

# SetraNews

////////////////////// FEBRUARY 2018



THE WOOD TREND CONTINUES

STRONG GROWTH IN WOODEN APARTMENT BLOCKS

NEW INVESTMENTS BOOST SETRA'S COMPETITIVENESS

## The Netherlands gears up for wood

Sustainability and efficiency encourage wood construction

*What do you know about strength?*  
SETRA'S WOOD SCHOOL

TALKING ABOUT TIMBER: *What drives a private forest owner?*



“THE MARKET FOR WOODEN APARTMENT BLOCKS IS FINALLY TAKING OFF”



## We're building the future

**WE'RE SEEING IT EVERYWHERE.** Interest in building in wood is being expressed by politicians, architects, municipalities, researchers and – not least – by the construction industry itself. The market for wooden apartment blocks is finally taking off and our climate-smart material is getting the chance to showcase its full potential. What we could call a wood revolution is taking place not only in Sweden but around the world. A prime example is the Netherlands, which we visit in this issue. Here, Heuvelman Hout planing mill has seen a marked increase in enquiries about industrial wood construction, driven by an increasingly eco-aware public.

**IN RECENT MONTHS,** Setra has taken several strategic decisions that will make us well placed to benefit from this growth and meet our customers' needs, both in Sweden and in our export markets. Find out more about these investments and our strategy for helping to build the future on page 11.

**SETRA** is entering 2018 in a strong position. We manufactured just as many wood products in 2017 as we did the year before, despite having sold off a sawmill. In the autumn, we stepped up the pace of production in Malå by 20 per cent, which enables us to increase sales in several key markets. Now we're looking forward to a new year in which wood continues to gain even more ground.

Enjoy the newsletter!

Hannele Arvonen  
CEO

## Strong interest in oil from the forest

Setra's plans to manufacture bio-oil from sawdust have attracted considerable interest, not least from Sweden's Green Party, which hopes that this will pave the way for more projects along similar lines. The oil can be used for biofuel and aid the transition to a fossil-free transport sector.

“We need to develop these new fuels if Sweden is to achieve its target of zero net emissions of greenhouse gases by 2045,” says the party's energy spokesperson Lise Nordin.

The plan is to locate Setra's bio-oil plant alongside Kastet sawmill in Gävle. The project has continued to move forward over the autumn and



winter, with the submission of an environmental permit application and successful trial runs by potential suppliers of the technology. Sawdust from the sawmill has been tested on a large scale and the properties of the oil have been analysed. Follow the project at [www.setragroup.com](http://www.setragroup.com)



**Did you know...**

**...bioenergy is** what keeps Sweden on the move. According to Svebio, biofuel accounts for 36.6 per cent of the country's energy use – making it the single largest energy source.

**...chips, sawdust and bark** from Setra's sawmills and planing mills are used to produce heat for our own production and are sold on to

thermal energy plants and pellet manufacturers, where they are turned into renewable energy.

**...by-products** from the forest industry are the most common source of biofuel in Sweden.

**...Setra delivers** 1,800 gigawatt hours of bioenergy per year. That is enough to power 200,000 apartments.

**SETRANEWS** is Setra's customer newsletter. It is published in Swedish and English for customers, employees and other stakeholders in Sweden and abroad. The purpose of the newsletter is to spread information about the company and tell readers the latest news.

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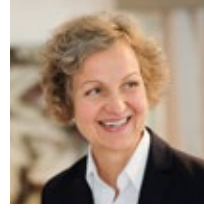
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**COVER PHOTO:** Gerben Dijkman, Purchasing Manager at Heuvelman Hout planing mill in the Netherlands, with Roland Persson, salesman at Setra. Photo: Magnus Laupa.

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## NEW FACES



## Prestigious honour

**HANNELE ARVONEN**, Setra's CEO, has been elected a member of the Forest Technology division at the Royal Swedish Academy of Engineering Sciences (IVA). IVA is an independent academy with around 1,300 Swedish and international members whose mission is to promote the engineering and economic sciences and the advancement of business and industry. Members are elected for their outstanding contribution in the academy's field of expertise.



## Mill Manager

**ADRIAN ERIKSSON** is the new Mill Manager at Setra Skinnskatteberg. Adrian was formerly the Mill Manager at Martinsons' sawmill in Hällnäs and has held many other leading positions in the industry over his long career, ranging from wood companies such as Martinsons and SCA to NCC and Volvo.



## Mill Manager

**JAN-ERIK JOHANSSON-VIK** has been Mill Manager in Heby since November. Jan-Erik has experience of improvement work and leadership, first in the steel industry and later as a consultant in a range of different sectors. His jobs have included improving productivity at Setra's various units, plus assignments for Karl Hedin, Norrskog, Holmen and others.



The Museum of Artistic Process and Public Art in Lund

## Top awards for wooden buildings

Successful projects were a major feature of November's Architecture Gala 2017, run by industry body Architects Sweden. The spotlight was firmly on wood, largely because a number of wooden buildings took home some of the top awards. The Kasper Salin Prize went to the Museum of Artistic Process and Public Art in

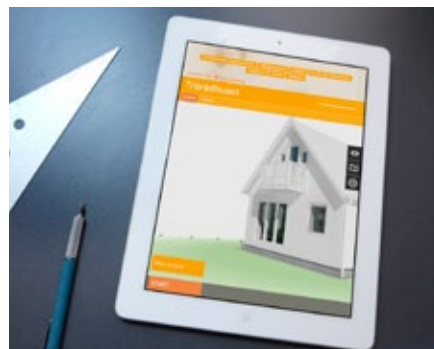
Lund with its wood interior, picture above. The Housing Prize was awarded to the Trädgårdarna nursing home in Örebro, which makes extensive use of blond wood. The prestigious Ralph Erskine Award also went to a wooden building – a social centre at a refugee camp in the German city of Mannheim.

***“There’s something so fantastic about wood. Everyone knows that if you push a drill into the wall or floor, it makes a hole. And you can push in a wooden plug and hey, you’ve fixed the hole. That immediacy is what I love about wood”***

Architect Gert Wingårdh talks about his love of wood in Swedish Wood's digital calendar celebrating 50 years of the Swedish Timber Prize. Watch the clip, more interviews with leading figures in wood and a look back at the greatest wooden buildings in Sweden at [www.svensktrta.se](http://www.svensktrta.se).



Photo: Jacob Karstöm



## New app simplifies wood construction

The Trärådhuset app is described by Swedish Wood as an interactive house where tradesmen and skilled DIYers can obtain advice on their building projects and help with everything from structures and dimensions to material choices and design.

In autumn 2017, Trärådhuset gained new functions for planning permission, garden buildings, dimensions and quality. The app, which works on smartphones and tablets, is simple for builders to use out on site.



# GOOD PROSPECTS FOR 2018



Photo: LEVER Architecture

Homebuilding is currently taking off in the massive US market, where wood is also breaking new ground. The Framework apartment block in Portland is set to be the country's tallest wooden skyscraper.

**Forecasts indicate that consumption of wood products is set to rise next year. Coupled with a more modest increase in production and a better balance between supply and demand, this paints a very positive picture of the prospects for the wood industry.**

**IF WE BEGIN WITH** a global overview, we are seeing a growing trend for consumption of wood products more or less across the board. Of course there are market variations, but in most areas we are seeing positive and steady growth from what are already good levels.

In Europe, construction is increasing in almost every market. Overall consumption is expected to rise from 81.6 million m<sup>3</sup> in 2017 to 82.4 million m<sup>3</sup> in 2018. In the European market, the big question mark hanging over 2018 is the outcome of Brexit negotiations. No-one knows how they will turn out, but it is reasonable to believe that the latter part of 2018 in particular may be a period of considerable uncertainty.

## Turbulence in the Middle East

In Asia, the 2018 forecast predicts stable consumption in Japan and strong growth in China. Imports of sawn softwood products have risen sharply in China since 2012, and in 2017 Russia was the main beneficiary of the continuing trend. We believe that the new development zones in inland China in particular offer good prospects for a continued rise in imports.

In the Middle East and North Africa, consumption remains stable, but with much greater variation between countries. There is extensive political turbulence, with many wars continuing in the region.

Nevertheless, we expect imports to rise slightly in 2018, mainly due to Algeria lifting its ban on imports of wood products, which was introduced in April 2017, combined with low Russian volumes in the area.

## US market of considerable interest

The USA is one of the markets we are most interested in over the next year. Levels of homebuilding remain well below actual demographic needs, but we are seeing strong indications that the figures are beginning to return to the level seen before the financial crisis in 2008. If the increase is of the magnitude forecast, Canada, the largest exporter to the USA, will have difficulty meeting demand. This opens up opportunities for other export countries and we believe there is significant potential for good growth in the US market.

Having looked at consumption, the forecasts for global production must also be factored in. The trend suggests a 2.2 per cent rise in total production, with the USA accounting for almost all of that. However, the balance of supply and demand is better than it was this time last year, not least when considering stock levels at the start of the year, which are much lower than in 2017. So generally speaking, the outlook for 2018 is much better than it was when we began 2017, which is excellent news.



## OUTLOOK WITH OLLE BERG

Olle Berg is Market Director at Setra. Have you missed any of Olle Berg's outlooks from previous issues? Visit [www.setragroup.com/setranews](http://www.setragroup.com/setranews) to read more.



Photo: Arkitema

Future wooden district  
in Sundbyberg.

# The wood revolution is here

There has been a strong trend towards building apartment blocks in wood for many years now. But 2017 seems to have been a real watershed year – for many reasons. The most significant include a committed politician, major advances in the industry and, of course, the ever-growing importance of climate issues. TEXT: ANNA MATZINGER





1888 in SUNDSVALL and Umeå. 1913 in Piteå and 1920 in Strömstad. Following numerous large-scale fires in Swedish towns and cities, there was a longstanding ban on building tall apartment blocks in wood. However, that law was repealed in 1994 and with today's modern building methods wooden blocks are just as safe as buildings made from concrete, for example.

Each year around 3,500 apartments are now being built in high-rises with a wooden structural frame. That might not seem a lot compared with the 30,000 or so in other materials – but it represents a considerable upturn, according to Susanne Rudenstam, head of the Swedish Wood Building Council.

“It’s a large proportion to have captured in such a short time. You have to bear in mind that industrial wood construction also involves getting the manufacturing facilities in place, and that takes time,” says Susanne Rudenstam.

There are many reasons for the inexorable growth in wooden apartment blocks. Looking at the external forces, the pressing issue of climate change is undoubtedly the greatest factor.

“In recent centuries, construction of apartment blocks has been dominated by materials such as steel and concrete. But the concrete industry is responsible for around 10 per cent of the world’s total carbon emissions. That’s more than aviation and people have begun to take note. The Royal Swedish Academy of Engineering Sciences (IVA) and the Swedish Construction Federation issued a joint report in 2014, for example, that played an important role in shifting the spotlight onto the advantages of building in wood,” explains Susanne Rudenstam.

Photo: Swedish Wood



When construction was completed in 2009, Limnologen in Växjö was Sweden’s tallest newbuild apartment block with a wooden structural frame.



Susanne Rudenstam sees 2017 as a watershed year for the construction of apartment blocks in wood.

Photo: Vince Reichardt

***“We believe there are many advantages to using wood. It’s a renewable resource and it emits fewer greenhouse gases than other construction materials”***

#### **Wood construction in Statement of Government Policy**

The trend for building apartment blocks in wood has thus been on an upward trajectory for many years, but 2017 can be seen as a real watershed year, not least with regard to the guidelines being issued by the government and other relevant authorities.

“Perhaps the most influential contribution to the debate came in the Statement of Government Policy in September, when Sweden’s Prime Minister Stefan Löfven stated that ‘The use of wood in housing construction will be increased. This will help mitigate the effects of climate change and create jobs throughout the country.’ Having that stated as government policy delivers a powerful message,” says Susanne Rudenstam.

The government’s clear focus on more wood construction can also be seen in the Budget Bill presented two days later. The

bill included the statement that industrial wood construction is to be developed and a circular and bio-based economy is to be promoted. Sweden also included wood construction as one of four programme points when presenting its presidency of the Nordic Council of Ministers in 2018.

“This all combines to give a very strong indication of how the government wants wood construction to develop. Like many others, they see an industry that can help to reduce climate impact, improve the efficiency of construction and create jobs across the country,” says Susanne Rudenstam.

#### **Sundbyberg is building a new centre in wood**

However, an increase in wood construction is not just a national imperative. The trend is both bigger and smaller than that – it is global and local.

“We’re seeing the same growth all over



Photo: Arkitema

Folkhem Trä has worked with Arkitema Architects to create the wooden district that will make up Ör Centrum in Sundbyberg.

the world. Primarily in wood-producing nations such as Austria, Germany and Russia, but countries without their own forest, such as the UK, are also showing considerable interest. And when Climate Minister Karolina Skog and Stefan Löfven were in China in October, they signed a memorandum of understanding on increased exports of Swedish wood and expertise in wood construction,” says Susanne Rudenstam.

Locally, the trend for increased building in wood can be seen across Sweden, in major cities and smaller towns. The City of Stockholm’s budget for 2018–2020, which was adopted in October 2017, included a target to issue 300 land allocations for wooden buildings in 2018. By 2020, the aim is to reach 500 land allocations. Construction of the new Ör Centrum will begin in Sundbyberg in 2019, creating around 210 homes plus commercial space, built entirely in wood.

“We didn’t have a specific requirement that the buildings should be wooden. There was a public competition and the winning entry was chosen entirely on its merits when judged against the quality criteria set out in the competition programme. There were clear requirements concerning social, economic and environmental sustainability,” says Mattias Häggblom, Planning Architect at Sundbyberg Municipality.

Sundbyberg already has a number of wooden apartment blocks, including the eight-storey buildings in the Strandparken development. They were also built by Folkhem, the company behind the winning design for Ör Centrum.

“We believe there are many advantages to using wood. It’s a renewable resource

and it emits fewer greenhouse gases than other construction materials. There are also social aspects that help to add value. Tenants in wooden apartments in Strandparken have said that they find sound more subdued, for example. Many people also find wooden buildings attractive and appealing,” says Mattias Häggblom.

#### Lasting trend

Many external factors also suggest that construction of apartment blocks in wood will continue to increase – significantly. Numerous important steps have also been taken in the industry over the past year to step up production.

“We have several factories that will be coming on stream this year or next and will bring a massive increase in production. Lindbäcks will be able to produce 3,000 homes a year in its recently completed factory, and Götenehus and Derome are also in the process of completing new plants,” says Susanne Rudenstam.

There is a suggestion that the pace of new building in Sweden is set to slow. The question is what effect this will have on the production trend.

“Wood is a competitive material and the benefits of a lower carbon footprint and the potential to generate jobs nationwide will carry weight as municipalities and construction companies are forced to become more selective about their new housing projects. The need for housing in the premium segment is likely to fall, but demand for what is generally known as affordable housing continues to grow. And that is a demand that the wood industry is extremely well placed to meet,” says Susanne Rudenstam.

## Growing market for glulam

**Load-bearing components of large buildings are often made from glulam, an engineered wood made from stacks of wooden boards glued together. In Sweden, sales have beaten record after record in recent years – and 2017 was no exception.**

There is also growing interest in Setra’s glulam, which is manufactured in Långshyttan and has the shortest delivery times in Sweden.



#### Tobias Österberg, structural engineer at Setra – what are the core benefits of glulam?

“We choose the best timber to make our glulam and that puts it in a whole different class. The bonding technique also increases the strength of the end product. Then we have the usual benefits of wood, such as climate-friendly sourcing and easy recycling. We’re talking about nature’s very own building material.”

#### What structural elements is glulam mainly used for?

“All the load-bearing components, such as roof trusses, posts and trimmer joists.”

#### How can you help Setra’s customers in your capacity as a structural engineer?

“My job includes helping customers to get the dimensions of their beams right in their designs. The customer will often have a plan showing what they want the building to look like, but they need help with working out the dimensions they need to make the building stable.”

#### You’ve worked as a structural engineer for five years. Have you noticed any increased demand for building in wood?

“Definitely! There has been a clear increase of 10, 15 per cent a year. And that’s for all kinds of buildings.”





Interest in wood construction is growing strongly, according to Gerben Dijkman, Purchasing Manager at Heuvelman Hout planing mill. Pictured here with Setra's salesman Roland Persson.



# The Netherlands gears up for more wood construction

After a few tough years in the wake of the financial crisis, construction has once again taken off in the Netherlands. The cities in the already densely populated country are growing and tower cranes have become a natural part of the urban skyline. At the same time, there is growing interest in wood construction – not least because the environment and sustainability have become increasingly hot issues, alongside opportunities to make the construction process more efficient.

TEXT: KATARINA BRANDT PHOTO: MAGNUS LAUPA

**A PALE SUN HANGS** over the flat landscape and in the hazy distance sky and land merge into one. Snow is unusual in the coastal lowlands that are so typical of the geography in the Netherlands. Everything is therefore a little off balance, since Jack Frost has decided to wrap the country in a 20 cm blanket of snow.

“We haven’t seen this much snow in many years,” says Gerben Dijkman, when we finally arrive at Heuvelman Hout planing mill in the small town of Ouderkerk aan den IJssel.

## Strong demand for construction components

Gerben is Purchasing Manager at Heuvelman Hout, one of Setra’s biggest customers in the Netherlands. The planing mill buys sawn wood products from Setra’s three spruce sawmills in Hasselfors, Heby and Färila. On average, one lorry load per day reaches the planing mill via the narrow road that winds alongside the Hollandse IJssel river.

“After the financial crisis of 2008, the economy of the Netherlands fell back sharply, and that hit the construction industry hard. Now construction is making a major comeback and demand for construction components has risen in recent years,” explains Roland Persson, a salesman at Setra with responsibility for Benelux.

The economy of the Netherlands is largely based on importing raw materials

that are then processed into valued added products and sold on. And adding value is what Heuvelman Hout does best, whether it is planing, treating, cutting, painting, finger-jointing or making some other customised product. The planing mill offers tailor-made solutions for every customer and has used its efficient, order-driven production line to gain a distinct position in the market.

## Suppliers hand-picked for each product

Heuvelman Hout focuses primarily on selling high-quality products, and they ensure that quality by planing and processing →

*“The trend is for less work to be carried out on the construction site and more to be done in the factory”*



Heuvelman Hout offers efficient, order-driven production.



*“Lighter structures, more flexible solutions and faster construction processes due to higher levels of prefabrication are all likely to encourage wood construction”*

### HEUVELMAN HOUT

**Founded:** 1876 **No. of employees:** 135

**Owner:** Since autumn 2015, Heuvelman Hout has been an independent subsidiary of the listed company Timber and Building Supplies Holland N.V. (TABS). A total of 11 companies supply timber and construction materials for newbuilds, renovations and maintenance.

**Sales:** EUR 60 million

**Customers:** Industrial and prefab customers in the Netherlands and Belgium, builders' merchants and garden house manufacturers.



On average Heuvelman Hout receives one lorry load of wood products from Setra each day.

→ their wood products in house. The suppliers are mainly located in Sweden, Finland, Germany and Russia, and they are hand-picked based on how well they can deliver raw material that meets the planing mill's production needs. After processing in the planing mill, the goods are sold as finished kits for industrial and prefabrication customers, window, staircase and roof truss manufacturers and garden house manufacturers.

“The trend is for less work to be carried out on the construction site and more to be done in the factory. This means that over the past few years we've seen good growth in our business with industrial and prefabrication customers that manufacture finished construction components. This is a customer segment that has realised the benefits of wood in general and our services in particular.”

Gerben explains that to meet demand, the company has expanded the plant and invested in advanced machinery that offers full automation.

#### Customers demand certified wood

Concrete and brick remain the dominant construction materials in the Netherlands, on average only 2–4 cubic metres of wood is used in every house that is built. If the future turns out as Gerben Dijkman predicts, that figure is going to rise.

“Lighter structures, more flexible solutions and faster construction processes due to higher levels of prefabrication are all likely to encourage wood construction,

along with the fact that the environment and sustainability are becoming increasingly hot issues. Our customers demand sustainable forestry and sustainable timber trading, and they want to know the origin of the products they buy. FSC or PEFC certification is therefore something we require from all our suppliers.”

Although the Netherlands is a relatively small country, it has long been a significant customer for the Swedish sawmill industry. Sweden's exports of wood prod-

ucts amounted to 501,000 cubic metres in the first half of 2017, up 5 per cent on the same period in the previous year.

“The best thing about doing business with Heuvelman Hout and our other customers in the Netherlands is that they're generally extremely knowledgeable. Many have been on placements in Sweden and spent a few months at a sawmill. They know what they want and what they can reasonably ask for,” concludes Roland Persson.

## Wood gains ground in Amsterdam



Photo: Team V Architecture

A prime example of the growing trend for wood in the Netherlands is HAUT, a 21-storey apartment block on the river Amstel in Amsterdam. The spectacular building was designed by Team V Architects and, at 73 metres, it will be the tallest wooden apartment block in the country.



# SETRA IS INVESTING IN THE FUTURE

**Setra is aiming to increase the proportion of processed products in order to meet growing demand in the global construction market.**

**SETRA IS INVESTING** in a new trim saw with integrated planing machine in Hasselfors. This investment, the single largest in the company's history, is expected to bring major efficiency improvements, along with greater flexibility and service levels for existing and new customers alike.

"In our markets, the growth area is wood construction. This investment will enable us to expand our offering of construction products in Sweden and globally," states Setra's CEO Hannele Arvonen.

Setra is also investing in a component factory that will serve the Scandinavian window and door industry. The facility will be located in Långshyttan, where Setra also manufactures its glulam.

"This is part of our strategy to increase the degree of processing by building efficient industrial plants aimed at growing segments where wood has a strong position," explains Hannele.

## Greater competitiveness with a broader range

Once the new trim saw and planer comes online, Hasselfors will be able to offer a much broader and more refined range than before. At the moment, the products are delivered from the sawmill to Setra's planing mill in Skutskär and to customers in Sweden, the UK, Germany, France and Japan.

"The point is to boost our competitiveness and sharpen up our offer to customers in Sweden, the rest of Europe and, not least, markets outside Europe," comments Setra's Market Director Olle Berg. "We currently process products from Hasselfors at other units that largely focus on Swedish builders' merchants."

## Ideal raw material

The market for components for windows and doors continues to grow and has space for another major player. What's more, the raw material from Setra's pine sawmill in Bergslagen is perfect for this type of industry.

"We also have good expertise within Setra when it comes to components and we can draw on good synergies by locating the factory in Långshyttan," says Olle Berg.

He is in no doubt that global construction is set to rise, and that wood is going to play a starring role.

"Wood has gained substantial ground as a construction material. There are many things in its favour, not least the fact that it's a renewable raw material and sustainable construction material that helps to cut carbon emissions."

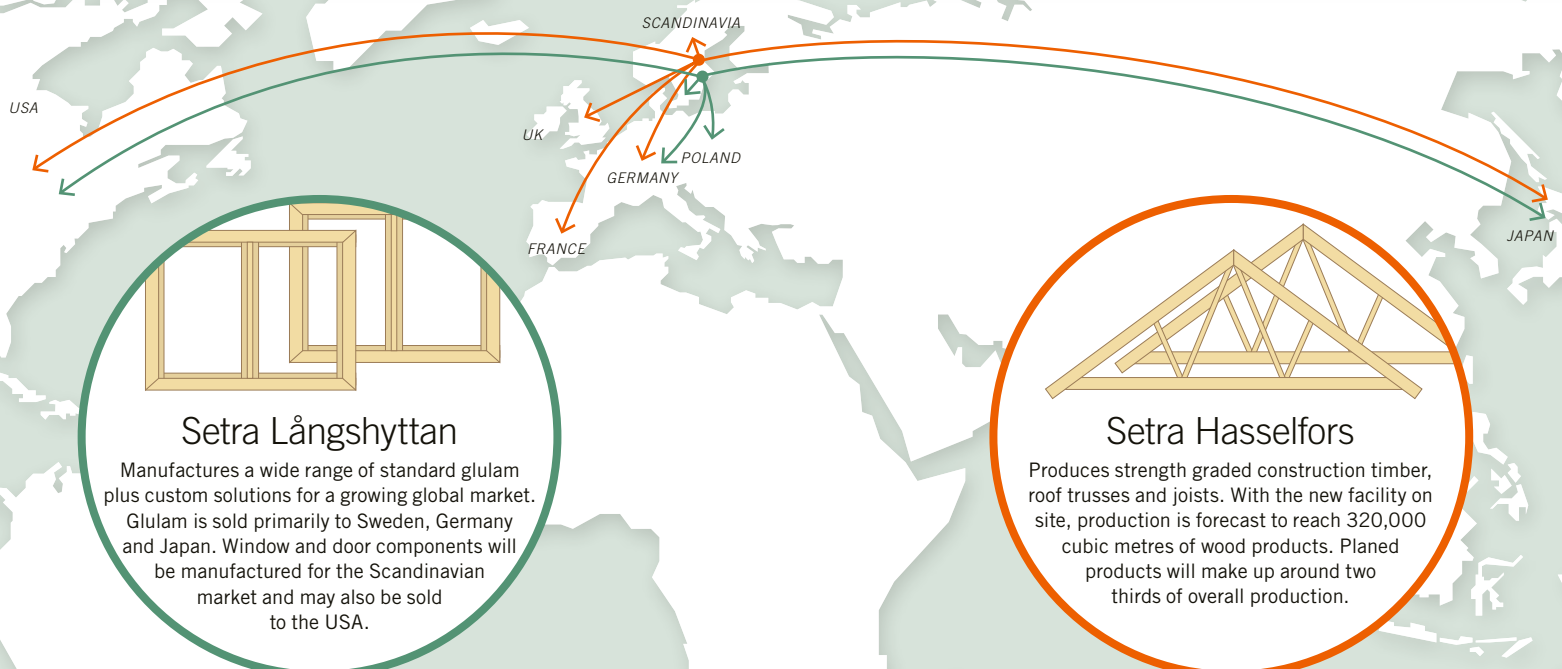
## Sights set on 2025

With its investments, Setra is now looking forward to where the company should be by 2025.

"By then we aim to have further increased our level of processing. We'll be more industrial and have a more consolidated product portfolio. We want Setra to be present in the markets that are experiencing good growth and to be a bigger player in the construction market than we are today," says Olle Berg.

The new trim saw and planer in Hasselfors is planned to be fully operational in around two years. Production at the factory in Långshyttan is expected to begin as early as the second half of 2018.

TEXT KATARINA BRANDT



### Setra Långshyttan

Manufactures a wide range of standard glulam plus custom solutions for a growing global market. Glulam is sold primarily to Sweden, Germany and Japan. Window and door components will be manufactured for the Scandinavian market and may also be sold to the USA.

### Setra Hasselfors

Produces strength graded construction timber, roof trusses and joists. With the new facility on site, production is forecast to reach 320,000 cubic metres of wood products. Planed products will make up around two thirds of overall production.



# Wood has moved in for good

While some trends come and go in the blink of an eye, others endure. One of the latter is the trend for wood in interior design, which continues in 2018. “Generally speaking, anything goes when it comes to wood,” says interior designer and architect Christian Halleröd, who created this year’s Trend Exhibition at Stockholm Furniture & Light Fair.

TEXT: KATARINA BRANDT

## STOCKHOLM FURNITURE & LIGHT FAIR

is one the world’s largest arenas for Scandinavian design and begins on 6 February. This year the prestigious task of designing the event’s Trend Exhibition has gone to award-winning interior designer and architect Christian Halleröd’s design studio.

## The way we use wood is tied to locality

Christian believes that the interior design trends of recent years have been about looking both forwards and backwards. Interest in elemental, authentic materials such as wood has risen, and with it an interest in craftsmanship.

“There are various parallel trends at the moment. One general focus is on making the finish very matt and natural, either by leaving the wood untreated or using a matt varnish or oil. At the same time, we’re also seeing growing interest in super high-gloss finishes. Pine feels quite current again, but so do more exotic woods.”

The way we use wood is tied to locality and there are strong opinions about what is exclusive and what is more standard in different countries.

“The trend in Sweden is towards slightly warmer and earthier tones and a surface with more structure. However, in terms of volume, white cladding and white-oiled flooring remain our top sellers,” says Annica Olsson, Market Coordinator at Setra.

Over the past year, the desire to use sustainable, locally produced interior



Wood also has a natural place in the bathroom, where it helps to create real warmth.



Christian Halleröd, interior designer and architect, has his own design studio.

cladding and flooring in solid wood has grown and grown. It is a clear trend not only among professional interior designers and architects, but also among home decorators.

## Wood gives the whole room a strong look

Setra’s Swedish customers include Kährs, one of the world’s largest manufacturers of wood and parquet flooring. The company sells products to more than 70 countries and is the market leader in Sweden, Finland, Norway and Russia.

Emanuel Lidberg, their chief designer, is responsible for developing new products. As he sees it, we are now beginning to leave behind the view of the floor as a simple base for other design flourishes and instead employ it more to give the room a strong look.

“Opinions on wood in interior design naturally vary around the world, but at Kährs we’re noticing a growing interest even in markets that haven’t traditionally had a focus on wood,” says Emanuel.

Light colours dominate the Scandinavian market right now, with a lot of whites and greys. The next step will be to bring in darker and fuller shades: muted, smoky, bold and rich tones. The trend for patterned floors and plank flooring also remains strong.

## We like to be surrounded by wood

Cecilia Ask Englund, head of industry development at the Swedish Federation of Wood and Furniture Industry (TMF),





Light flooring in the living room – Oak Nouveau Snow from Swedish firm Kährs.



***“The trend in Sweden is towards slightly warmer and earthier tones and a surface with more structure”***

believes that we will be seeing even more wood in future interiors.

“Wood has so many positive properties that we’re keen to draw on. As wood construction increases, the proportion of exposed wood in interiors will also rise, appearing in places where we might least expect it. In entrances and stairwells in apartment blocks, for example.”



Cecilia Ask Englund, head of industry development at TMF, believes we’ll see more wood in future interiors.



Emanuel Lidberg, chief designer at Kährs, sees more people using flooring to give a room a strong look.

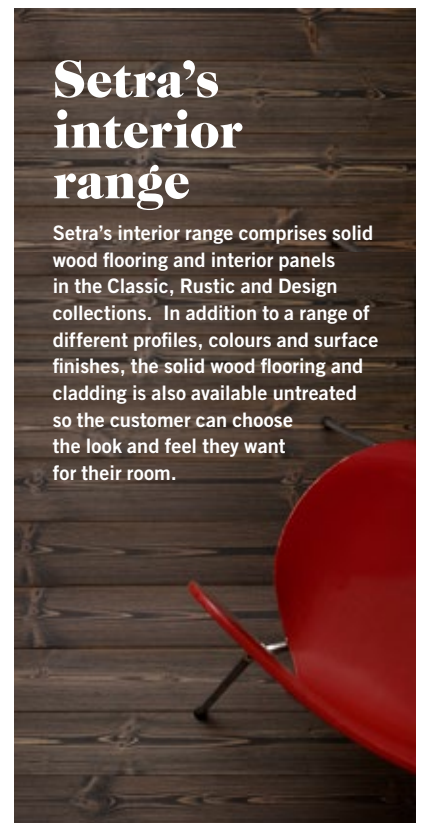
## Well done IVAR!



IKEA’s IVAR shelving is a clear sign that pine never goes out of fashion. It was in 1968 that the then nameless bookcase was first put on display at IKEA Kungens Kurva in Stockholm. The simple pine unit’s new place alongside oak, teak and jacaranda caused consternation among the store’s managers, but in the living rooms of Sweden it proved a great success. IVAR has changed and developed over the years and had many names, including BOSSE, INGO and UFFE. But the base of pale and renewable pine timber that even makes use of small offcuts remains the same. Today, 50 years later, IVAR stands proud in an age when sustainability and flexibility are important values for homes and interiors.

## Setra’s interior range

Setra’s interior range comprises solid wood flooring and interior panels in the Classic, Rustic and Design collections. In addition to a range of different profiles, colours and surface finishes, the solid wood flooring and cladding is also available untreated so the customer can choose the look and feel they want for their room.







The height of strength! Europe's fastest wooden rollercoaster, called Wildfire, can be found at Kolmården Wildlife Park in Sweden.

## WOOD SCHOOL

# Everything

Wood is increasingly being used in advanced structures such as bridges, tall buildings, air traffic control towers, wind turbines and rollercoasters. But just how strong is wood? What affects its load-bearing capacity? And what kind of wood should you choose?

TEXT: SOFIA HÖGLUND

“THERE IS ACTUALLY no limit to what wood can be used for. You just have to choose your wood based on calculations of what the structure needs to be able to handle,” explains Karl Pontus Larsson, Mill Manager at Setra’s sawmill in Nyby outside Uppsala, which produces strength graded sawn wood.

### Resonance tells all

Various different techniques can be used for strength grading. The old visual assessment is often combined with mechanical grading nowadays.

“Here at Nyby, we use a device called Dynagrade,” says Karl Pontus. “Amongst ourselves, we call the process ‘tapping’. A kind of hammer taps one end of the piece of wood as it passes along the production line. Next to the hammer is a microphone that captures the sound formed by the vibrations in the wood. At the same time, the length and moisture content of the plank is also measured.”

The resonance and other information is all the machine needs to determine the class to which the wood belongs. And it doesn’t hang about. The system currently taps 95 boards per minute at Nyby

## Timber strength

The C-classes for construction timber are part of European standard SS-EN 338, which is also used in Sweden.

C14

C16

C18

C20

C22

C24

The lowest strength class that is approved for load-bearing structures. Good for projects without high loads, such as non-load-bearing internal walls.

Demand for this class is low. C18 is available to order, but tends to be replaced with C24. Can be used for wall studs in load-bearing structures if there are no strict requirements regarding deformation.

Used in load-bearing structures that require high strength, such as roof trusses and floor joists. Stock items at most builders’ merchants and timber merchants.

# you need to know about strength

sawmill, but the machine is approved for 140 pieces.

## Right wood for each project

“Strength is about load-bearing capacity,” relates Mauricio Reyes, Product Manager for Setra’s construction products, some of which are made in Skutskär.

“The architect or structural engineer needs to know that the material can handle the calculated load. That’s why here at Skutskär we grade our joists according to their strength. We buy in timber that has already been graded, but we also tap products with our own machine.”

Construction timber that will be placed under a load, for example the timber used in roof trusses and load-bearing posts, needs to be very strong. The timber is

sorted into various C-classes, from 14 to 50. Rather than being strength graded, wood for use in ceilings, flooring and furniture is usually graded visually.

“C14 works well for structures that aren’t under too heavy a load, such as non-load-bearing internal walls,” says Mauricio. “The most common grade, C24, is significantly stronger. The requirements for C30 are extremely tough, so you don’t get so many pieces of that grade. C50 is the very highest grade, but there aren’t any Swedish conifers with that kind of strength. However, glulam can be a good alternative when you need greater strength.”

## Density matters

The strength of wood is affected by various factors, including its density. The higher the density (the ratio between mass and volume), the stronger the wood. Density naturally varies depending on the species of wood – pine and spruce have a density of between 400 and 500 kilos per cubic metre. There are also variations within a single tree, with the lower and outer parts of the trunk being denser. A greater proportion of summerwood increases the density and factors such as speed of growth, soil conditions and tree spacing also make a contribution.

## In addition, defects in the timber make a major difference.

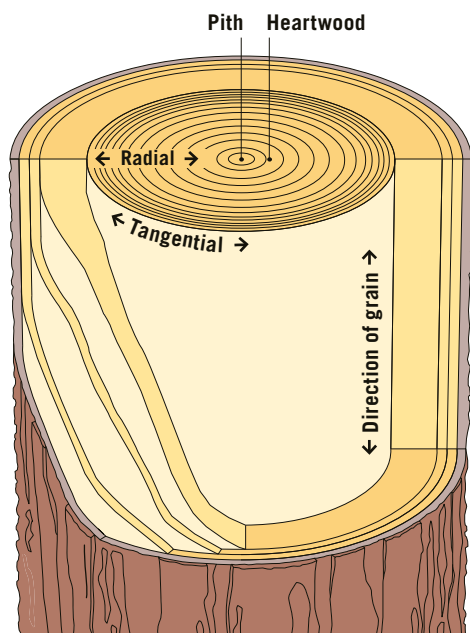
“Knots and cross grain push the fibres in the wood out of line,” says Mauricio. When the fibres are forced to find new directions, the strength of the wood drops. Splits and reaction wood are other

defects that have an effect. Reaction wood occurs when a tree grows against a load, for example when a tree on the edge of the forest is exposed to strong winds. The wood tries to compensate for the strength of the wind as it grows, because it wants to stay straight.

## Different strength in different directions

Wood is also an anisotropic material. This means that it has different properties depending on the direction of the load. Wood is strongest along the direction of the grain, since the fibres are able to resist the force along their whole length. Wood is second strongest in the radial direction and weakest on the tangent (see illustration).

“It’s no coincidence that martial artists who want to break a board hit it in the tangential direction. It would never break with one blow otherwise,” concludes Mauricio.



Source: Swedish Wood

## C24 in greatest demand

Wood of the right strength is selected at Setra’s sawmill in Nyby and sent to Skutskär to be planed into the required dimensions. Setra’s biggest seller is C24, which is also available impregnated. The range includes C14 and both classes are sold in pine and spruce.

The number relates to the bending strength, measured in MPa (megapascals). The figure states how much force per square metre can be applied to the wood without it breaking.





## TALKING ABOUT TIMBER

The forest industry is one of Sweden's most important sectors and much of it is run on a small scale. Half of the nation's forest is owned by private individuals and there are no doubt as many reasons for forest ownership as there are forest owners, at over 300,000. TEXT: SOFIA HÖGLUND

# What are your views on your forest ownership?



### DR MARIE ANDRÉ

FOREST OWNER AND SPECIALIST PHYSIOTHERAPIST AT KAROLINSKA UNIVERSITY HOSPITAL. 450 HECTARES OF PRODUCTIVE FOREST LAND IN THE ALUNDA AREA NORTH OF UPPSALA.

#### ***“I want to manage it as smartly as possible”***

I work as a specialist physiotherapist in Stockholm, but at the same time I'm an active forest owner and I'm heavily involved in our family's forestry business. I own the forest jointly with my sister and we manage it in close dialogue with the inspectors from Mellanskog forest-owners association. We contract out much of the work, but we do some of the clearing and the planting ourselves. My aim is to manage the forest as smartly and sustainably as possible, in terms of the environment, production and economics.

My father was a certified forester and he would never have dreamed of planting deciduous trees, but we have done so now. We live in changing times and I have an opportunity to influence this forest for 30–40 years. Another benefit of family forestry is that I can see what my parents planted when I was born.



### ANDERS BENGTSSON

FOREST OWNER AND THEATRE TECHNOLOGY ENGINEER IN HIS OWN COMPANY, KLURA KONSTRUKTION. 300 HECTARES OF MIXED FOREST JUST NORTH OF KARLSTAD.

#### ***“The solution to our energy problems”***

The forest is part of my livelihood and pension. This is one of the reasons why it's important to look after it so that it grows well. I want to achieve the best possible quality by making good silviculture choices at the right time. I get a kick out of thinning forest that I've planted myself and then seeing how the trees shoot up. I also have a keen interest in energy. I see the forest as one huge solar panel that provides us with ecofriendly raw materials. The forest is the solution to our energy problems. Much of my forest is young and I'm doing a lot of first thinning, so I've focused on biofuel. The aim is to create a forest of wood that works as construction material, but in the meantime it's important to put everything to good use.



### ANNA GUDMUNDSSON

FOREST OWNER AND ENTREPRENEUR. 330 HECTARES OF SPRUCE AND PINE FOREST IN JÄRVSÖ.

#### ***“The forest is my safety net”***

My husband and I took over the forest when my father died seven years ago. The forest is my safety net. Everything else goes up and down, but the forest keeps growing, although wood prices can vary. We contract out all the work and the wood goes to Mellanskog and Setra's sawmill. My background is in banking and I like the challenge of successfully balancing income and expenses.

My goal is to manage the forest well and be responsible about my forestry. I want to pass it on as an inheritance. It's a great feeling to know that my ancestors going way back lived off this forest and that we can still do so. I also take pride in the fact that the forest is so beneficial for our climate. The world needs planet protectors at this time.