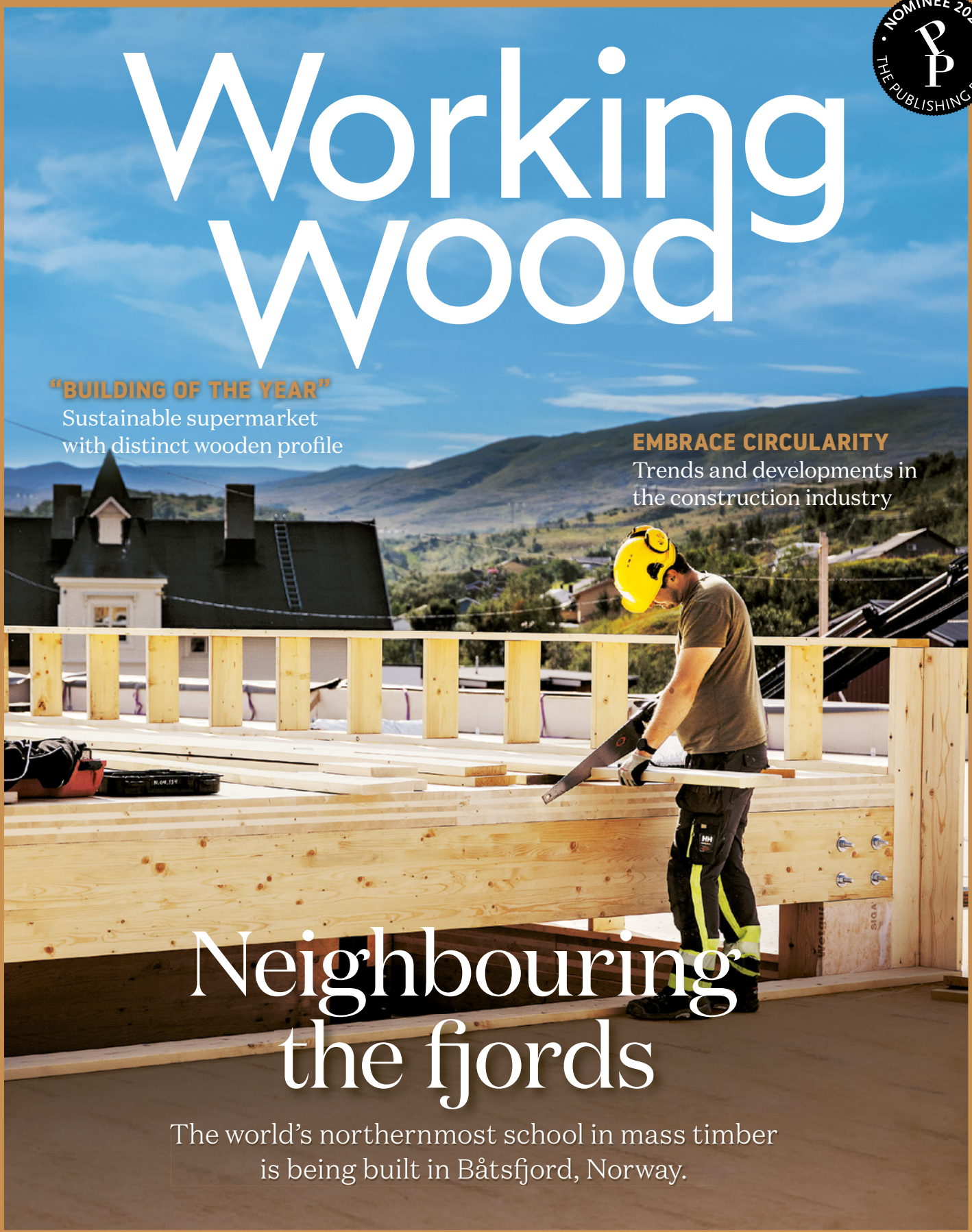
Working wood

NOMINEE 2022 · THE PUBLISHING PRIZE

"BUILDING OF THE YEAR"
Sustainable supermarket with distinct wooden profile

EMBRACE CIRCULARITY
Trends and developments in the construction industry



Neighbouring the fjords

The world's northernmost school in mass timber is being built in Båtsfjord, Norway.

A MAGAZINE FROM SETRA PROMOTING GREEN BUSINESS • ISSUE 2 2022

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» THERE IS NO SUCH THING AS WASTE, ONLY ECOCYCLES AND NEW ASSETS.

EDITORIAL

Setra

Working Wood is aimed at Setra's customers and stakeholders in Sweden and abroad, with a view to increasing knowledge about wood as a building material and providing inspiration. The magazine is published twice a year in Swedish and English. **CIRCULATION:** 4,800 copies **ADDRESS:** Setra Group, Box 3027, 169 03 Solna, Sweden. **TEL:** +46 8 705 03 00. **E-MAIL:** workingwood@setragroup.com. **EDITOR:** Linn Treijs. **RESPONSIBLE PUBLISHER:** Lovisa Krebs. **PRODUCTION:** Chiffer AB. **EDITOR:** Iva Stepán. **ART DIRECTOR:** Anna-Karin Schröder. **REPRO:** Italgraf. **PRINTED BY:** Åtta 45. **COVER:** Båtsfjord, Norway. **PHOTOGRAPHER:** Klas Sjöberg. All unsigned material is editorial. Want to subscribe to Working Wood? Register at www.setragroup.com/workingwood. What would you like to read about in the next issue? Suggestions and ideas should be sent to workingwood@setragroup.com. For more Setra news, visit setragroup.com and follow us on LinkedIn. FSC® Licence Code FSC-C004269

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IMAGE: KLAS SJÖBERG

KATARINA LEVIN
President and CEO
of Setra

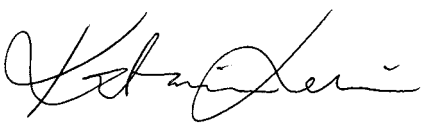
GRÖNSAMHET
We want to do business in a way that we and others – our clients, society and nature – can benefit from. This is what we call "Grönsamhet". It comes down to creating green value.

Respect for the raw material

Wood fibre is an amazing substance, don't you think? Impressively tall buildings, circular packaging, textiles and green fuel are just a few areas where wood is already replacing fossil alternatives. And there are no doubt many more applications to come. Is there any other material that is as versatile, or as sustainable?

A key factor for those of us who work with this super-fibre is respect for the raw material. Everything in the log, in fact right down to the bark, should be utilised where it will have the greatest benefit. As much as possible will become products with long service life such as cross-laminated timber and construction timber – sustainable building materials with enormous societal benefits that lock in carbon for decades.

This issue of Working Wood features several great examples of long-term community building in wood. Take a closer look at the school being built in Båtsfjord in northern Norway, for example, and the innovative ICA supermarket in southern Sweden. And speaking of respect for the raw material, don't miss the Know-how section on page 22, for an in-depth look at nature conservation and what is left behind when a forest is harvested.



Setra

We produce sawn and processed wood products, construction products and bio-products from responsibly managed forests.

CONTACT US – WE ARE HERE TO HELP
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In brief

MOISTURE-PROOFING | CEDERHUSEN | CLIMATE BENEFIT

BUILDING OF THE YEAR CATEGORY RESIDENTIAL
Cederhusen, Sweden's largest housing development using CLT frames, won Building of the Year 2022 with the citation: "an impressive end result where every material has been chosen with care". Setra supplied the frames for the two first buildings.

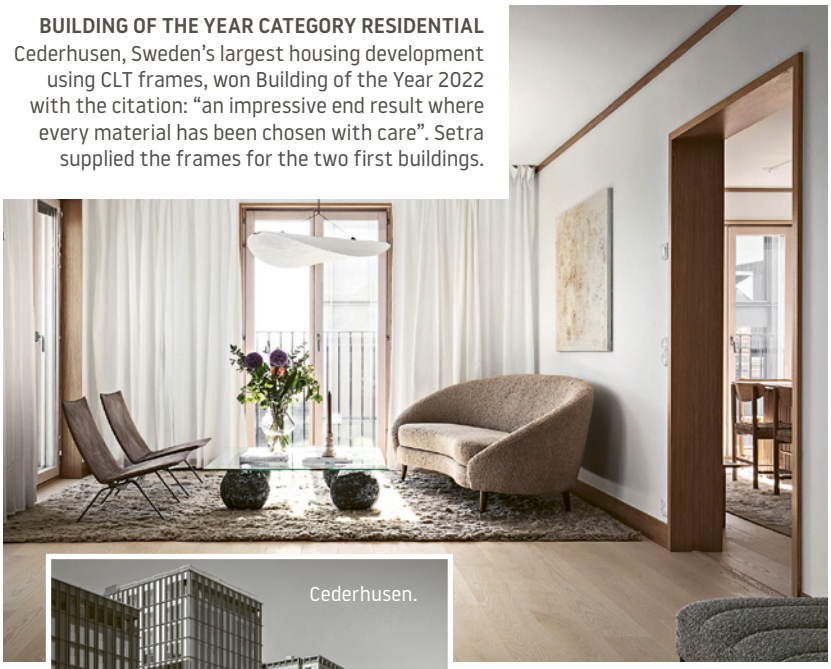


IMAGE: FOLKHEM/KRONFOTO

Cederhusen.

Moisture-proofing

Setra is the first business in Sweden to offer new moisture-proofing for frames made from cross-laminated timber. The proofing product Wetguard is manufactured by Siga and applied directly in the factory.

"Having to take into account the weather and damp is a constant issue in the construction industry, whatever the material being used. This is an effective solution that makes it even easier to build with wooden frames," says Theres Jansson, Senior Sales Specialist, Building Solutions at Setra.

THE MOISTURE-PROOFING comprises a membrane that allows the wooden frame to breathe and releases moisture while protecting against water and dirt ingress.

LARS LAESTADIUS, *sustainability strategist and lecturer at Swedish University of Agricultural Sciences on the global housing shortage.*

"Using wood as a building material is the best way forward. Wood where possible, concrete where necessary."

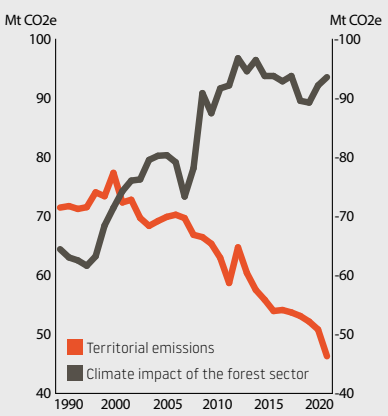
Climate benefit of wood

The climate benefit of Swedish forestry and forest products has increased by 46% over the past 30 years. And the industry annually creates a climate benefit that is twice as large as the entire country's carbon emissions. This is according to a report by the Swedish Forest Industries Federation: The Climate Impact by the Swedish Forest-based Sector 1990–2020.

"Almost half of the climate benefit occurs after the trees have been harvested and turned into timber, through the use of fibre-based products and bioenergy instead of concrete, plastics and oil," says Viveka Beckeman, Director General of the Swedish Forest Industries Federation.

The factors that have a positive impact are rising carbon storage in the forest due to growing trees, an increase in carbon sequestration when wood is used for building, the substitution of wood-based products for fossil materials and the use of forest residues for bioenergy.

Falling territorial emissions in Sweden (left scale) compared to rising positive climate effect of the forest sector (right scale).



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Twenty-five of Sweden's 290 municipalities have adopted a strategy for building in wood. A further 35 municipalities have expressed interest in a wood construction strategy or started working on one.

Source: Wood City Sweden

Electrolux future headquarters on Kungsholmen in Stockholm.

IMAGE: ARCUS

Electrolux creates green neighbourhood

A green, vibrant city. This is Electrolux's vision as it expands its headquarters using locally produced CLT.

Sustainable choices, circular solutions and resource sharing will characterise the neighbourhood around Electrolux HQ on Kungsholmen in Stockholm. 8,000 m² of office space and 100 owner-occupied apartments totalling 6,000 m² will be built in the first phase. The climate-smart frame in cross-laminated timber and glulam will be manufactured at Setra's wood industry hub in Dalarna and will be a prominent feature, as transparent facades will make it visible inside and out.

The buildings will also house a restaurant, gym and rooftop gardens. The project will be certified according to the BREEAM standard and the Swedish Green Building Council's new certification standard for climate-neutral construction, NollCO2, and is expected to be completed in summer 2024.

IMAGE: KLAS SJÖBERG

Octagonal tower in CLT

Bonn-Olles Torn, an octagonal, seven-storey tower now graces the centre of Örnsköldsvik, northern Sweden. Six of the floors, with one apartment on each, are built in mass timber. For this unique, bespoke building, Setra supplied 48 identical CLT elements that were assembled by construction company Byggsigurd, in what CEO Anders Nordin calls "the most efficient process we've ever seen in wood".

DID YOU KNOW ...

Chips, shavings and offcuts from Setra's manufacture of CLT and other products will soon be put to good use as pellets. The residues will supply other industries around Långshyttan with renewable energy.

Hold your mobile camera over the QR code to find out more.

Using wood in service life products such as building frames is particularly good for the environment because they store carbon throughout their lifetime.

THE WHOLE TREE IS USED

Each log is used for three different product areas:

1. Long-lived wood products such as materials for construction and furniture.
2. Raw material for paper and board that can replace fossil materials such as plastics. The wood fibre can be recycled up to seven times.
3. Bioenergy that replaces fossil fuels such as oil.

!

Carbon stored in wood products

1.3 million tonnes

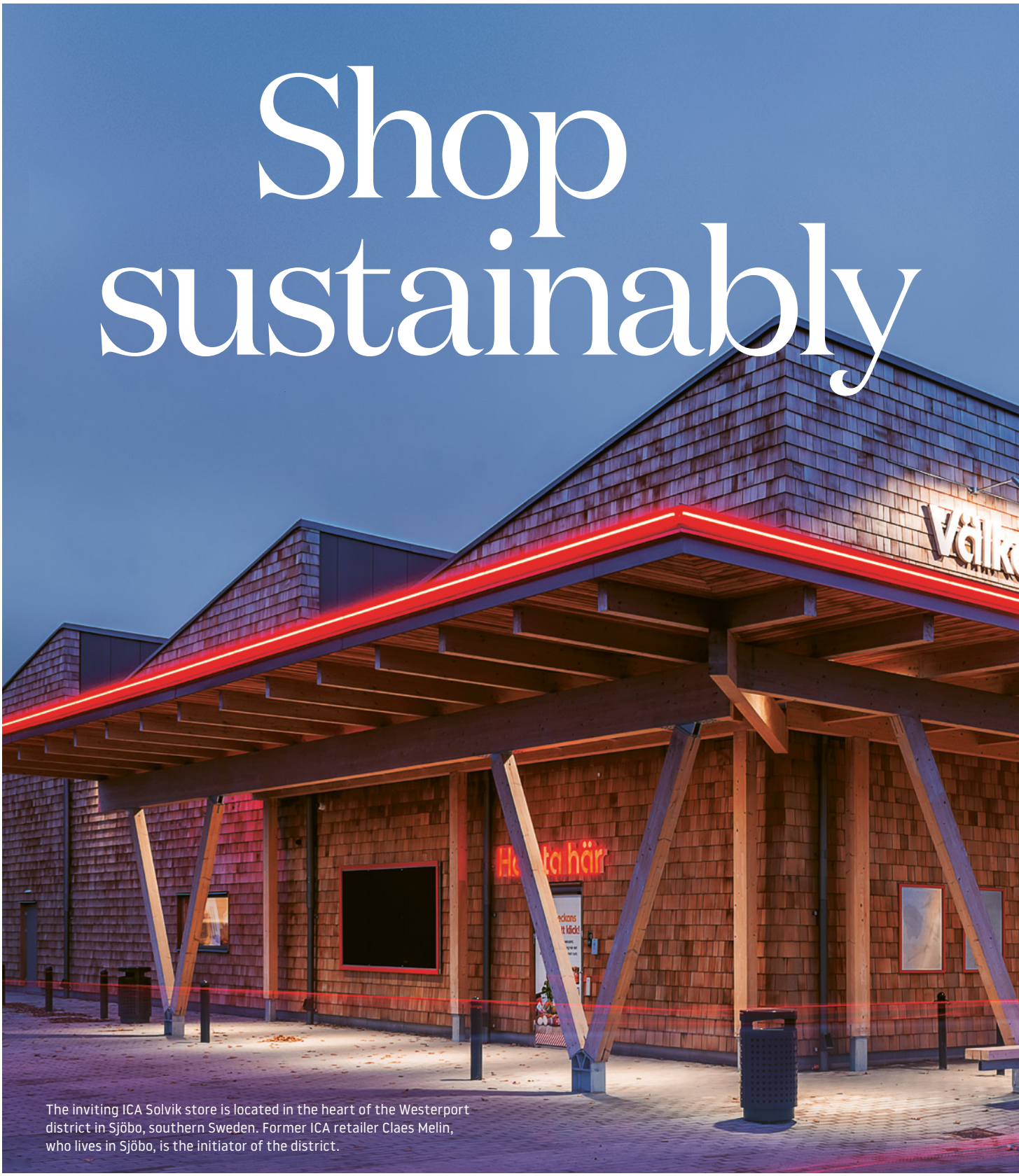
This is how much carbon dioxide is stored as carbon in the wood products Setra sells each year. This sum is equivalent to the greenhouse gas emissions of 150,000 people in Sweden.

Climate-positive

The amount of carbon stored in Setra's wood products is several times greater than the emissions along the entire value chain. The products are therefore climate-positive.

The carbon is stored in the wood products, for example building materials in a house, for as long as the wood is in use. The material can then be recycled or sent for incineration to generate electricity and heat.

Shop sustainably

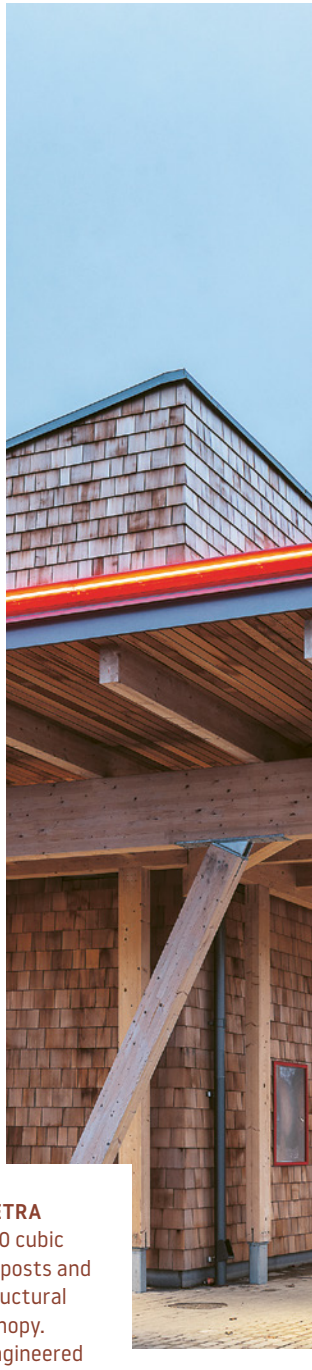


The inviting ICA Solvik store is located in the heart of the Westerport district in Sjöbo, southern Sweden. Former ICA retailer Claes Melin, who lives in Sjöbo, is the initiator of the district.

“The Building of the Year 2022” is built entirely in wood with the feel of an old-time covered market. The climate-smart ***ICA grocery store*** in Sjöbo, southern Sweden, is the start of a whole new district with a focus on human interaction.

TEXT: **MARIE KARLSSON** IMAGE: **FREDRIC SEHÉLER**

The ICA supermarket chain has high sustainability ambitions for its properties and often has wooden frames as its first choice for new developments.



As one of Sweden's most sustainable ICA stores, ICA Solvik offers a customer experience that goes beyond the ordinary. In an age where online shopping is more time-efficient, the appeal of physical retail space lies in more personal values.

The ICA store is the starting point for a long-term investment in the development of the district, with a future residential area steeped in ecological thinking and welcoming comfort. Carl-Henrik Lagnefors, lead developer and project manager at Melica Invest, says that the ICA store is the beating heart around which the rest of the new Westerport district will revolve.

"The idea is to attract people from Lund and Malmö. People of all ages will be able to live here, with easy access to both urban and rural areas, and commuting options close at hand. We'll be building connections, homes and schools, and most importantly, everything will be as sustainable as possible. The new store is leading the way, as the community hub," says Carl-Henrik.

The development has featured a clear focus on ecological materials with a low carbon footprint. Having had good past experiences with wood construction, there was no doubt in Carl-Henrik's mind – Sjöbo's ICA store should be built

GLULAM FROM SETRA
Setra supplied 140 cubic metres of glulam posts and beams for the structural frame and the canopy. The material is engineered spruce glulam, in strength grades that meet standard SS-EN 14080. The raw material comes from Setra's sawmill in Heby.

in wood. With this ambition, contact was made with architectural practice Semrén & Månsson in Gothenburg, and Isak Heedman, lead architect for ICA Solvik, was immediately on board. Together, Carl-Henrik and Isak took the wood concept further, with a view to proving how well wood works for commercial properties. ICA Solvik is a prime example of this, says Isak.

"The whole building is special. We wanted to recreate the feeling of an authentic covered market – with daylight falling from the ceiling, large windows and plenty of space. In a project like this, you want to be able to see, touch and smell the wood. We chose to have large expanses of exposed wood rather than covering it all up with plastic or plaster. We've used glulam for the posts and beams, CLT in the walls and roof and cedar wood on the facade and canopy. These are materials that will age beautifully and require no maintenance," says Isak.

The excellent level of cooperation from everyone involved, including Setra as supplier of all the glulam, is often highlighted as one of the reasons for the project's success. Another key factor is that the store was designed from the outset with wood, and glulam in particular, in the starring role, explains Isak.

"One advantage of glulam is that it can clear long spans; you want to have as few columns as possible in a store. Glulam is crucial for the shape of the frame and the building. Overall, the project has a high level of integration between appearance and structure, in a design that is beautiful, smart and functional. Being able to think and design with wood in mind right from the start has been incredibly beneficial," says Isak. ∗

"GLULAM IS CRUCIAL FOR THE SHAPE OF THE FRAME AND THE BUILDING."

Isak Heedman, architect, Semrén & Månsson

ABOUT THE PROJECT

LOCATION: Sjöbo, southern Sweden
YEAR: 2021
GROSS AREA: 1,800 m²
DEVELOPER: Melica Invest & Sjöson
ARCHITECT: Semrén & Månsson
STRUCTURAL ENGINEER: Timratec
BUILDING CONTRACTOR: Thage i Skåne

BUILDING MATERIALS

CLT, glulam, cedar shingles and cedar cladding.

AWARD-WINNING DESIGN

Named Building of the Year 2022 in the category Industry, Logistics and Retail by Swedish industry magazine Byggindustrin.

MORE TO COME

The new ICA supermarket in Östhammar will open in 2023, another store built entirely in wood, also with Setra supplying the glulam.

ADVANCES IN WOOD CONSTRUCTION

Wood construction is making rapid advances as part of the green transition. Soon, a 20-storey wooden high-rise could become an industry standard – and leasing of structural elements could become part of the circular economy.

TEXT: **LENA LIDBERG** IMAGE: **KLAS SJÖBERG**

IMAGE: JONAS WESTLING

Sara Kulturhus in Skellefteå – 20 storeys in wood.

IMAGE: Setra's wood industry hub in Långshyttan manufactures structural elements in CLT. Laminate sheets are stacked in a spectacular high-bay warehouse, waiting to be glued into cross-laminated panels.

Karin Sandberg has spent over 30 years working on research and development in wood construction. She is a senior researcher in wood building technology at RISE Research Institutes of Sweden in Skellefteå, the city that last year became home to one of the world's tallest wooden buildings: The Wood Hotel and Sara Kulturhus.

"The hotel has 20 floors and is built of cross-laminated timber and glulam," says Karin Sandberg.

Six-storey buildings made of cross-laminated timber (CLT) are an industry standard these days, with the same expected to be true for nine-storey buildings in the near future and perhaps 20-storey buildings over the longer term. Austria is seen as a pioneer in the development of CLT, but Sweden is also in the vanguard.

"Research is underway on how best to stabilise really tall wooden buildings. New standards for fire testing are underway and improvements are being made in relation to vibrations, acoustics and moisture," says Karin Sandberg.

Several research projects are looking at how wood interacts with other materials. The tallest wooden buildings are often hybrid designs with structural systems made of CLT, glulam, steel and concrete.

"It's about using the right product in the right place, taking into account the overall climate benefit," says Karin.

Her own research is in the relatively new field of circularity, looking at how wooden buildings can be recycled.

"The aim is for wooden buildings to be easy to modify and dismantle, offering great sustainability potential, for example by reducing construction waste," she says.

Torgny Persson, Director of Research and Innovation at the Swedish Forest Industries Federation, also believes that circularity will be a core concept for the future.

"We are likely to see new business models, where companies lease timber or entire structural elements. Modular production and more prefabricated solutions will also become increasingly common," he says.

Like Karin Sandberg, he sees efficient use of resources as vital.

"Wood is a key raw material in sustainable construction, but should be used where it can be of greatest use. Sawmills are working hard to ensure that as much of the logs as possible is used as building materials, but not all of it can be converted. The rest is therefore used for packaging, hygiene products, biofuel and so on," adds Torgny.

At Setra's wood industry hub in Långshyttan, Jonas Berglund is product manager for Building Solutions and Components. He feels that industrial wood construction is the way the wind is blowing.

"Cross-laminated timber is a renewable building material that sequesters carbon dioxide and simplifies the construction process. At Setra, we're seeing strong demand for innovative solutions that facilitate work on the construction site, such as increased levels of prefabrication," he says. ⁎

CURRENT CLT RESEARCH topics include properties, design and joints.

"THE RECYCLING OF WOODEN BUILDINGS HAS HUGE POTENTIAL."

Karin Sandberg, senior researcher in wood building technology at RISE

"WE ARE LIKELY TO SEE NEW BUSINESS MODELS."

Torgny Persson, Director of Research and Innovation at the Swedish Forest Industries Federation

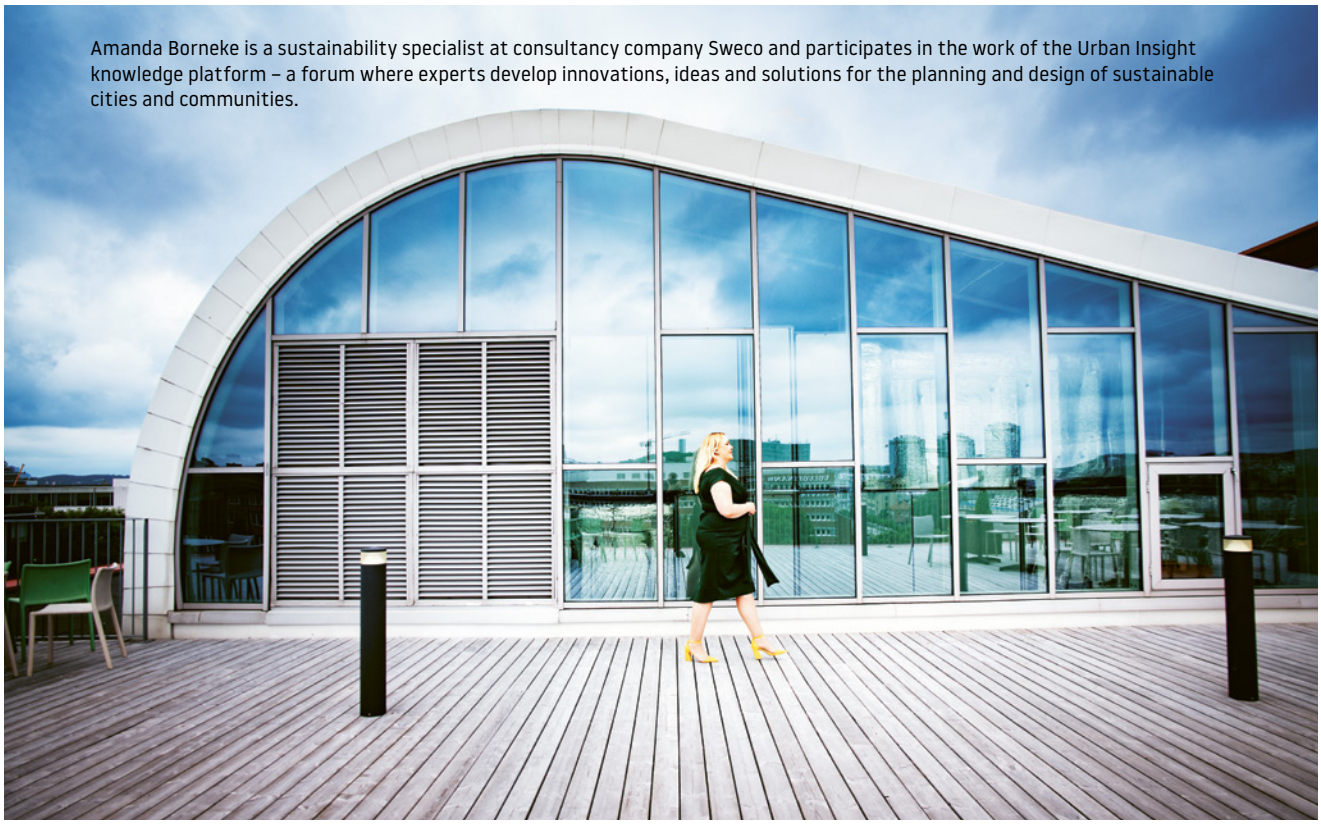
“Embrace circularity from the start”

Sustainability expert ***Amanda Borneke*** combines knowledge and drive with a charismatic personality. Her message of circularity in the construction industry has had a major impact.

TEXT: **MARIE KARLSSON** IMAGE: **ERIK THOR**

AMANDA BORNEKE

CURRENT ROLE: Sustainability expert and co-author of one of this autumn’s reports from Urban Insight, Sweco. Received the Clarence Moberg Award for Young Community Builder of the Year 2021. Winner of Sustainability Initiative of the Year 2020, Environmental Innovator of the Year 2020 and Environmental Award of the Year 2019 (Sweden).



Amanda Borneke is a sustainability specialist at consultancy company Sweco and participates in the work of the Urban Insight knowledge platform – a forum where experts develop innovations, ideas and solutions for the planning and design of sustainable cities and communities.

She has ended up in her dream scenario. As a circular economy specialist at Sweco, Amanda Borneke wants to reach out and make a difference.

"Ever since I learned about Earth Overshoot Day* at the age of ten, I have devoted all my waking hours to the issue of sustainability. I like to say that I work as a personal trainer in sustainability. My job allows me to coach as many companies as I want at the same time," says Amanda.

With her message of sustainability, resource efficiency and a circular economy, her career in the construction industry has skyrocketed. She is a sought-after speaker and has received numerous awards for her work.

After a double-honours degree in environmental communication and management, she decided to help companies develop their brands in the areas of sustainability and social media, and quickly landed a job with the demolition industry.

"There is so much good work being done in the name of sustainability, but many people are bad at promoting it. Starting as a quality and environmental manager gave me the chance to raise awareness of circular demolition and the reuse of building components. I believe there is no such thing as waste, only ecocycles and new assets. It's about making the most of resources," says Amanda.

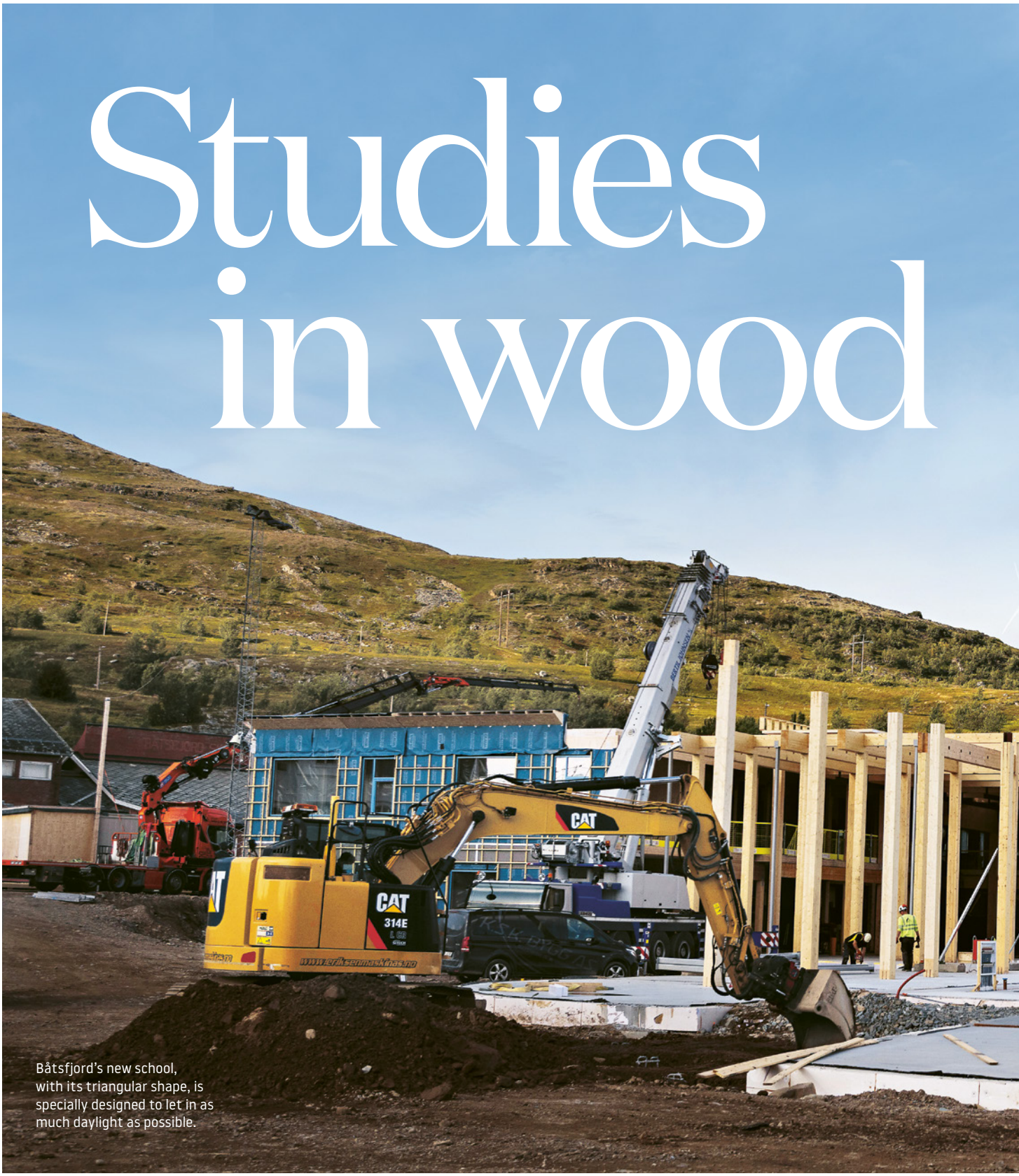
"We need to get more bio-based materials into construction."

Although the climate debate may seem bleak, things are looking brighter today than when Amanda started as a sustainability coach in the demolition industry in 2016. Legislation and attitudes are moving in the right direction and awareness is growing about the importance of a circular approach. Amanda sees benefits in building with wood.

"We need to get more bio-based materials into construction and work on recycling. Wood is the future, but as with everything else, it is important that wood construction is resource-efficient. It's all about embracing circularity from the start. ⁎

* *Earth Overshoot Day*, AKA Ecological Debt Day, marks the date when humanity's demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year. In 2022, Earth Overshoot Day was on 28 July.

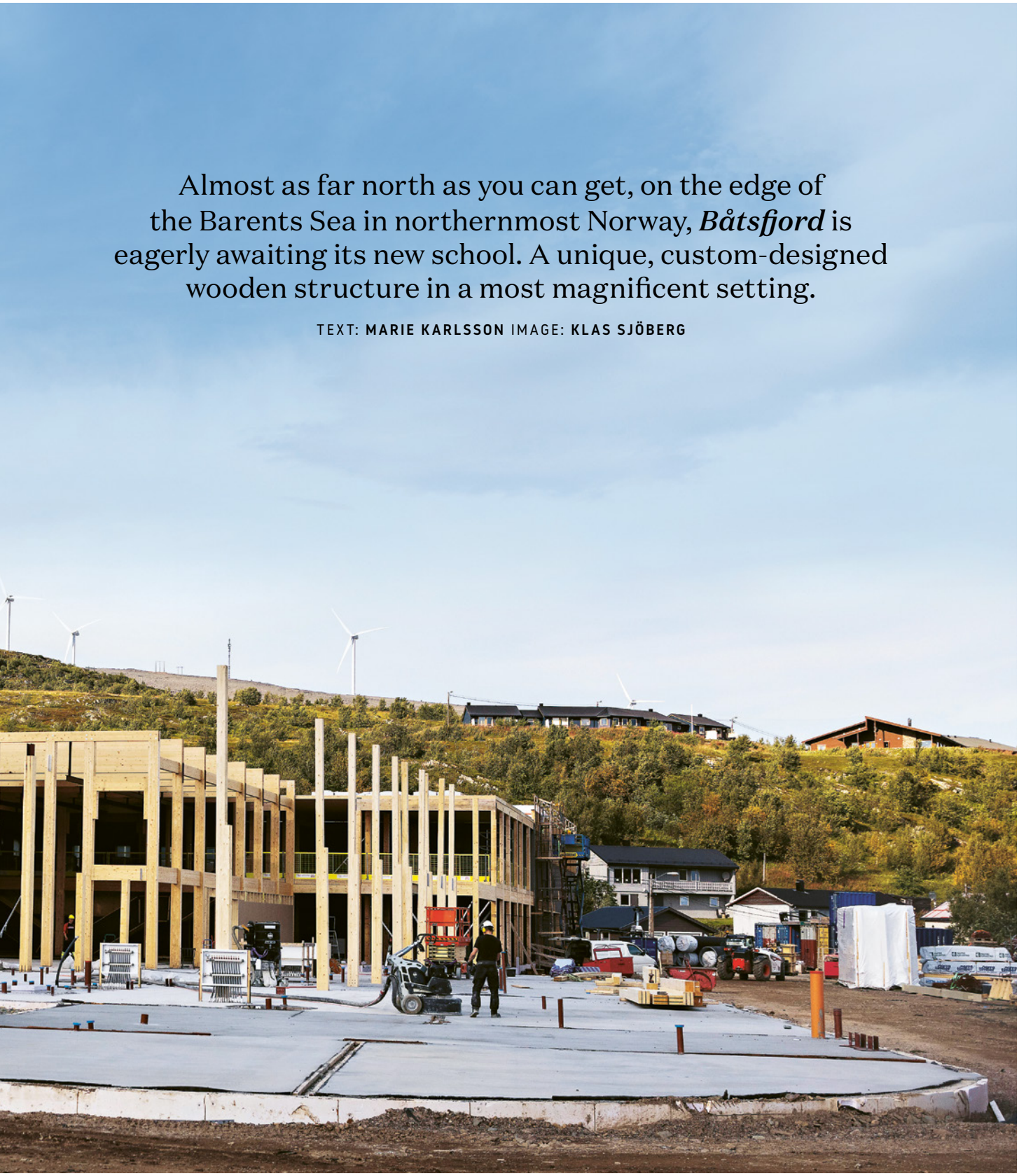
Studies in wood



Båtsfjord's new school, with its triangular shape, is specially designed to let in as much daylight as possible.

Almost as far north as you can get, on the edge of the Barents Sea in northernmost Norway, ***Båtsfjord*** is eagerly awaiting its new school. A unique, custom-designed wooden structure in a most magnificent setting.

TEXT: **MARIE KARLSSON** IMAGE: **KLAS SJÖBERG**



From the roof of the school you can see the fishing village of Båtsfjord.

NEW SCHOOL IN BÅTSFJORD

PROJECT: New school building

COMPRISES: One building, three floors with spaces for teaching, sports and culture.

LOCATION: Båtsfjord, Norway

BUILT IN: 2022–2023

GROSS AREA: 8,450 m²

DEVELOPER: Båtsfjord Municipality

ARCHITECT: Ola Roald AS

STRUCTURAL ENGINEER: Rambøll AS

FRAME: CLT and glulam

BUILDING CONTRACTOR: Harald Nilsen AS

BUILDING MATERIALS: CLT, glulam, concrete and steel

BUILDING MATERIALS

Frame including roof primarily in mass timber, as are interior walls. The theatre, music areas, basement and swimming pool employ concrete. Posts and beams are mainly glulam. Steel use is limited for environmental reasons, and the building is mostly a pure wooden structure.

QUANTITY OF WOOD:

Approx. 1,500 m³ CLT and 240 m³ glulam.

Båtsfjord, the small fishing village in Finnmark, Norway, is beautiful and well sheltered. Central Båtsfjord, in a bay on the eastern part of the Varanger Peninsula, is home to around 2,200 permanent residents. With nearly 10,000 landings annually, this is one of Norway's leading fishing villages.

The new school being built in Båtsfjord will be the world's northernmost school built in mass timber, and forms part of a larger community concept. A gigantic wooden building with a swimming pool and library will be the municipality's new hub for learning, culture and sport.

The exciting and somewhat unusual mix of residents in Båtsfjord lies at the heart of the concept according to Mikkel Stagis, lead architect at Ola Roald AS.

"In addition to the permanent residents, people from various countries gather in Båtsfjord. People move here to fish, live here for a few years and often lack the usual social

INNOVATION AND RECYCLING

»Ola Roald AS and Båtsfjord School are involved in an innovative Norwegian recycling project. An existing school will be demolished to make way for Båtsfjord's new school, and the material from it will be recycled and reused, among other things in the construction of a new preschool.

The residents of Båtsfjord will have a new community hub with an environmental focus, both inside and out. Smart co-delivery of materials to the construction site has made transport more efficient.

Ugis Neilands works in the team that assembles glulam and mass timber.

connections. Båtsfjord's new school is meant to be a meeting place, a glue that binds people together," says Mikkel.

The Ola Roald architectural practice is well known in the field of wood construction. With several high-profile projects in recent years, mass timber buildings have become something of a hallmark of the company. There was never any doubt that Båtsfjord's school would also be built entirely in wood.

"Building schools in wood makes sense from both a financial and a health perspective. Prefabricated mass timber elements make the construction process fast and the material's ability to regulate the indoor climate is an important factor for us. Wood breathes and we firmly believe that students thrive in the environments we build. Many people report better concentration and less sick leave in wooden schools," explains Mikkel.

"Building schools in wood makes sense from both a financial and a health perspective."

Mikkel Stagis, architect at Ola Roald AS

Båtsfjord has a short-runway airport and is also accessible by a road open all year round connected to the E6, the Arctic Ocean Highway. This local road over the Båtsfjord mountain pass is being used to deliver the 35 truckloads of wood products (1,521 cubic metres) up north from Setra's factory in Långshyttan.

Christoffer Lind, project manager at Setra, talks about meticulously planned deliveries, where each shipment is made in a specific order as requested by the customer. In order to achieve the special geometry of the building, Setra has pre-fabricated round beams and entire staircases in wood, which arrive in Båtsfjord with the steps already in place. The project makes use of structural elements that allow for quick installation.

"Time is a huge challenge for us all. Our customer, frame supplier Abico Massivtre, has to be ready at the appointed time. The construction window is unusually short in Båtsfjord, which is snow-free from June to October, after which everything grinds to a halt. The slightest error on our part has

The wooden stairs are delivered for assembly in one piece directly from the factory, says Christoffer Lind, Setra.

major consequences in such a time-sensitive business. We simply have to plan properly and deliver each shipment at exactly the right time."

The first three shipments were made at the end of May and the last shipment is due in late September. One of the biggest challenges of the project is managing the logistics, acknowledges Johann Hjalmarsson, CEO of Norwegian firm Abico.

"The transport distances are unusually long. We've done many wood projects, but never this far north. The distance from Setra's factory is about 1,600 kilometres and our office in Oslo is 1,950 kilometres away. It's not like you just swing home and pick up something you forgot," says Johann.

Abico Massivtre is responsible for the design, supply and installation of the glulam and mass timber for the school in Båtsfjord. CLT from Setra is transported by truck, with between 35 and 40 cubic metres of wood in each load. Finding a really good logistics solution has been essential for the project.

"We carefully evaluate different delivery solutions in all our projects. Road transport makes most sense for Båtsfjord. We use a local carrier who delivers fish and other goods to Sweden and then has spare capacity on the way back. The wooden elements from Setra fill up what might otherwise have been an empty truck," explains Johann.

"We've done many wood projects, but never this far north."

Johann Hjalmarsson, CEO of Norwegian firm Abico

The school is being built in a unique location with very particular conditions, and the building itself will be just as special, with rounded shapes, a boat-like appearance and lots of exposed wood in all interiors. Another challenge for the project is the weather, since Båtsfjord is exposed to strong winds and has many months of snow. The form of the school plays on the name of the town (Boat-fjord), but it is also designed to suit the conditions of the harsh landscape, explains Mikkel Stagis.

The installation has to be completed before the snow arrives. Sometimes stormy winds blow in and delay the process. Tore Kalland, project manager from Harald Nilsen, Thomas Orskaug, Abico Massivtre and Christoffer Lind, Setra, check the time.

"Using geometric calculations of wind and snowfall, we arrived at a triangular shape with soft, rounded corners where snow can circulate freely around the building instead of forming heavy drifts. As there are long periods of darkness, we also focused on natural light conditions. The building needs to make use of all the available daylight," says Mikkel.

Christoffer Lind is proud of Setra's involvement in the construction of Båtsfjord's school.

"This is an unusual and very cool project to be part of. What could be better suited to a fjord landscape than a real wooden ship," Christoffer adds with a smile. ⁎

THERES JANSSON
OCCUPATION: Senior Sales Specialist, Building Solutions
WORKS AT: Setra Långshyttan

Tradition meets innovation

From public buildings to small private cabins, Norwegians have a long tradition of building in wood. The climate issue and expensive Norwegian labour are factors that favour industrial wood construction.

TEXT: **MARIE KARLSSON** IMAGE: **KLAS SJÖBERG**

Our neighbours in the west like to build in wood and the use of mass timber is increasing in Norway. Although it was already at a high level, says Theres Jansson, sales representative for the Norwegian market.

What kinds of wooden buildings are being built in Norway?
Wood has always been a go-to building material in Norway. Take the old stave churches for example, or the many log cabins in the Norwegian mountains. Cross-laminated timber is used for the cabins, often in a slimmed-down format. The holiday home market is larger for CLT in Norway than in Sweden and Norwegians are used to having exposed wood in their interiors. Inquiries from Norway range from large buildings such as schools, arts centres and student residences to smaller family bolt-holes.

What makes CLT so popular?
There is a strong focus on climate-smart solutions and natural materials in Norway. Another important factor is that labour is more expensive in Norway than in Sweden. With high wages for contractors, it is important to save time on installation and find efficient and time-saving solutions. Our CLT elements speed up construction, making projects more cost-effective.

Why is Norway at the forefront of wood construction?
Sweden's cities often burned down in the past, prompting tough regulations regarding wood construction. This was not the case in Norway, where wood construction developed over centuries of new timber buildings.

Examples of pioneering Norwegian buildings include Treet in Bergen and Mjösatornet in Brumunddal, which is one of the world's tallest wooden buildings at 84.4 metres. ⁎

Forestry with respect for nature

Buffer zones, high stumps and dead wood. In Swedish forests, many different environmental considerations are taken into account during harvesting. Sustainable forest management balances production, the environment and social resources.

TEXT: **MARIE KARLSSON** IMAGE: **ASTRID LINNÉA ANDERSSON**

ÅSA ÖHMAN, ENVIRONMENTAL COORDINATOR AT MELLANSKOG

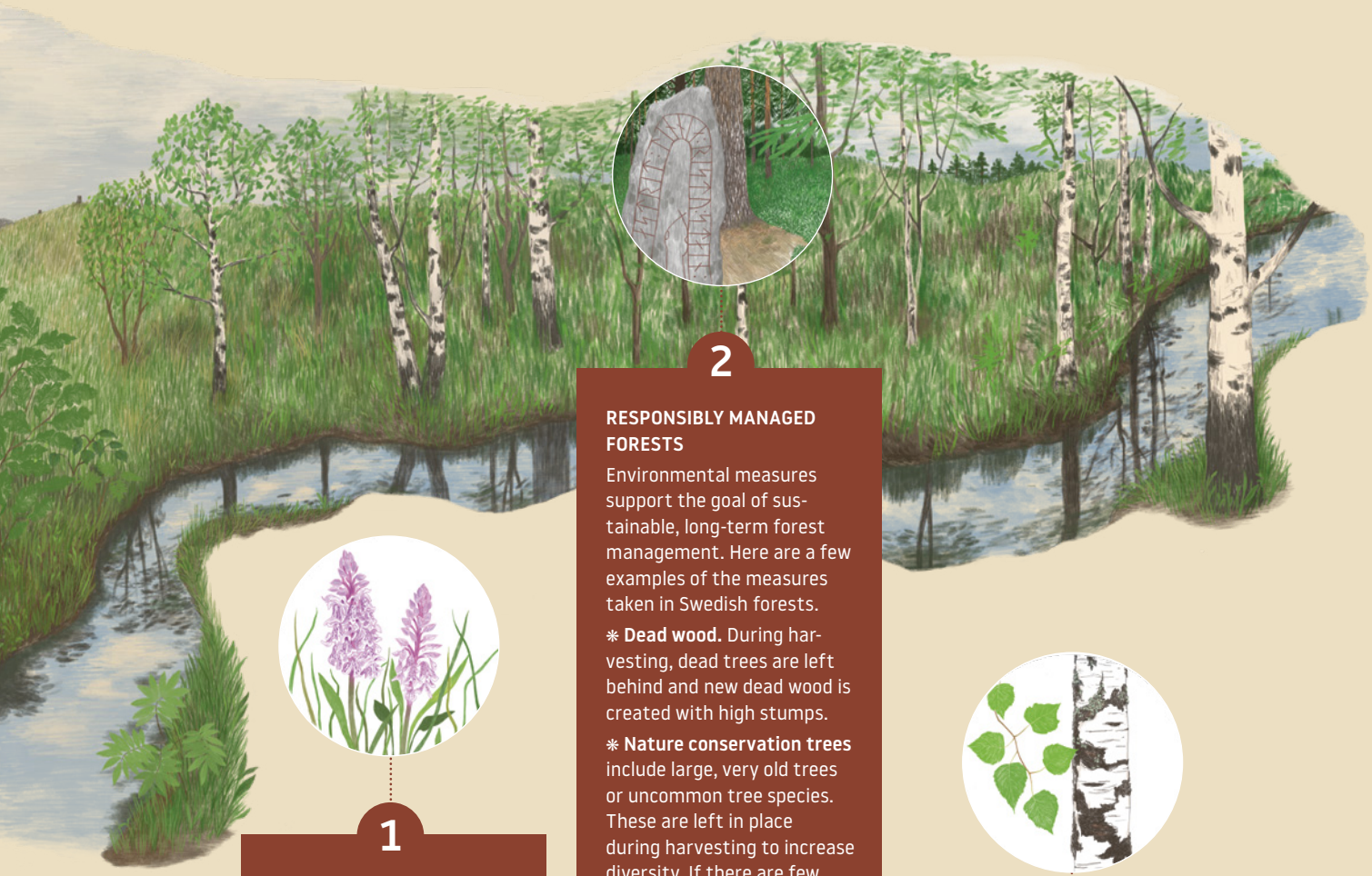
You may have wondered, as you pass through Swedish forests, why some trees and high stumps are left behind after harvesting. This is an example of environmental consideration, says Åsa Öhman, Environmental Coordinator at forest owners´ association Mellanskog.

Back in 1993, the then new Swedish Forestry Act established that the natural and environmental value of forests is as important as their production value. A great deal has happened in Swedish forestry since then, with the certification schemes introduced in the late 1990s. Today, all the wood used in the industry is either controlled or certified, meaning that the forest is managed according to certain rules.

"We know many people are concerned that the timber produced, for example for housebuilding, should be managed sustainably at every stage. You can, of course, practise sustainable forestry without being certified, but it provides valuable proof that you meet both the legal and certification requirements for sustainable forestry," says Åsa.

Swedish forests are a fantastic natural resource that should be able to accommodate the needs of humanity as well as flora and fauna.

"In the example of high stumps, dead wood is deliberately created, as it is an important factor for biodiversity. Birds nest in dead trees and high stumps, which also provide a habitat for bees, mosses, lichens, fungi and insects," Åsa adds. ∗



1

PROTECTION FOR SWEDISH FORESTS

There are three different types of environmental protection for Swedish forests:

* The general consideration that is shown in all actions. The forest industry works to jointly developed goals for best environmental practice.
* Formal protections such as nature reserves and biotope protection.
* Voluntary measures, for example through certification, whereby a part of the productive forest is set aside for conservation purposes. In Sweden, there are two systems for certifying forests: FSC® and PEFC™.

2

RESPONSIBLY MANAGED FORESTS

Environmental measures support the goal of sustainable, long-term forest management. Here are a few examples of the measures taken in Swedish forests.

* **Dead wood.** During harvesting, dead trees are left behind and new dead wood is created with high stumps.
* **Nature conservation trees** include large, very old trees or uncommon tree species. These are left in place during harvesting to increase diversity. If there are few such trees, growing trees are left to develop over time into conservation trees.
* **Damage to soil and water** is prevented by minimising vehicular damage, especially at buffer zones on the water's edge and where transport crosses watercourses.
* **Buffer zones** by watercourses and wetlands are to be left/created to protect sensitive biotopes. A functional buffer zone is often leafy and stratified in both age and height.
* **Forestry measures** must be carried out without damaging ancient and heritage monuments and with due regard for outdoor recreation.

3

EXAMPLES OF ADDITIONAL MEASURES IN CERTIFIED FORESTS

* **Set-asides.** At least 5–10% (depending on the type of certification) of productive forest land is set aside for nature conservation purposes, which benefits biodiversity.
* **Broadleaf trees** are important for both biodiversity and the cultural environment. At least 5% of healthy and moist productive land is to be given over to broadleaf trees, and leaves are to be left in place after clearing and thinning.

»Setra's markets are Sweden (31%), Europe (35%), Asia and Australia (20%), North Africa and the Middle East (11%) and the USA (3%).

IMAGE: HAPTIC ARCHITECTS

CLT floor systems and intermediate beams in modular high-rise building.

Modular high-rises in wood

Constructing high-rise buildings in modular units is a new concept that could be used for complex sites in inner-city areas around the world. "The Regenerative High-Rise" is the brainchild of architectural practice Haptic and engineering firm Ramboll, whose idea is to create flexibility so that buildings can be modified or relocated more easily.

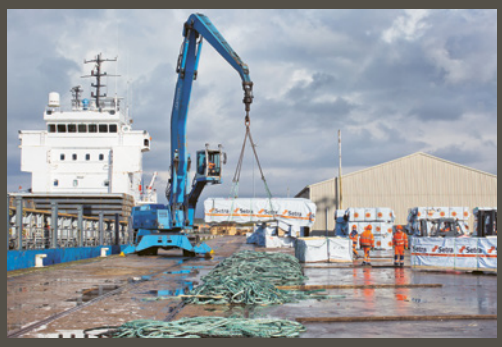


IMAGE: SETRA

Investment in the UK

Swedish wood products are in high demand in the UK, and to meet that demand, Setra is investing in its UK facility in King's Lynn. A new planer, a new band saw and new warehouses will improve the efficiency of the operation and allow an annual increase in production of 8,000 m³ wood products.

"This will allow our customers to buy quality products in a timely manner and support our journey to becoming the number one timber supplier nationwide," says Stuart Newman, Managing Director of Setra Wood Products UK.

At the same time, Setra is taking a step towards its goal of climate neutrality by investing in solar panels.

GLOBAL WOOD CONSUMPTION

Demand for softwood continues to grow globally, mainly due to the call for sustainable and renewable materials.

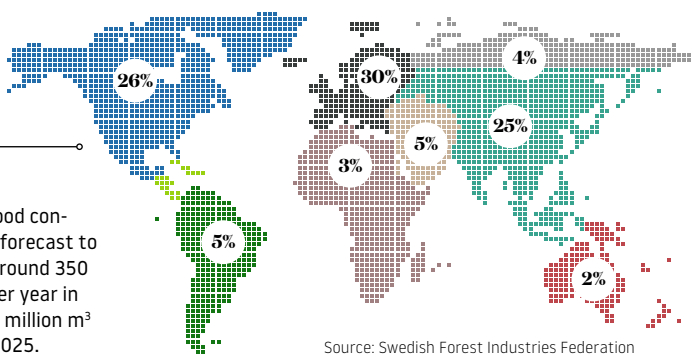
THREE CONTINENTS

Demand is going to slightly outstrip raw material supply as opportunities to increase global production are limited. Consumption is mainly concentrated on three continents: North America, Europe and Asia.

» 2025

Total softwood consumption is forecast to grow from around 350 million m³ per year in 2021 to 400 million m³ per year in 2025.

CONSUMPTION OF SOFTWOOD 2025, %



Source: Swedish Forest Industries Federation

IMAGE: ILYA IVANOV

Energy company Vattenfall's German HQ in Berlin was built using wood products from Setra. The 22,000 m² office block opened in May 2022.

GERMANY TAKES THE LEAD

Germany is the European leader in the manufacture of wood products. In 2017, the country adopted a national plan, Charta für Holz 2.0, to promote wood construction, which has resulted in extensive local production of glulam and CLT, with continuous investment in new technologies and production lines.

"Wood construction is well-established in southern Germany, in particular," says Lena Mika, Setra's Sales Manager for the German market. "This is largely due to its proximity to Austria, which has a long tradition of CLT and glulam production."

Around 25 million m³ of softwood is produced annually, some of which is processed into CLT and glulam. Austria and Germany together produced 3 million m³ of glulam and 1 million m³ of CLT in 2021.

"The trend now is for wood to also capture market share from other materials in northern Germany. High-rises and apartment blocks are the most popular, with major wood construction projects underway in Hamburg and Berlin, for example," says Lena.

HUB IN DALARNA
CLT structural elements are manufactured at Setra's high-tech wood industry hub in Långshyttan, about two hours from Stockholm. The site also produces glulam and wood components.

Quick and easy with CLT

There are many advantages to building in ***CLT***. Cross-laminated timber is in high demand for the construction of everything from apartment blocks to public and industrial buildings.

TEXT: **MARIE KARLSSON** IMAGE: **KLAS SJÖBERG**

Sustainable alternative

The transition to a sustainable society has strengthened the market for cross-laminated timber. New building requirements, environmental classifications and consumer demand favour construction in wood – the only renewable building material. The manufacturing process is economical and energy-efficient, with minimal environmental impact. Another environmental benefit is the low weight, which makes CLT frames easy to transport.

INDUSTRIAL MANUFACTURE
Setra manufactures cross-laminated timber panels in flexible widths, which minimises waste and makes the process even more sustainable. The largest panels are 3.5 x 20 metres.

Fast and comfortable

Choosing CLT makes installation quick and easy. Custom structural elements are delivered with millimetre precision and pre-drilled holes and channels make them ready for immediate assembly on site. At Setra, every delivery is synchronised with the assembly schedule, which saves time on site. Wooden buildings deliver a dry, clean and quiet construction process, plus a pleasant environment for the builders, the locals and the people who use the building.

HIGH STRENGTH REQUIREMENTS
CLT is ideal for structures that require a high load-bearing capacity while being fire-resistant and relatively lightweight.

IMAGE: KLAS SJÖBERG

OLLE BERG, EVP Market and Business Development at Setra, comments on the current market situation.

"A TOUGHER SITUATION IN THE SHORT TERM"

The current state of the wood products market, with a slowdown in construction, is the result of several external factors. The year began with two solid quarters of continued strong demand for wood products, particularly for renovation, a trend that continued for most of the pandemic but has begun to ease off. The slowdown has been exacerbated by higher interest rates and inflation. We have seen prices fall in recent months – albeit from very high levels – to a more "normal" position.

The effects of the war in Ukraine and the sanctions against Russia will not filter through until the fourth quarter of the year. This is because the sanctions only came into full force on 10 July and volumes from Russia continued to be shipped to Europe until June.

Like most other sectors, the forestry and wood industry is struggling with higher costs and lower margins. We are seeing our customers focusing on shorter timeframes and being more cautious about their purchases.

So what can we expect for the future? The growth in wood products is mainly due to developments in the three major markets of North America, Europe and Asia. While the war continues, we will have to deal with a new reality, with high energy prices eating into everyone's margins. Several major players are flagging that they will be limiting their production due to high production costs and large stocks. A well-functioning logistics chain is also essential to curb inflation, and here we are seeing positive signs as shipping and container supply return to normal, shortening lead times in the industry. Despite this glimmer of light, we are likely to face a tougher situation in the short term.

However, in the longer term the future looks bright. Demand for renewable and sustainable wood products is being driven in part by the transition to a fossil-free society and will continue for the foreseeable future. ✱

OCTOBER 2022
BÅTSFJORD
NORWAY

The mass timber roof sections are among the many prefabricated elements Setra has supplied for the new school in Båtsfjord.