a full-service partner,

right from design through to execution. Modern 5-axis robots manufacture the components, which are produced individually for each building project. “I don’t think that we as timber engineers are degraded to mere fitters,” says Wolfgang Saurer. He sees modular construction as an opportunity for the entire industry. “Our comprehensive knowledge, end-to-end consulting and support of our customers are still very much appreciated.”

#### **Integrative planning process**

In industrial and commercial construction, partly also in residential construction, the executing wood construction company is often already involved in the planning process. This integrative planning offers the great advantage that all trades are coordinated and optimised – they are looking further than simply beyond their own noses. This, in turn, minimises conflicts on the construction site.

“In future, serial wood construction will be an important subdivision for all timber constructors,” expects Hermann Kaufmann, Professor at the Institute for Building Technology and Design at the Technical University of Munich and Managing Director of HK Architekten. Robot production and the associated design process will become more economical as quantities increase. Kaufmann is convinced that “a lot will happen in this field over the next few years”. “But in order to meet the currently foreseeable demand, certain standards and concepts must be developed for series production.” Kaufmann can imagine a “virtual factory” with a clear division of labour: One department takes care of planning and sales. It develops, markets and organises projects. In addition to this, there are partner companies that manufacture elements according to defined standards and fitters that assemble these elements on the construction sites. “The cooperation model would thus ensure that smaller wood construction companies could also participate in this market, depending on their capacity,” says Hermann Kaufmann when describing his vision.

#### **Cooperation along the entire value chain**

Renggli is well on its way there. In its production plant covering over 8,000 square metres, orders to manufacture elements of ceilings, roofs, walls or even entire buildings can be carried out at short notice. To cope with capacity constraints in larger projects, the company repeatedly outsources parts of its

production to other timber engineers. When applying for a large project, it is often already taken into account that the order cannot be handled alone and would exceed capacities. In this case, the company makes provisions in advance by bringing other companies on board. Renggli therefore cooperates with wood construction companies along the entire value chain.

The different forms of cooperation – based on the type and size of the project – can exceed the peak loads of larger wood construction companies. This gives smaller timber engineers the opportunity to acquire complex, exciting projects. “Altogether, it’s a win-win situation for customers and wood construction companies alike,” says Alain Barmettler, who is responsible for marketing and communication at Renggli.

Hermann Kaufmann expects that the digitalisation of wood construction companies will continue. However, against the backdrop of growing market acceptance, this requires greater importance to be attached to wood construction within architecture and engineering faculties at colleges and universities. “It is particularly important to ensure that the reputation of the craftsmanship trade improves so that it remains attractive for young people,” emphasises Hermann Kaufmann.

Hermann Kaufmann does not necessarily see these steps towards industry 4.0 in wood construction competing against the craft of wood construction. “Since future wood construction will not only

***“A win-win situation for customers and wood construction companies alike.”***

Alain Barmettler, Head of Marketing at Renggli





## FIVE THINGS ABOUT

# Titanium dioxide

This raw material makes many products bright white, including the paper in EGGER's decorative surfaces. Five facts about this versatile titanium dioxide pigment that is in demand worldwide.

## 1 RUTILE

The titanium dioxide pigment was discovered at the end of the 18th century in the mineral rutile and also mainly occurs in ilmenite. Rutile shimmers in dark colours, mostly reddish brown to black – and yet is the most important raw material for brilliant white. It was first put to industrial use in Norway and the USA in 1908. Titanium dioxide is considered to be multi-talented: it not only has the highest opacity, but is also thought to dissolve dirt in self-cleaning window glass. When added to wallpaper or paint, it neutralises toxins in air and water.



## 2 COSMETICS

For many different industries, titanium dioxide is considered to have no alternative. For foodstuffs, this white dye is said to be up to five times more effective than alternatives such as silicon dioxide or calcium carbonate. The same applies to cosmetics, where titanium dioxide also bears the designation CI 77891 and makes toothpaste bright white, for example. Even the protective power of many sun creams is based on nanoparticles of titanium dioxide. The tiny 1 to 100 nanometre particles form a mineral UV filter that simply reflects sunlight – unlike a UV filter that converts UV rays into heat. Titanium dioxide therefore protects skin from chemicals.



## 4 MOON

Rutile has been found in about 6,000 locations worldwide. With a world market share of around 40 percent, China is the market leader in extraction and processing, followed by the USA, Australia and India. Ilmenite covers around 47 percent of demand, two-thirds of which comes from Canada, Australia and South Africa. Scientists at NASA's Goddard Space Flight Center also suspect large deposits of ilmenite are to be found on the moon. This is good news since this multi-talented element could even be used to produce oxygen for a lunar station.



## 3 PRODUCTION

There are various processes for producing white pigment from titanium dioxide. Acids or chlorine are produced as by-products, which nowadays are reused without harming the environment. Stricter environmental regulations and the after-effects of the economic crisis are reducing the supply of titanium dioxide. Production is concentrated on five manufacturers worldwide, whose prices are rising dramatically. About 70 percent of titanium dioxide resources are used in paints and lacquers, and about 25 percent in plastics.



## 5 MOZZARELLA

Titanium dioxide is found in many products in which few would suspect it. It gives industrially produced mozzarella its appetisingly bright white colour. In Europe, E171 food colouring is listed on the packaging of chewing gum, icing for cakes and ice cream. Scientists are currently discussing whether it is safe to eat, which is why France is suspending the use of E171 in foodstuffs for one year. Other countries in Europe perceive there to be no risk. When used as a powder, the EU will demand it be labelled with "May cause cancer if inhaled" in future. Its use as a pigment for colouring surfaces is harmless to consumers.





These days, marble  
can also be cosy:  
Sportswear by Dan-  
ielski.



The green “Verde Patricia” marble creates accents in the puristic design by De Meester Vliegen, a Belgian architectural office.

# The comeback

How does trendscouting work?

A case study using marble as an example.

AUTHOR Ariane Breyer



Popular marble designs from EGGER: Torano (above) and Cipollino (right).



In the beginning, there was a mere side table with a marble top. It stood there, nestled among the exhibits in Zona Tortona in April 2016, somewhat old-fashioned, like a greeting from the past. But on the contrary, here in the hippest part of Milan Design Week, nothing is accidental. If you can find marble sideboards on any young designers’ exhibition stands here, they are surely guiding you towards the future. They’re a sign announcing something new. “Trendscouting is like collecting puzzle pieces,” says Klaus-Dieter Monhoff, Head of EGGER Decor Management. “If we see a new, interesting look, we always ask what it means.”

We refer to a trend when a design is so successful that it can be found in many different product areas. It can take years from the trend first appearing before it is implemented in a product.

First it appears sporadically, as a test, then more often – and suddenly it is everywhere. Trends are not created by large companies or “trendsetters” at the drawing board. Trends are virtually created by themselves. They have a momentum of their own, they can’t be controlled. A good trend scout will recognise a new trend as early as possible, earlier than others.

But a good trend scout will also sense whether a new idea will flop. Klaus-Dieter Monhoff has already seen many new, interesting ideas, although many failed early on. Bamboo – a gimmick. Teak – an expensive flash in the pan. But Monhoff immediately had a good feeling about marble. “The material had almost completely disappeared from the scene,” he says. “Then it has potential and it’s fresh again.” In 2016, he and his team, which now includes new faces, found more and more puzzle pieces. The marble worktop at an exhibition for kitchen suppliers; solid and not to be overlooked. Then at the end of the year, one of the young designers’ stands at the 100% Design exhibition in London featured mobile phone cases in faux marble. Mobile phone cases! When a design can be found on short-lived items, it means that it has broad appeal. It was now clear that marble was going to be a big deal.

## Research in everyday life

Monhoff’s Decor Management department is located in Brilon. They plan trade fair appearances, design new decors – and work continuously to track down future trends. They research everywhere: on social media platforms such as Pinterest, in architecture magazines, in hotels and cafés. And, of course, at relevant trade fairs: at the Courtray Design Biennale Interieur and the 100% Design in London, as well as the Cersaie Bologna tile fair. “We look at all product areas that we find exciting,” says Monhoff. Of course, he also visits leading industry trade fairs, such as the International Motor Show in Frankfurt. While other visitors pour over engines, Monhoff checks the stand material and crawls into cars to smell the covers and admire the workmanship of the dashboard.

And so the information is gathered, piece by piece. “Over the course of a year, you get a feeling for what’s





→ happening,” says Monhoff. This feeling eventually grows into a sense of certainty. At the end of every year, EGGER prepares a presentation for customers, forecasting which topic will be particularly important in the coming year. Were there enough puzzle pieces to place bets on marble by the end of 2016? Or was it still too early?

**Sustainable and high-quality**

At this stage, the design developer switches from collecting circumstantial evidence to analysing it. They must step away from the tiny details and zoom out to the big picture. After all, every design trend is dependent on overriding social developments. “Sustainability is currently one such meta-trend,” says Monhoff. Now everyone knows what climate change is and that resources are finite. As a result, customers do not replace their furniture every season, but plan to keep it for as long as possible. They spend more money on individual pieces of furniture – and that’s something you can see.

But the fact that marble can be classified as part of the sustainability meta-trend does not make it the material of the moment. There had to be more than that. “Trends evolve step by step,” explains Monhoff. “Abrupt breaks are rare, and instead we see small further developments.” A trend is therefore the logical continuation of its predecessor. So anyone wanting to know in 2016 whether it’s time for marble must look at the previous trend. And what was it? White. White had been on the scene since 2007 when streets were suddenly filled with white cars, clubs were filled with white jeans and the most expensive computers and smartphones were white. The peak then passed in 2016. Something new was needed – but nothing too new. And what is marble but white with fine lines? The Decor Management team wrote in the 2017 forecast that marble was making a comeback.

It has all been theoretical so far. It’s at this point that someone needs to put this idea into practice, and this is where it is decided whether the forecast was accurate. Peter Fabri is the practical man

on the EGGER Decors team. Fabri is a trained media designer and has been responsible for decor development since 2014. Previously, the company had purchased all its decors from partner printers. Nowadays, Fabri’s team develops a third of them itself.

Peter Fabri works in the Designlab, a few minutes walk from the main building in Brilon. All kinds of materials are stored here, hand-picked and processed by Fabri: meter-long planks that he planed off and glazed to give them the right shine. Concrete slabs that he poured himself to achieve the desired structure. And blocks of marble. He searched stone merchants in the local area for days to find them. “The colour may not be beautiful, but that doesn’t matter, we can rework it,” says Fabri. “But the grain is perfect.” He had to



Top: Material mix at the EGGER-ZUM 2019. Bottom: Marble decors from the EGGER collection.

Marble tiles are timeless, while marbled mobile phone cases (here by Trendbytrend) are a modern trend.



The market caters to every taste offering marble-inspired adhesive films for your beloved laptop.



break the block into several pieces to transport it at all and place it in the scanner. It’s over a metre long and wide. Fabri and his graphics team then process the scans on the computer. When it comes to marble decors, this process takes several weeks since the pattern repeat – the smallest sample unit – was so large. “The pattern should be repeated as seldom as possible so that the decor looks particularly realistic in the end,” explains Fabri.

**Furniture that wows**

When everything looks the way it should, a proof is created to test the print image. A prototype unit then produces the first model decor to present it at the EGGERZUM in-house exhibition. It’s not yet certain if it will go into series production. That also depends on Stefanie Könemann. Within the department, the interior designer is responsible for conceptualising trade fair appearances. “If we only show the decor, it doesn’t have the necessary wow effect,” says Könemann. “But if we show what you can do with it, emotions start to play a part.” That’s why she designs



**“A new trend seldom seems to please you at first glance. It must grow on people.”**

**Klaus-Dieter Monhoff**, Head of Decor Management at EGGER

possible ways to use the decor for the in-house exhibition and has them made by local joiners. In spring 2018, her designs were on display.

In January 2019, EGGER launched a marble design – white with a matt surface – almost three years after Klaus-Dieter Monhoff spotted the little table in Milan. Further decors were added, and now there are five different surfaces. “A new trend seldom seems to please you at first glance,” says Monhoff. “It must grow on people,” as has happened with marble. Whether in the bathroom, kitchen or fashion, you can now imagine it everywhere. Nobody just thinks of grandma’s living room anymore.





“We need a new building culture – not against nature, but with it.”

Rachel Armstrong, Professor in experimental architecture “How we’ll build in the future” (pages 42-45)

## Sustainable living



### HARMLESS STRAWS

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

Plastic bags, straws, cosmetics containers – a large proportion of these products end up in the sea as waste. The Finnish company Sulapac has developed a sustainable material that can do everything plastic can, but without posing a threat to marine animals. It is made from wood and natural binding agents such as sugar cane. Once it reaches the sea, it is digested by microorganisms and broken down into CO<sub>2</sub>, H<sub>2</sub>O and biomass. The material of the future? The ERUi Organic Sustainable Cosmetics brand also focuses on sustainable and environmentally friendly packaging. We will be giving away a selection of their products in our puzzle on page 50.

### TREATMENT IN THE WOODS

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

The health-promoting effect of the forest has long been proven. Oslo University Hospital, together with the Snøhetta architects office, has now developed small wooden cabins that can be set up in nature near the hospital. Patients can head to the outdoor care retreat with its large windows to enjoy the peace and quiet of the forest – and recover faster. The asymmetrical shape is reminiscent of tree houses, while the interior is completely covered with oak wood.



### HOUSE OF THE FUTURE

[www.solardecathlon.gov](http://www.solardecathlon.gov)

The world championship title at the last Solar Decathlon competition was awarded to Romania – for a future project made of EGGER materials. The Solar Decathlon rewards student teams for their pioneering designs of innovative and sustainable building. In 2018, the theme was adaptability to the harsh climates of the Middle East. The Romanian students from various faculties were crowned “World Champions of Communication” and took third place in the sustainability test. EGGER supported the team with products from the furniture and interior design, flooring and building products categories.



# Nature as a master builder

Rachel Armstrong is a pioneering experimental architect. She develops technologies that can bring our homes to life.

INTERVIEW Ariane Breyer

**You’re an architect, yet we can’t enter any of your houses. What exactly do experimental architects do?**

The term Experimental Architecture has been around since the 1970s. Even then, it was all about new materials and new technologies that were not traditionally part of architecture tools. Experiments were used to test and extend the limits of what has been possible thus far.

**Your building material of choice is rather unusual: you work with bacteria, among other things.**

I’m interested in metabolic processes. They are the basis of life and death on our planet, they are the principle that keeps the world alive. And bacteria carry out metabolic processes that can be incredibly practical for us humans.

**What exactly can bacteria do for architecture?**

I am currently working with my team to develop specific spaces for bacteria in which they can fulfil a useful purpose – on the basis of their metabolic processes. You can “feed” these bacteria with the waste that people produce in their buildings. Such as with urine. When bacteria break down urine, they create a waste product: electrons. As humans, we can take advantage of this by using the electricity from this microbial fuel cell to

power household appliances. Bacteria are great, they can turn our waste into new resources.

**That sounds like science fiction.**

But it’s not! There are already projects that make use of bacterial metabolic processes, such as bioreactors using algae (see page 44). These approaches all answer the same questions: How do we manage to create buildings that make their surroundings more vibrant and fertile? How can they help clean up their environment? It is a matter of ecologically oriented architecture that asks how we will live in the future.

**How does it differ to conventional architecture?**

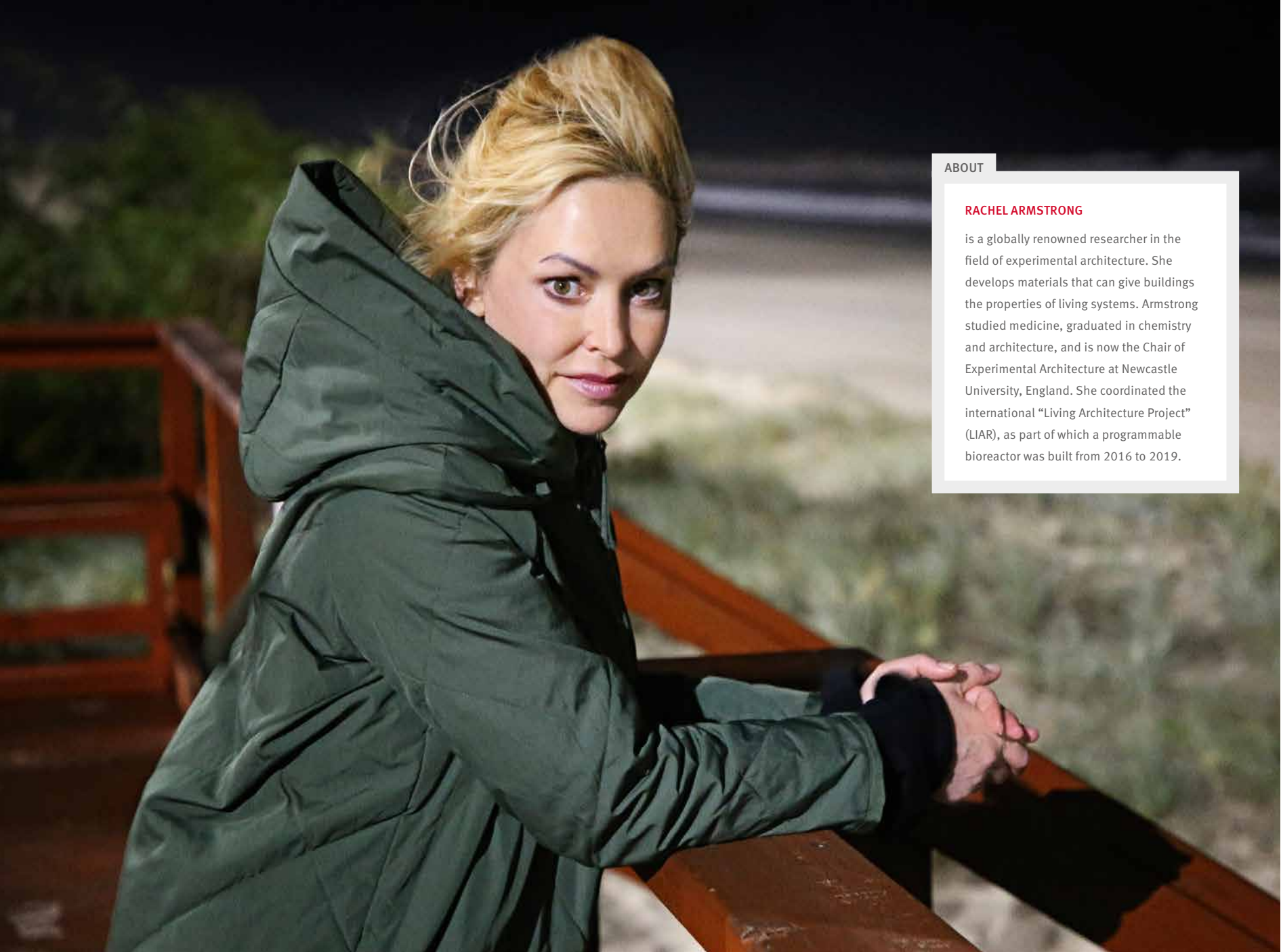
The design process is precisely the other way round. So far, we have planned and built using a huge number of resources; we use a lot of energy. We have become accustomed to this, as well as to the fact that our houses and factories generate a large amount of waste, which we then have to dispose of. I am suggesting that we start the planning process at the other end: with waste.

**You call your approach “living architecture”.**

Yes, because the houses themselves become an active part of our ecosystem.



Phosphate is mined in this bioreactor, part of the “Living Architecture Project”.



ABOUT

**RACHEL ARMSTRONG**

is a globally renowned researcher in the field of experimental architecture. She develops materials that can give buildings the properties of living systems. Armstrong studied medicine, graduated in chemistry and architecture, and is now the Chair of Experimental Architecture at Newcastle University, England. She coordinated the international “Living Architecture Project” (LIAR), as part of which a programmable bioreactor was built from 2016 to 2019.

From this perspective, it is no longer just the person who does the housework – the house helps, too. Depending on which substances are supplied, the house produces fresh water or electricity, while breaking down waste materials. We’d then have a whole different relationship with our home.

**But how do you explain to the microbes what they need to do?**

By developing modules that are responsible for specific metabolic processes: water, air or light. If you know which

waste materials are generated in a building, you know which module types to use. These modules must, of course, be controlled. To do so, my team and I are currently developing a biodigital interface.

**But perhaps many people do not want to communicate with microbes at all...**

You’re right. Bacteria look like slime. They tend to make most people feel uncomfortable. That’s why they disinfect everything. The biggest challenge is not →





Protocells flock to the reefs off Venice – as a biochemical immune system.

→ developing the technologies, but rather changing people’s attitudes.

from a natural one. The city’s foundations would be constantly repaired by a chemical immune system.

**Nature would help protect the city.** Exactly. Such a construction process would not be a violent environmental intervention, but rather represent cooperation – an interaction with the ecosystem surrounding Venice. It would be more akin to gardening. And that is exactly what I mean by living architecture.

**You like unconventional approaches. You already wanted to rebuild Venice with chemical cells.** About ten years ago, researchers successfully produced protocells. These are extremely simple fat cells without their own DNA, but they can move purposefully: towards or away from light, depending on how they are programmed. This makes them an excellent architectural material.

**In what way?** The city of Venice is built on wooden stilts, which are gradually being destroyed by rising water levels. The city is on the verge of sinking. Marine organisms grow on these stilts. My suggestion was to produce special protocells that would transport mineral resources to the stilts. That would attract more organisms and they would accumulate there. Little by little, an artificial reef would emerge and it would hardly be distinguishable

LET THERE BE LIGHT

There is a urine power generator hidden behind these “Pee Power” urinals. Those who use them contribute to illuminating the surroundings. These generators use the microflora in the human digestive tract to generate electricity using microbial fuel cells. Installing low-cost and stand-alone light sources is intended to increase safety, especially in developing countries. “Pee Power” urinals have already been used in refugee camps.

[www.info.uwe.ac.uk](http://www.info.uwe.ac.uk)

LIVING SYSTEMS IN PRACTICE

Bioreactors and microbial fuel cells are energy-neutral and very economical – and therefore ideally suited for use in poorer parts of the world. Here are some of the most interesting application examples.

A BREATHING FAÇADE

As part of the International Building Exhibition in Hamburg, architects and engineers designed a house with microalgae growing on its façade. Microalgae is found in 129 glass containers and generates energy there. Air bubbles keep the water in the containers moving and offer optimal conditions for growth. After the harvest, the algae is fermented to generate biogas. The façade absorbs any sunlight that the algae does not need for photosynthesis and generates heat for the water system in the building.

[www.iba-hamburg.de](http://www.iba-hamburg.de)



LIFE IN OUTER SPACE

The “MELISSA” project (Micro-Ecological Life Support System Alternative) run by the European Space Agency ESA is developing a regenerative system to enable longer space missions. The aim of the project is to obtain food, water and oxygen from organic waste and human excrement, and thus create a circular life support system. Parts of our terrestrial ecosystems are being reconstructed for this purpose.

[www.melissafoundation.org](http://www.melissafoundation.org)





# Care takes precedence

EGGER products are 90% wood. For this reason alone, managing forests sustainably is of existential importance.

The rule to follow here is: trust is good, but complete control is essential.

AUTHOR Till Schröder



A wood processor like EGGER uses around six million tons of absolutely dry wood every year. That's the equivalent of 450,000 lorryloads. The wood comes from the regions around its 19 production sites and is subject to strict control mechanisms. However, the issue of illegal timber has recently been picked up by the media and environmental organisations on a number of occasions. EGGER has a clear position on this: at EGGER, we have a zero-tolerance policy when it comes to illegal logging.

#### How can wood even be illegal?

Timber that is harvested, purchased or sold in violation of the law is a global problem. It particularly affects regions dealing with great poverty, conflicts and weak governments. The phenomenon endangers the CO<sub>2</sub> reservoir and thus also the climate, biodiversity and income of the affected population. The ecological and economical consequences are severe. EGGER overcomes this challenge with the detailed control mechanisms afforded by its due diligence system, which meets the high requirements stipulated by the EU Timber Regulation (EUTR). The

standards of the EUTR due diligence system ensure that timber imported into the EU does not originate from illegal logging or critical sources.

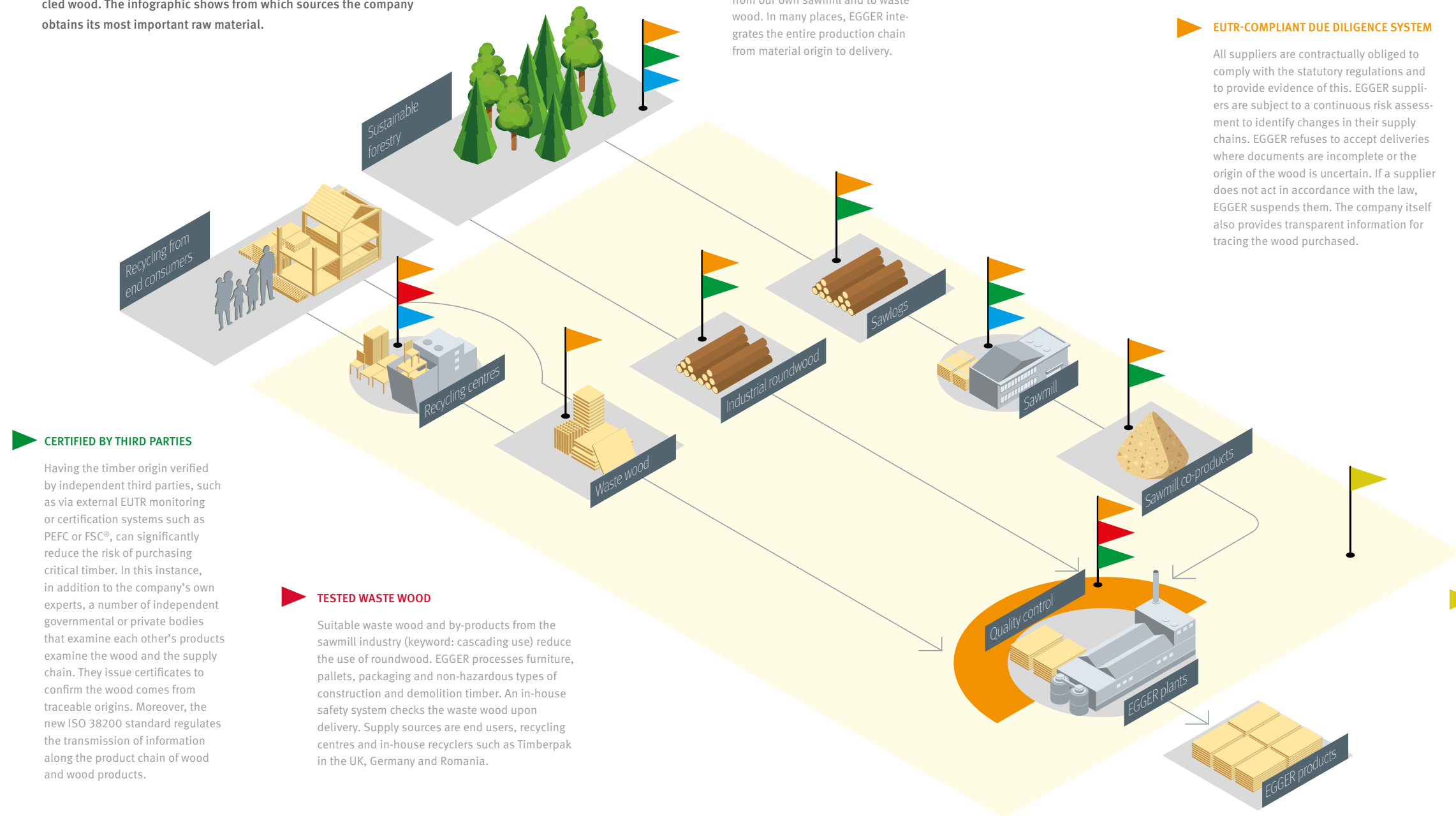
#### What does this comprehensive audit entail?

As part of the EUTR-compliant due diligence system, wood purchasing at EGGER follows a detailed procedure. In the first step, a large amount of information is collected from the respective timber supplier, depending on the region. This information is analysed and evaluated according to selected criteria. If the results point to not insignificant risk, EGGER reacts accordingly. This means that additional information and documents are requested from the supplier or arrangements may even be made for an independent institution to carry out checks. The aim is to support the supplier to make improvements or to suspend deliveries if doubts persist. Third-party control mechanisms such as the Forest Stewardship Council (FSC®) and the Programme for the Endorsement of Forest Certification Schemes (PEFC) are used in addition. Moreover, the internationally →



## AN OVERVIEW OF TIMBER ORIGIN

Tightly controlled: wood-based materials have ecological advantages, provided wood from sustainable sources is used. This is why EGGER relies on assured sources, short transport routes and recycled wood. The infographic shows from which sources the company obtains its most important raw material.



### BACKWARD INTEGRATION

Forests that EGGER manages itself and those from which tree trunks are purchased offer added security. This also applies to sawing by-products from our own sawmill and to waste wood. In many places, EGGER integrates the entire production chain from material origin to delivery.

### EUTR-COMPLIANT DUE DILIGENCE SYSTEM

All suppliers are contractually obliged to comply with the statutory regulations and to provide evidence of this. EGGER suppliers are subject to a continuous risk assessment to identify changes in their supply chains. EGGER refuses to accept deliveries where documents are incomplete or the origin of the wood is uncertain. If a supplier does not act in accordance with the law, EGGER suspends them. The company itself also provides transparent information for tracing the wood purchased.

### CERTIFIED BY THIRD PARTIES

Having the timber origin verified by independent third parties, such as via external EUTR monitoring or certification systems such as PEFC or FSC®, can significantly reduce the risk of purchasing critical timber. In this instance, in addition to the company's own experts, a number of independent governmental or private bodies that examine each other's products examine the wood and the supply chain. They issue certificates to confirm the wood comes from traceable origins. Moreover, the new ISO 38200 standard regulates the transmission of information along the product chain of wood and wood products.

### TESTED WASTE WOOD

Suitable waste wood and by-products from the sawmill industry (keyword: cascading use) reduce the use of roundwood. EGGER processes furniture, pallets, packaging and non-hazardous types of construction and demolition timber. An in-house safety system checks the waste wood upon delivery. Supply sources are end users, recycling centres and in-house recyclers such as Timberpak in the UK, Germany and Romania.

### REGIONAL PURCHASING

EGGER's declared objective is to purchase 90 percent of its wood needs within a 150 km radius of the plants from sustainable sources and directly from the producer.



UKRAINE

### PROVIDING EVIDENCE

In July 2018, the media published critical reports on timber supply chains in Ukraine and Romania. The EGGER Group is known as a strong advocate of sustainable forestry and handling resources responsibly. When it comes to sustainable procurement, it goes without saying that EGGER complies with national and European laws, in particular the EU Timber Regulation (EUTR). In order to fulfil its responsibilities, EGGER subjected its applied Due Diligence System (DDS) and the supply chains from risk countries (Russia, Belarus, Ukraine) to an additional inspection through an independent monitoring organisation, SGS Société Generale de Surveillance SA. This independent audit clearly confirmed EGGER's due diligence system was and is EUTR-compliant. The legality of wood used is thus absolutely guaranteed.

→ recognised ISO 38200 standard offers a worldwide standard. It regulates the transfer of information along the entire product chain of wood and wood-based products.

### Why is timber imported?

The word "import" suggests long transport routes. However, many EGGER plants are located in such a way that they can buy across borders but within the 150-km benchmark, and thus import. Ultimately, it is the distance to the plant and not the location of the national

borders that counts. "In addition to economic aspects, wood that has travelled short distances also offers ecological advantages," says Manuel de Menech, who is responsible for wood purchasing for Eastern Europe at EGGER. The reason for importing can be clearly illustrated using the example of the EGGER plant in Radauti, Romania: the border with Ukraine is only around 25 kilometres away. With a target procurement radius of 150 km, this means that around 45 percent of the purchasing market is located across the border.

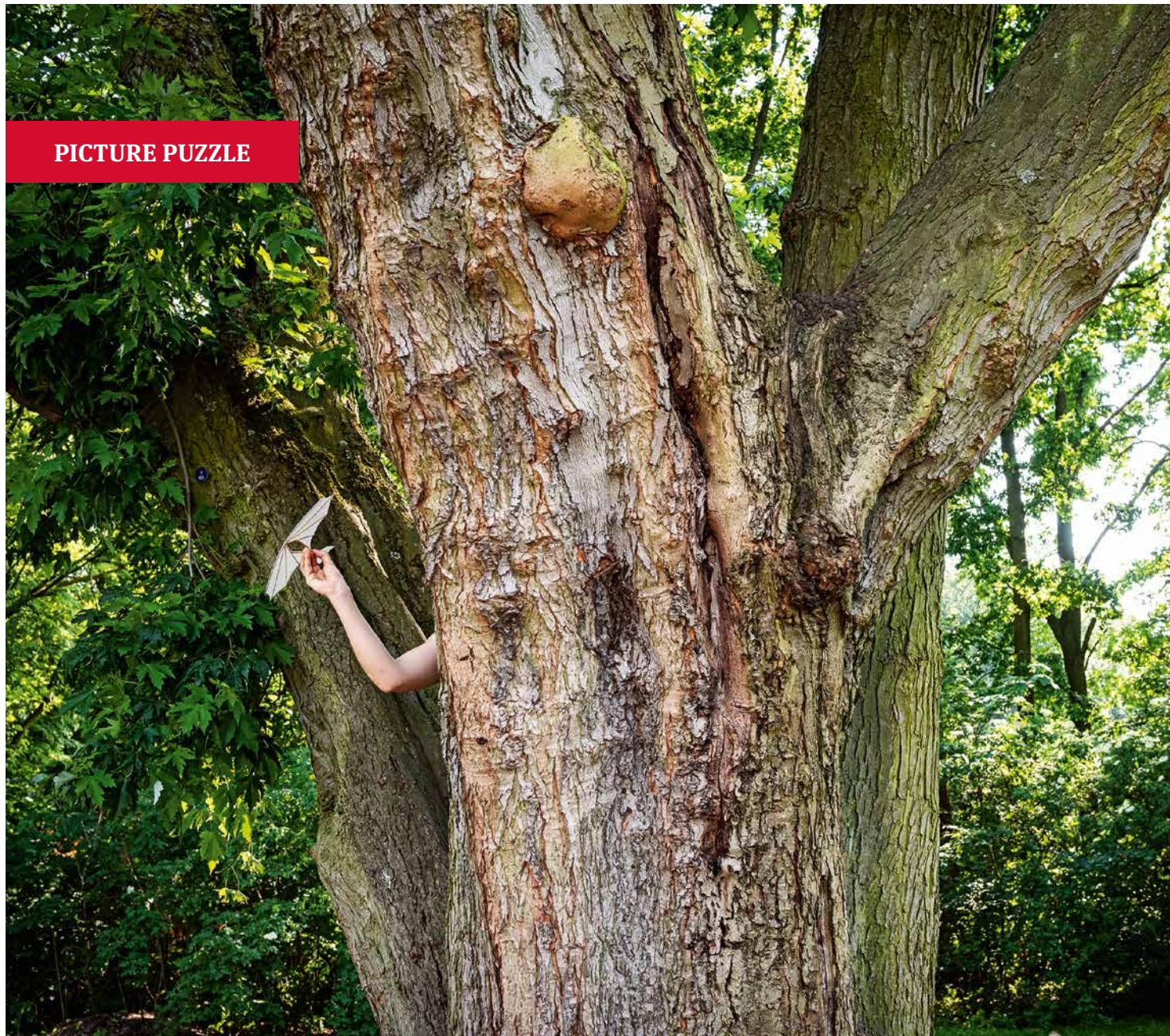
### What can politics do?

"There are two strands to distinguish here," says Manuel de Menech. "On the one hand, we have the EUTR which was introduced to ascribe a guaranteed origin to the wood available on EU markets. On the other hand, we have different national framework conditions, which are subject to the respective national legislation. This presents us with some challenges given that national laws differ and the interpretation of these laws has not yet been uniformly defined within the EU in order to comply with

the EUTR. In any case, EGGER supports the call for stricter legislation in regions where the risk of illegal logging is high. Regulatory measures ensure greater legal certainty and transparency. For our customers and for us."



## PICTURE PUZZLE



## Who is hiding in the forest?

Anything heavier than air falls to the ground – this principle applies until the moment our tree hugger enters the stage of technical history. Perhaps his extremely simple childhood and youth is one of the reasons why he wants to be a high flyer at any cost. Perhaps it is simply his persistent interest in the aerodynamic properties of different bodies. It soon became clear to him that it was best to glide with the help of curved surfaces. He used flexible willow rods to construct them. Countless bruises cannot stop his efforts to overcome the injustice that lies in the fact that birds can fly and humans cannot. Dreamer or visionary? Definitely a highly gifted engineer.

### What's our tree hugger called?

Write to **MORE@egger.com** with the name of the inventor. The correct entries will be entered into a competition to win a sophisticated cosmetics set packaged by the start-up company Sulapac (p. 41). The deadline is 31 March 2020. The judges' decision is final.

The picture puzzle in MORE 11 featured John Walker who invented matches. Thank you for your answers. Elizabeth Coile from Santa Fe, Argentina won a set of environmentally friendly food containers designed by Anastasiya Koshcheeva.