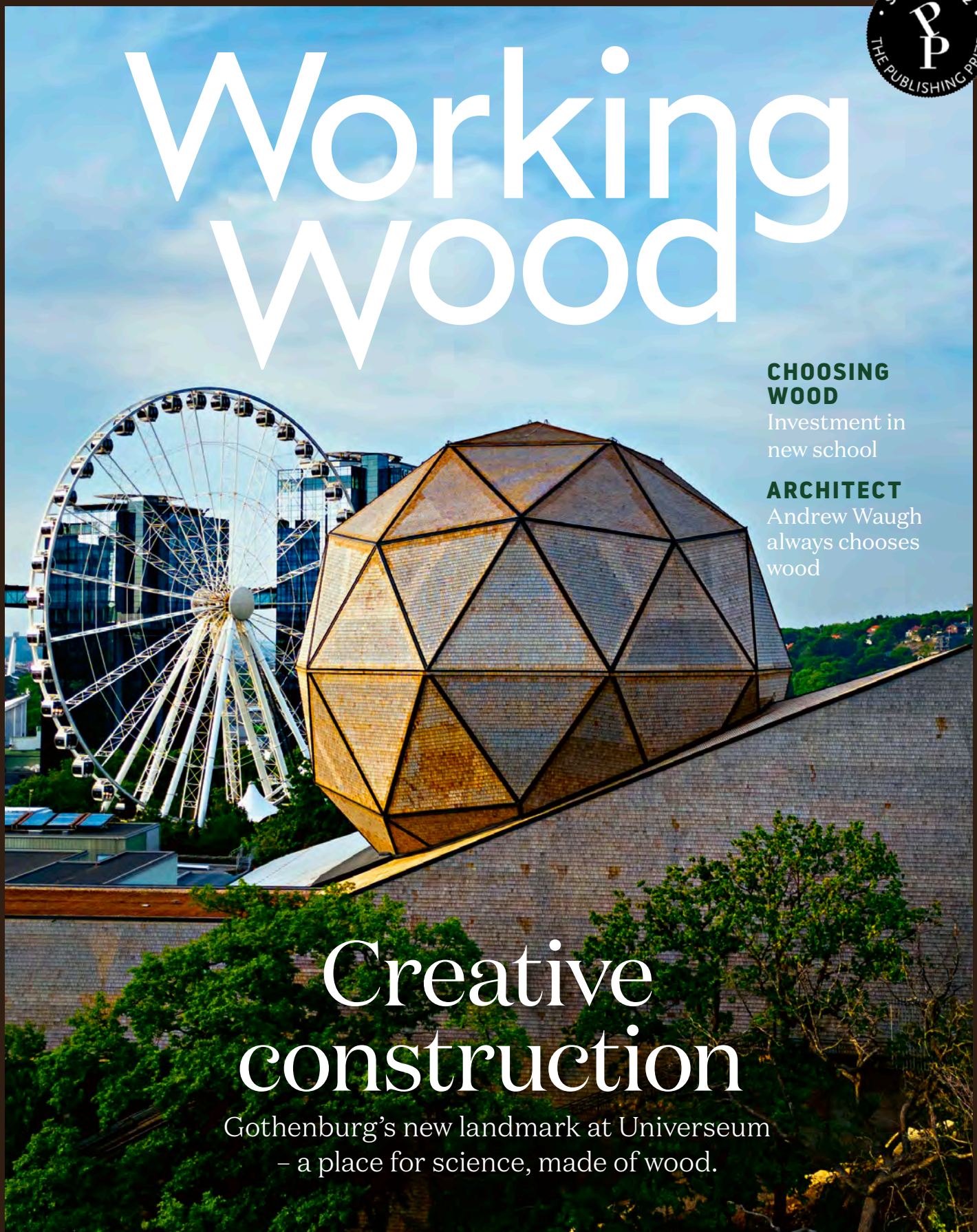


Working wood

CHOOSING WOOD
Investment in new school

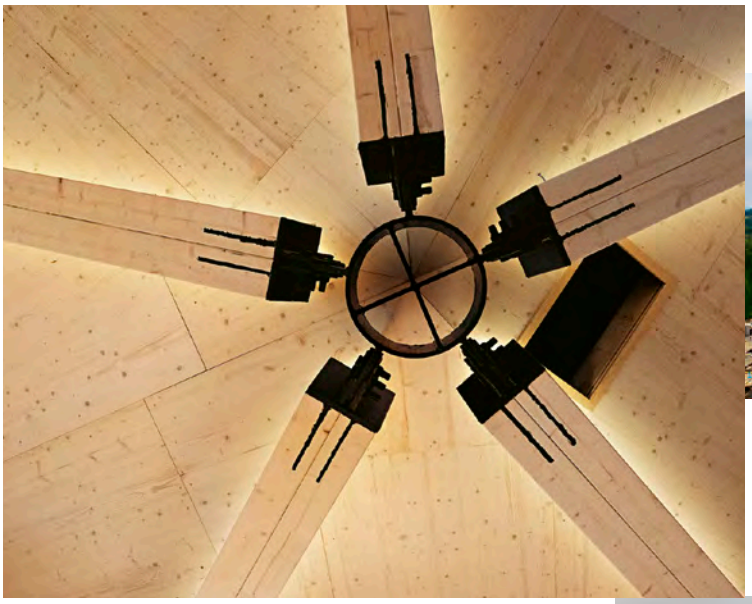
ARCHITECT
Andrew Waugh always chooses wood

Creative construction

Gothenburg's new landmark at Universeum – a place for science, made of wood.

A MAGAZINE FROM SETRA PROMOTING GREEN BUSINESS • ISSUE 2 2023

02 Contents 23



» WOODEN CITIES WILL HAVE LOWER BUILDINGS AND BE BASED ON VALUES SUCH AS HARMONY AND CREATING HEALTHY ENVIRONMENTS.

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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. **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. **PRINTING:** Åtta 45. **COVER:** Universeum, Gothenburg. **PHOTOGRAPHER:** Klas Sjöberg. All unsigned material is editorial. Photos without a byline are credited to the agency. 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: KASPAR HAMMARLING

MARCUS WESTDAHL
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.

"I'm looking forward to new developments"

Gothenburg's new landmark floats above the city like a piece of jewellery, a reminder to challenge the conventional. In Universeum's new visualisation dome, the next generation will learn about science and sustainable development, and what could be better than doing so in a wooden structure? Nothing, if you ask me. Wood is in fact the only sustainable construction material we have.

Visionary projects like Universeum are valuable symbols of modern timber construction, but ordinary, rational buildings are at least equally important. Creating good, resource-efficient homes and premises. Buildings with a lower climate footprint than steel and concrete that lock in carbon dioxide in the form of carbon throughout their lifetime. The new school, Renshammarskolan in Bollnäs is a good example of wood as a construction material leading to an efficient construction process and furthering the municipality's environmental ambitions too. Read more about the project on page 16.

As the new CEO of Setra, I'm looking forward to being part of the new developments going on in our wood processing in terms of new technology and capacity. It feels promising and hopeful to know that we will be playing an even greater part in a more climate-friendly construction industry. An industry in which we can be both visionary and rational, with the courage to challenge and test new solutions hand in hand with our customers and partners.*

Setra

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

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In brief

RESEARCH | LIMIT VALUES | MODERNISATION

CLT SHELTER
The Arknat architecture festival is a coming together of breathtaking nature and innovative architecture. In the summer of 2023, CLT from Setra was used to build hiking shelters in Västervik and Omberg. Read more at arknat.com

IMAGE: TOMMIE SVANSTRÖM OHLSON

Hospital builds extension in wood

Skellefteå hospital, in Northern Sweden, is being expanded over the next few years, as the city's population grows. In fact, the older part of the hospital is getting a smart CLT roof extension right now, with new fan rooms and a monopitch roof for solar panels. The work is expected to be completed in 2025.

VÄSTERBOTTEN COUNTY chose a wooden solution partly for the ease of installing the ventilation ducts and because patient activities could continue during construction. The timber frame is manufactured by Setra.

ANNICA ÅNÄS, *CEO of the property company Atrium Ljungberg, who initiated Stockholm Wood City, the world's largest urban development project in wood.*

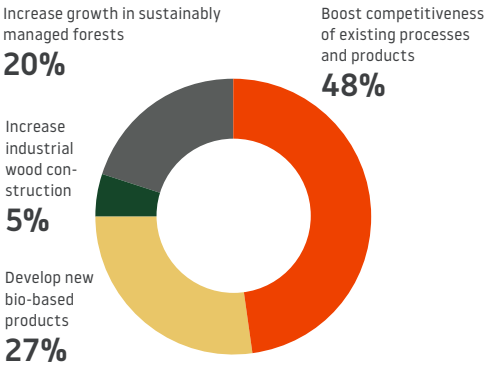
"In a few years, nobody will be interested in buildings if they haven't considered sustainability."

Forest industry's research agenda

The Swedish forest industry's joint research agenda focuses on areas that need to be boosted to enable society's transition to a circular and fossil-free economy.

One priority area is to increase the share of wood in construction, not least by exploring how industrialised wood construction can become even more resource-efficient and how wood-based products can be used in circular systems.

"Building resource-efficiently is particularly important now that the construction market is slowing down," says Marie Johansson, senior researcher at RISE. "We still have a housing shortage so there is demand in this area, but efficiency needs to be improved."



FORESTRY AND FOREST INDUSTRY RESEARCH IN SWEDEN (industry, universities and colleges). Every year, just over SEK 4 billion is invested in forestry research, with the forest industry and foundations providing two thirds of the funding and government initiatives a third. According to the Swedish Forest Industries Federation, investment in Swedish research needs to be doubled if Sweden is to make the transition to a fossil-free and circular economy.

1.4

1.4 million tonnes of carbon dioxide are stored as carbon in the wood products that Setra sold in 2022. This carbon dioxide remains sequestered throughout the life cycle of the wood products and equates to the greenhouse gas emissions of around 180,000 Swedes.

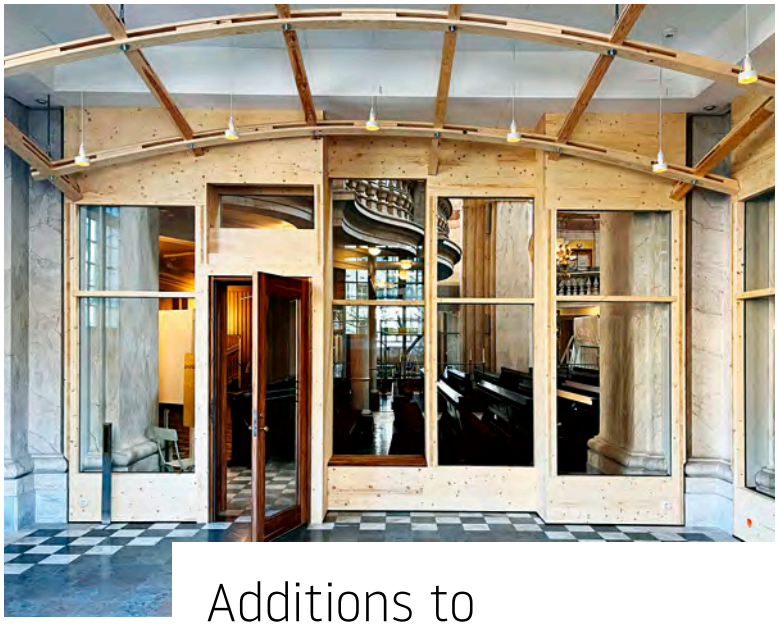


IMAGE: AIX ARCHITECTS

Additions to the church interior

When Gustaf Vasa Church in Stockholm needed to carve out some new social spaces, the parish chose an internal timber structure for which a CLT frame was the natural choice.

Made entirely of wood and glass, the chapels have minimal impact on the original church building. They are placed in the vaulted corners along the entrance facade as two "rooms within a room". Apart from an anchor in the floor, the chapels are completely free-standing and can easily be dismantled without leaving a trace.

"It was a complex project with special requirements, but the result is fantastic. Here you can see with the naked eye what wonderful solutions can be achieved in wood," says Erik Bergman Lenne, Account Manager at Setra. "We were honoured to supply glulam and cross-laminated timber for the project."

The chapels were inaugurated at Easter 2023.

IMAGE: ERIK THOR

Limit values coming

A tightening of the rules on climate declarations for buildings could be introduced as early as 2025, under a proposal from the Swedish National Board of Housing, Building and Planning, which has drawn up limit values for the climate impact of new buildings. The idea is that the values will then be tightened every five years. In 2027, the Board also wants to expand the climate declaration as an adaptation to upcoming EU rules.

DID YOU KNOW?

New training material focusing on wood construction and circular construction is now being developed for building contractors and architects. The initiative is part of the EU's New European Bauhaus programme, with RISE Research Institutes of Sweden responsible for its implementation.

To find out more, scan the QR code using your phone camera.

!

Diversity is vital

65,000

In Sweden we have around 65,000 species, about half of which live in forests or are dependent on trees.

More species thrive in varied forests

Nature with a diverse range of habitats and species, and high genetic variation within species, is more resilient to climate change and other threats.

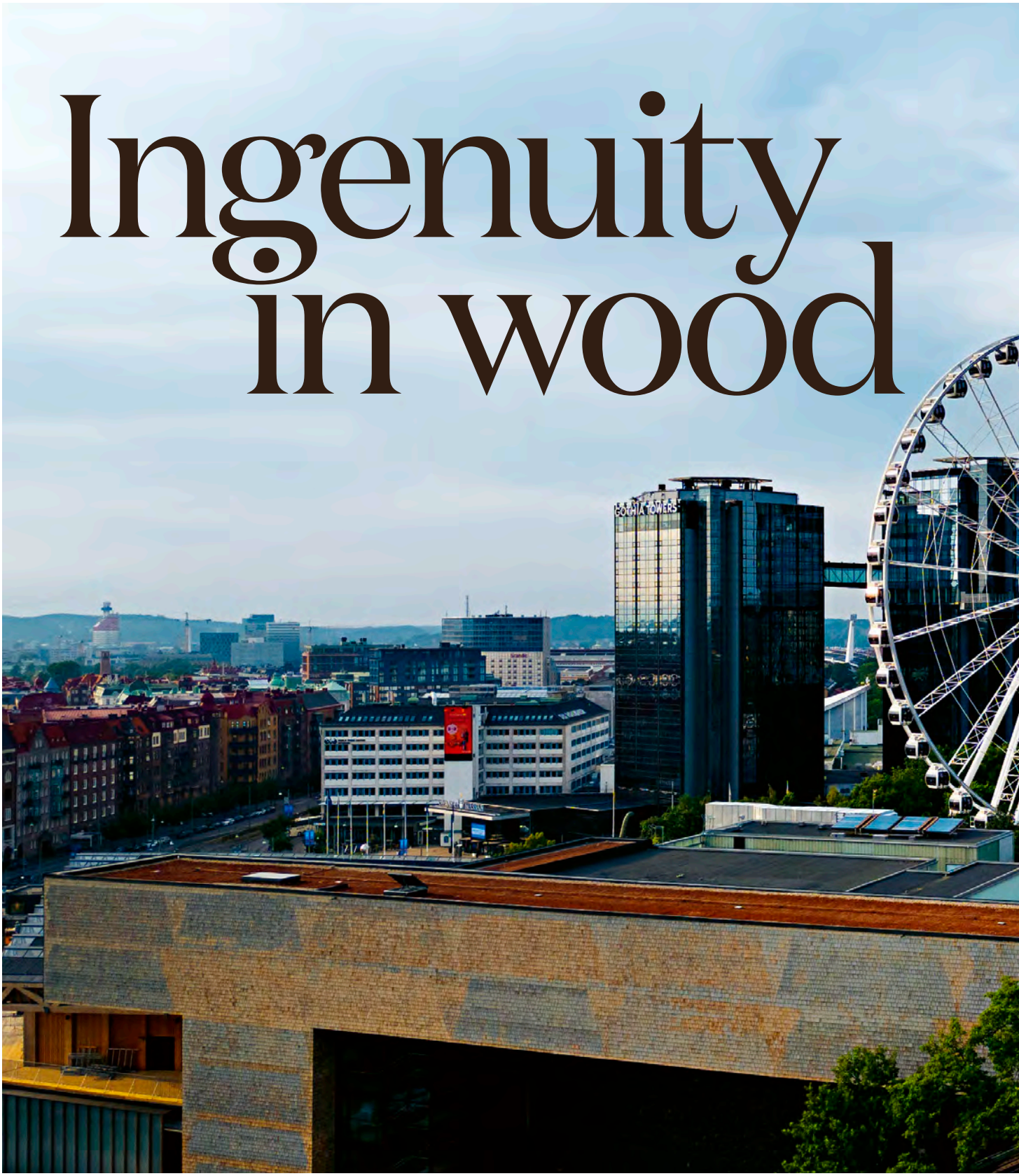
The aim of Swedish forestry is to preserve all the species that live in the forest today. Nature conservation measures are carried out at the regional level, on each individual property and during harvesting – for example by creating ecoparks and conservation forests, and preserving old and valuable trees. These measures are aimed at creating habitats for vulnerable species.

Source: SLU, Swedish Environmental Protection Agency, Sveaskog

PRACTICES THAT INCREASE DIVERSITY

In addition to preserving old-growth forests, biodiversity can be increased in restored forests or by enhancing ecological factors in young forests. Examples include promoting deciduous forests, creating wetlands or conducting controlled burning.

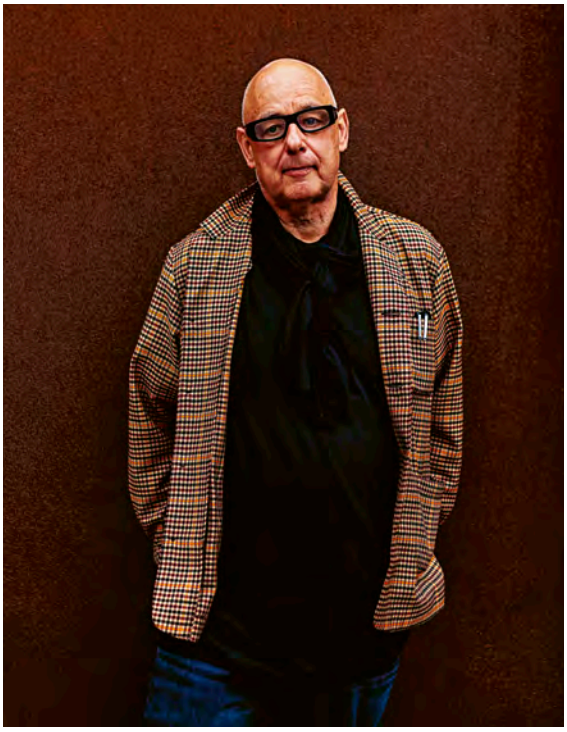
Ingenuity in wood



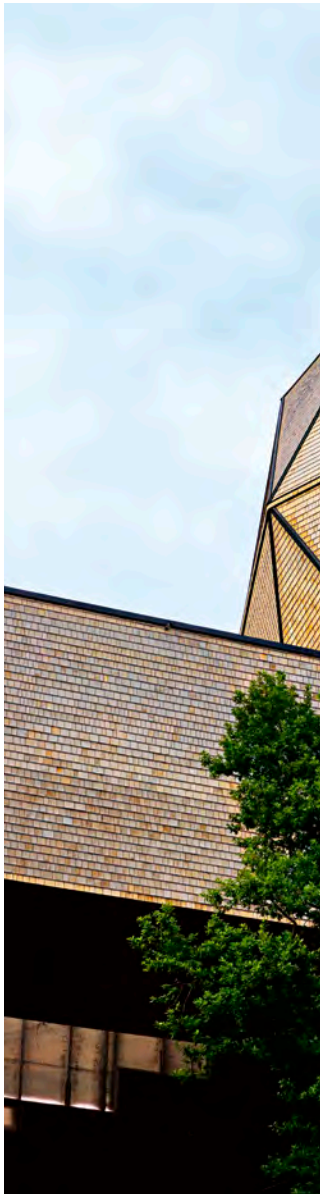
In the new ***Universeum***, more people will be able to enjoy experiencing technology and science. The creative design itself may even help attract visitors to Gothenburg's new landmark.

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

Science centre Universeum's decision to expand included building an extension in the form of a spectacular dome.



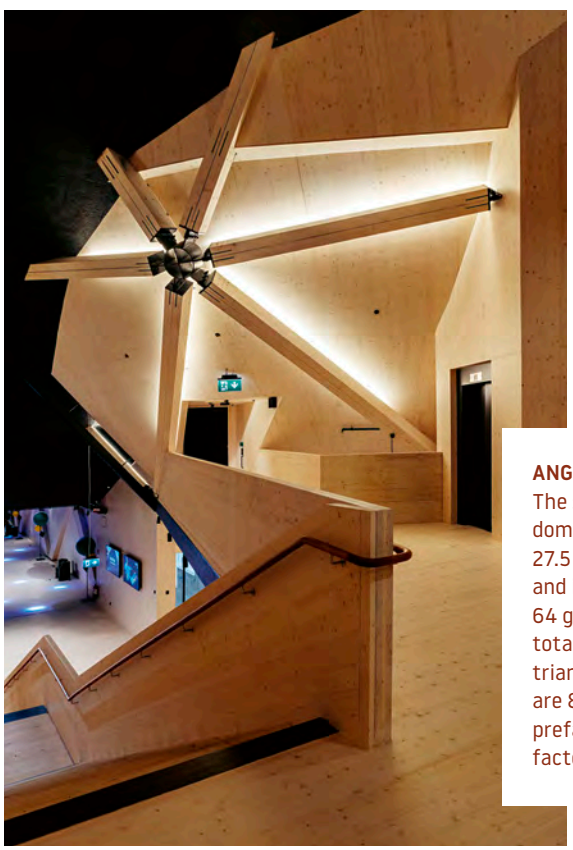
Architect Gert Wingårdh has been involved in Universeum's construction since the beginning.



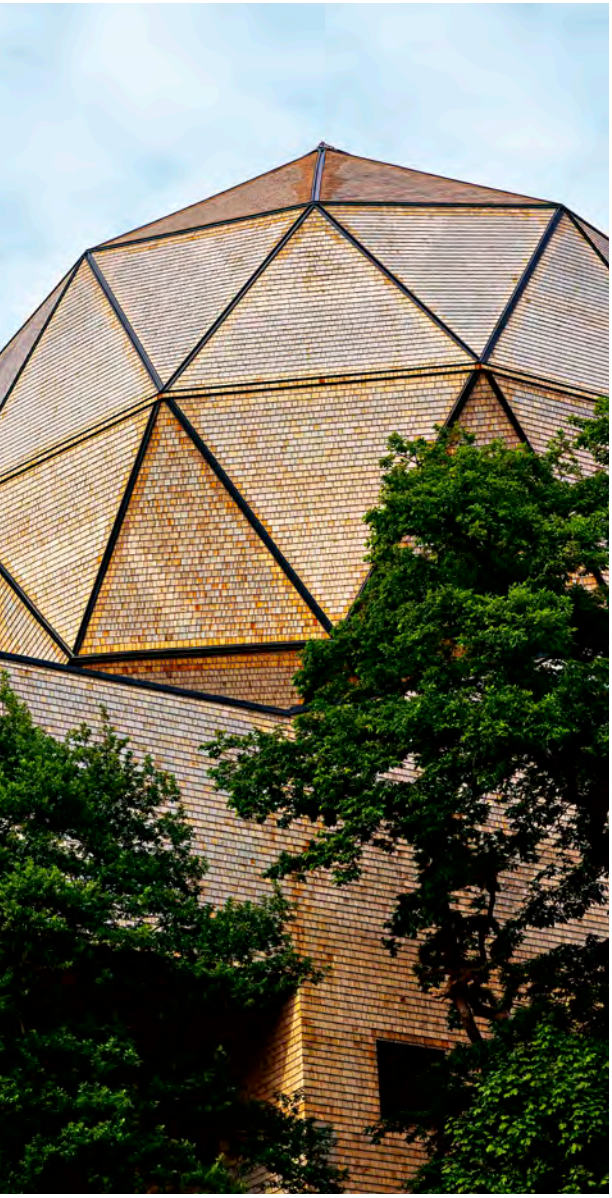
Completed in 2001, Universeum in Gothenburg was commissioned to be Sweden's national science centre, with a mandate to spread knowledge and interest in technology and science, especially to children and young people. Wingårdhs architectural practice won the initial design competition and Universeum's original building was constructed largely in wood.

"The building itself has always been a key element of who we are. Together with Gert Wingårdh, we created a timber building that was in many ways unique from a sustainability perspective, reflecting our mission. Our exhibits show how ingenious nature is. We want to help people understand how we all impact on each other in a shared ecosystem where everything is connected and everyone has an important role to play. It is important to us that our physical home is close to nature and sustainable, and wood conveys that feeling," says Carina Halvord, CEO of Universeum.

After 15 years, Universeum embarked on an extensive development programme. Its ambitions to reach a broader target group and refresh its offering with new experiences in digitalisation, data visualisation, mathematics and science obviously meant more space was required. The result was a bold, unique extension of more than 4,500 square metres, divided into a high and a low section, a bridge about 60 metres long, a tower with a lift shaft and the crowning



ANGULAR SPHERE
The spherical visualisation dome has a diameter of 27.5 metres at its equator, and it is composed of 64 glulam triangles in total. The beams for the triangles, whose sides are 8 metres long, were prefabricated at Setra's factory in Långshyttan.



glory, a spherical visualisation dome clad in cedar shingles.

Once again, Gert Wingårdh has provided a creative solution with a timber frame.

"It's great to continue a project 20 years on. Wood is a hallmark of Universeum. The way the physical space of a facility like this embraces visitors is important and there was no hesitation in continuing with wood as the material of choice for the extension. Universeum received the Swedish Wood Award in 2003, as a public building with an unusual amount of wood. In 2019,

"WOOD IS A HALLMARK OF UNIVERSEUM"

Gert Wingårdh, architect, Wingårdhs

ABOUT THE PROJECT

LOCATION: Gothenburg

YEAR: 2019–2023

GROSS AREA: 4,500 m² extension

CLIENT: Universeum

ARCHITECT: Wingårdhs

STRUCTURAL ENGINEER: MW Byggtekniska and Limträteknik in Falun

BUILDING CONTRACTOR: Skeppsviken Bygg

BUILDING MATERIALS

Most of the frame is made of glulam and CLT. Concrete and steel are present in some parts. The facade is clad in cedar shingles. A glass facade forms the link between the existing building and the extension.

DELIVERY

Setra supplied the glulam for the project in collaboration with Södra, who supplied the CLT. Adam Andersson of Skeppsviken emphasises that a high degree of flexibility, shared solutions and creative ideas from all parties fed into the successful outcome of the extension.

Wingårdhs made the decision to always propose wood for buildings, as we've done here. In addition to creating appropriate operational environments, it's a sustainable material that I really enjoy working with," says Gert.

The extension takes Universeum further into the future. The new building has been carefully integrated into the old one, with a clear vision of showcasing the wood. Wherever possible, the timber frame and glulam beams are incorporated into the interior design.

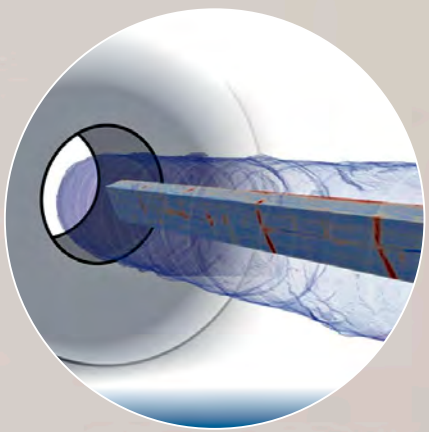
The turnkey contractor is Skeppsviken Bygg in Gothenburg. Contract engineer Adam Andersson's first reaction to the drawings was a mix of admiration and horror. The fact that the visualisation dome was shaped like a giant sphere was just one of the challenges posed by the project's highly complex geometry.

"Spectacular! What an incredibly cool design with so many clever elements and complex constructions. The bridge alone – connecting the different parts of the building, high and low – is a unique solution. Built entirely in glulam, 60 metres long, eight metres wide, spanning 40 metres high in the air, it's an advanced, high-tech creation. The preparations all had to be meticulous, and we had to go into great detail to assemble the glulam beams for the spherical dome. Assembly was piece by piece. We worked out the location and number with millimetre precision and we got there in the end," says Adam.*

INTERNAL PROPERTIES OF THE LOG

X-ray technology combined with ***AI*** gives sawmills new opportunities to optimise their operations. This technology could ultimately make the wood industry even more sustainable and beneficial to society.

TEXT: **MARIE KARLSSON**
ILLUSTRATION: **LTU**



New technologies enable the industry to map the properties of logs and make more efficient use of the raw material.

Luleå University of Technology (LTU) is developing world-leading technology that reveals all the internal properties of a log before it even gets near a saw blade. X-ray computed tomography can be used to assess the log with great precision and determine in advance how best to use it.

Rapid technological advances in society have also seen work at Swedish sawmills become digitalised and made more efficient. The CT Wood research programme brings together PhD students and senior researchers in wood tomography and wood industry digitalisation, with a view to improving the wood processing industry.

The ability to see what properties each log has will change the way sawmills work, says Bror Sundqvist, the head of CT Wood.

"Advanced X-ray technology using a CT scanner creates three-dimensional digital models that give us an accurate picture of the wood we have in the sawmill. For example, we can see and measure the size and shape of knots and optimise the sawing pattern, which increases efficiency, improves quality and minimises waste – results that everyone wants," says Bror.

Together, X-ray images, measurement technology and AI models can process the raw material, screen out defective logs and find patterns that make sawmill systems and processes smarter. Setra's sawmills already use several different AI models, says Karl Berntsson, Business Developer Supply Chain and Technology.

"AI modelling opens up new worlds. We're teaching the programmes more and more tasks, but we have a lot to learn ourselves. The research at CT Wood is exciting. Setra works to customise perfect solutions for our customers, so it would be great to be able to produce a precise quality at the product level to suit what the customer wants. If we can use technology to select the best possible log for a specific purpose, that has enormous potential," says Karl.

Bror Sundqvist recognises that we are still in the process of understanding how to use the new knowledge provided by the technology moving forward. In the long run, both the technology development and the research programme are about more than the work at the sawmills.

"If we can learn how to optimise what happens in the sawmill, we can also translate this knowledge to industrial wood construction more generally. It's about increasing the ability of wood products to take their rightful place in sustainable construction – investigating which wood raw material is best suited to which industrial sector and understanding how we can best utilise the forest resources for the benefit of the environment, the climate and society."*

CT Wood is a joint programme launched by Swedish Wood, several forest and wood industry companies including Setra, the Kempe Foundations, Skellefteå municipality and Luleå University of Technology.

"WE CAN OPTIMISE THE SAWING PATTERN."

Bror Sundqvist,
Head of CT Wood

"AI MODELLING OPENS UP NEW WORLDS."

Karl Berntsson,
Business Developer Setra

IMAGE: DUNJA OPALKO

Pioneer in wood construction

Andrew Waugh, a world leader in wooden architecture, has a vision that virtually all structures should be made of wood. He argues that this is the only option for sustainable industrial construction.

ANDREW WAUGH

CAREER: Architect, researcher and advocate of industrial wood construction. Founded the London-based practice Waugh Thistleton in 1997 with Anthony Thistleton.

WORKING ON: Plans for housing in Årstafältet.

TEXT: **IVA STEPÁN**

Andrew Waugh himself lives in a timber building – on the seventh floor. He finds it difficult to pinpoint exactly what makes the indoor climate in a timber building so pleasant, but mentions harmony, quietness and the absence of static electricity as contributing factors.

IMAGE: RIBA

IMAGE: WAUGH THISTLETON

Waugh Thistleton Architects have produced sketches for new neighbourhoods in Årstafältet, Stockholm.

Andrew Waugh, a British architect and pioneer in mass timber construction, had no specific interest in wood during his studies. He founded his own architecture firm, Waugh Thistleton Architects, with Anthony Thistleton immediately after graduation and the duo found themselves seeking out their own path.

"We felt that the construction process and quality were not up to scratch; the industry was working in the same way as it had always done. The whole of our education was about compromise, the buildings were never as good as we wanted. We were looking for something that could modernise and improve the construction process while having a low climate impact."

The solution came with the development of cross-laminated timber (CLT), which took off in the 2000s. They built their first project in CLT in 2003, and six years later the world's first high-rise CLT building, the nine-storey Murray Grove apartment block in London.

"The project was a real eye-opener – the whole construction process was quiet and fast, with no environmentally hazardous materials and a good working environment."

"The solution came with the development of cross-laminated timber."

Since then, Andrew has dedicated his career to working with and researching wood construction. With wood accounting for the majority of new builds, he thinks it is also going to change the look of our cityscapes.

"Today's cities are built upwards simply because you can if you use concrete, not because people feel good in these buildings. High-rises create shady and windy environments. Wooden cities will have lower buildings and be based on values such as harmony and creating healthy environments where we bring nature in. The material determines the look and shape."

According to Andrew, a change in our approach to construction is inevitable and will mark a paradigm shift.

"All my career I've been expecting an imminent breakthrough, and it hasn't come. But I think demand from us ordinary people will create this change. And as society's values shift, it's important that we architects are ready to support that change – we all have a responsibility to bring about this transformation."*

Healthy spaces

Renshammarskolan is one of Bollnäs municipality's most ambitious construction projects ever. The flagship school boasts sustainable, flexible solutions and, not least, an unusually high construction speed.

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

Bollnäs municipality's new pride and joy, Renshammarskolan, will have capacity for 500 pupils.

June 2023. The total construction time is estimated at 18 months.

RENSHAMMAR-SKOLAN

PROJECT: New school building

COMPRISES: A primary school building for grades P–6, with possible adaptation to pre-school and high school.

LOCATION: Bollnäs, east central Sweden

BUILT IN: 2022–2024

GROSS AREA: 8,000 m²

DEVELOPER: Bollnäs municipality

ARCHITECT: FE Arkitekter

STRUCTURAL ENGINEER: Byggkonstruktören

FRAME: CLT and glulam

BUILDING CONTRACTOR: Sehed Bygg

QUANTITY OF WOOD: 2,200 m³ CLT

BUILDING MATERIALS

External and internal load-bearing walls in CLT, basement in concrete. Glulam posts and beams plus some steel beams. Interlocking CLT floors instead of pouring concrete to minimise the proportion of concrete for environmental reasons. Timber roof trusses, clay tile roof. The facade is lined with brick and thermowood cladding.

In spring 2019, the decision was taken to build a new school in Bollnäs – a large, modern, community hub with premises optimally adapted to their purpose. Wood as the primary material choice would promote children's well-being and learning, in a sustainable, natural environment.

And that is pretty much exactly the vision that is materialising right now in scenic area Ren. Per-Erik Karlsson, property manager at Bollnäs municipality, explains that the school is being built for 500 pupils in grades P–6, but is being adapted for various future options.

"We're getting a new school with healthy classrooms that are made for learning and well-being. There is integral flexibility, with rooms and spaces that can easily be adapted for future needs. We know that pupil numbers change over time and we're already building in the possibility of teaching high school students or pre-schoolers. Each classroom has a breakout room, for example, with a water supply so it can easily be

ROOM FOR EVERYONE

»Renshammarskolan consists of seven units, each containing three study spaces, making a total of 21 study spaces plus associated classrooms for science, woodwork, art, music, textiles and home economics. There is also a library, along with staff rooms, meeting rooms and four wraparound childcare facilities.

Around 50 people are working on the construction of the school. Most come from local businesses in the area. Gustav Nordgaard of Sehed Bygg, and Setra's Victor Jacobs are proud to be contributing to the development of Bollnäs.

transformed into a baby changing room," Per-Erik explains.

Sustainability and environmental considerations are always important to Bollnäs municipality, particularly when it comes to school environments. There are several reasons for choosing to build the school in wood with a solid CLT frame, says Per-Erik.

"The Renshammarskolan project adopts a long-term perspective. We see wood as the most sustainable and natural material choice, but it's also about creating pleasant acoustics and, not least, a welcoming environment. Wooden spaces are calming and give a warm and inviting feel, which is exactly what we want for our children."

Another factor in wood's favour is that building a mass timber frame is fast, with short construction and delivery times.

"Wood is the most sustainable and natural material choice."

Per-Erik Karlsson, property manager at Bollnäs municipality

The groundbreaking ceremony took place in November 2022 and the school will be completed in autumn 2024. One of Hälsingland's largest construction projects in decades is also Setra's largest delivery of CLT for a single building. A total of 2,200 cubic metres of CLT will be supplied to build the 8,000 square metre school.

Demands for such quick results mean delivery times are critical, says Gustav Nordgaard, buyer and site manager at main contractor Sehed Bygg.

"The school was built in four separate sections, with the walls and floors of each section being on two levels. Each part took three weeks to erect, so the total assembly time was 12 weeks. That's really fast. The timber frame was assembled according to plan, and crucially the deliveries of the custom elements were so incredibly punctual, we didn't have to wait a minute for materials," says Gustav.

Setra optimised the transport solution for Renshammarskolan. With elements carefully loaded onto the largest available trucks, it only took 36 consignments from Setra's plant in Långshyttan, Dalarna, to the construction site in Bollnäs. The forest raw material comes

Building elements on the way. Each part is custom-made in the factory and can be quickly assembled. The entire school was erected in 12 weeks.

from the area around Heby sawmill, which is also located in the same part of the country. This means that the material travels a maximum of 400 km from the forest, through processing and on to the construction site.

"We know that sustainability is a priority for the end customer and this naturally includes transport solutions. Fortunately, we only have to drive relatively short distances to Bollnäs and we've made sure to make as few trips as possible, all using HVO100 biodiesel, a renewable fuel," explains Victor Jacobs, Setra's project manager for Building Solutions.

The collaboration between Sehed Bygg, Setra and Bollnäs municipality has been rewarding and educational, with everyone helping each other and making decisions jointly throughout the project. The choice of a construction system in CLT was a challenge for Gustav and his colleagues, as they had not previously built such large projects with a timber frame.

"We know that sustainability is a priority."

Victor Jacobs, Setra's project manager for Building Solutions

"Mass timber proved to be a flexible and fast building material. It's much lighter than concrete, easy to install and causes less vibration to the hands. Wood is also easy to modify or saw as needed on site if necessary. The elements were delivered with pre-cut window openings and most things were pre-prepared, so for the most part we simply had to assemble ready-made pieces – a major time-saver," says Gustav.

Work has been in full swing over the summer, and this autumn will see the installation of windows, roofing and utilities, as well as all the interior work required to complete the school for its opening in 2024.

Per-Erik, Gustav and Victor are all proud of the joint effort and are happy to be contributing to Bollnäs' ongoing development.

"We're really looking forward to the start of classes. Renshammarskolan is an important project in many ways – a positive move in a time of uncertainty. A sustainable building in renewable materials, an instructional model for the future."∗

HELENE MORIN HANSSON

OCCUPATION: Headteacher in Bollnäs municipality
WORKS AT: Kilbergskolan, while awaiting Renshammarskolan

FOCUS ON REUSE

As a new school takes shape, old school buildings are being demolished. Any material that can still be used is recovered and given a new life in Renshammarskolan. For example, the brick from the former Rensbacken school has been ground down and used as aggregate.

The school environment is crucial for education

Providing a safe environment for pupils and teachers in appropriate classrooms is essential for learning, happiness and well-being, according to Renshammarskolan's headteacher Helene Morin Hansson.

TEXT: **MARIE KARLSSON**

The dilapidated state of school buildings in Bollnäs has meant that primary and middle school pupils have been taught in different locations – in outdated premises that are poorly suited to the job. Helene's delight at the new, well-planned and purpose-built school building is palpable. A climate-smart, community school is desperately needed.

In what ways is school design important?

Those of us who work in schools know that the look and feel of the building is crucial, and this is supported by research. The choice of colours and materials sets the tone for the place where the children and teachers work. Rooms that are fit for purpose and the possibility to withdraw or work in groups are vital, for example in reducing stress. Renshammarskolan will be a calm place in natural colours, with the many exposed wooden elements lending a welcoming feeling.

Have staff been involved in the decision-making?

The whole team is immersed in the process. We've been involved since the design stage and have been able to influence the many choices that define the building. We hope that wood will also be the predominant feature of the finished interiors. Creating a harmonious environment without garish colours and stressful sounds has been a priority.

What are you most looking forward to?

Being able to create a sense of unity! Being able to help each other across working groups, seeing students of different ages learn from each other. But above all, being part of a sustainable working environment. The school is so needed and will make a huge difference. The level of engagement is amazing, it feels like the whole of Bollnäs is looking forward to the opening.∗

Keeping track of certifications

A growing number of environmental certification schemes for Swedish buildings are driving the trend towards greater sustainability. But which certification applies to what?

TEXT: **MARIE KARLSSON** IMAGE: **MADELEN LINDGREN**

CAROLINA LARSSON
SWEDEN GREEN BUILDING COUNCIL, SGBC

The number of certified buildings has increased significantly in Sweden in recent years and more and more clients are seeing environmental certification as a natural element of their projects. But navigating the systems used for building certification is not easy.

Carolina Larsson, Head of Certification at the Sweden Green Building Council (SGBC) explains the concepts.

"Environmental certification shows how environmentally friendly a building is. The certification also confirms that sustainability issues are addressed during all phases of the project. On achieving the environmental performance standard, the client is given a certificate as proof that the project has been delivered in line with the specific requirements of the certification scheme in question. SGBC's three most common certificates for newbuilds are Miljöbyggnad, LEED and BREEAM.

The three different systems assess the same factors. The differences lie in the level of depth in different areas and the parameters assessed.

"The client's needs are what determine the most suitable certification system, i.e. how and why they want to certify the building. If, for example, the focus is on climate calculations, then wood has a good impact in all environmental systems and is considered a favourable material to work with," says Carolina Larsson.*

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CERTIFICATIONS IN THE CONSTRUCTION INDUSTRY

To provide an overview of where the various environmental certificates come into play, Daniel Wilded, Product Manager Building Solutions at Setra, suggests breaking them down into three groups: ***wood raw material, construction products and buildings.***

1

WOOD RAW MATERIAL (planks and boards)

FSC®
Forest Stewardship Council®. The scheme covers wood and other forest products and promotes ecologically, economically and socially sustainable forestry.

PEFC
Programme for the Endorsement of Forest Certification. An independent global organisation with a responsible forestry certification scheme. Covers forest management and social and environmental standards.

2

CONSTRUCTION PRODUCTS (construction timber, glulam, CLT)

Basta
Basta seeks to phase out the use of particularly hazardous chemical substances and provides a database of construction products that meet the organisation's requirements.

Byggvarubedömningen
A system for the environmental assessment of construction products. Their web-based tool facilitates the selection of environmentally sound construction and management materials.

Sunda Hus
Phases out hazardous substances across the life cycle of a building, providing both advice and a web-based system.

Nordic Swan Ecolabel
Ensures, among other things, building products made of wood from sustainable forestry, minimal impact from substances hazardous to health and the environment, and a lower climate and energy impact.

3

BUILDINGS

Miljöbyggnad
Swedish certification system based on Swedish building and government regulations and building practices. Focuses on energy, indoor environment and materials. Sweden's leading environmental certification with 16 different indicators to meet.

BREEAM
Europe's most common environmental classification system. Used when needed for international comparisons. Provides a broad environmental assessment including the outdoor environment of the building.

LEED
International certification scheme focusing on the use of resources such as land, water, energy and building materials.

»Setra's markets are Sweden (30%), Europe (29%), Asia and Australia (21%), North Africa and the Middle East (12%) and the USA (8%).

IMAGE: HARUNORI NODA/GANKOSHA

Recycling after Tokyo Olympics

The Athletes' Village plaza was built as a temporary facility for the 2021 Olympic Games in Japan. The structure was made from 40,000 borrowed pieces of wood from different regions of the country. Now the building has been dismantled and the parts have been reused in their respective municipalities of origin as benches, information desks and furniture in public places – sometimes with inscriptions about the unusual history of the material. Architect Nikken Sekkei.

Going green in England

Setra is gearing up its customer offer in England and improving the products' climate performance. Close to half of Setra Wood Products UK's energy consumption during processing now comes from the company's own solar energy.

"It is an investment that benefits everyone. We have also invested in new, more energy-efficient machines and technology that allows us to offer an even more sustainable range – including interior and exterior cladding, planed products and timber for load-bearing structures. We target both builders' merchants and the industrial sector", says Jason Dodd, Sales Manager at Setra Wood Products UK.

GLOBAL FLOWS

World events such as Russia's war on Ukraine, the economic situation in Europe and large-scale forest fires in Canada are affecting the global trade in wood products.

NEW TRADE PATTERNS »
Changes in imports and exports in the first half of 2023 compared to the same period in 2022.

Sources: Eurostat, USDA, UK Trad Info, China Customs

IMAGE: BRIAND BOIS

FLEXIBLE LIBRARY IN PARIS

L'Échappée media library in Paris suburb Herblay sur Seine, opened in summer 2023. Within a space of 2,200 m², the public can read, play, socialise and participate in cultural events. The innovative building, with its high levels of natural light, is concentrated in one large space, creating total flexibility in terms of possible uses.

"The wood contributes to an enveloping and light feeling in this long gallery," says Romain Buteau, project manager at Briand Construction Bois.

Natural materials such as wood and stone are the dominant choices, giving the building a high sustainability profile. Setra supplied the raw material for the project's glulam.

IMAGE: CHRISTIAN LJUNG

BIOPRODUCTS
Setra uses its own biofuels to generate heat at its facilities and also produces district heating to the local community. The main use of bioproducts is as a raw material for the pulp and paper industry.

Renewable energy from the sawmills

The wood industry makes use of the whole log. Setra's products include sawdust, bark and wood chips that are converted into, among other things, bioenergy with community benefits.

TEXT: **IVA STEPÁN**

1 SAWDUST

Sawdust is used as biofuel in heating plants and as a raw material for pellets. Setra's part-owned company Pyrocell also processes the sawdust into pyrolysis oil (bio-oil) for biofuel production.

2 BARK

Bark is primarily used as a biofuel, either in pure form or in fuel mixes.

3 DRY CHIPS

Dry chips are pieces cut from dried wood. The low moisture content makes these wood chips a high-value fuel for boilers, heating plants and grain dryers.

4 FUEL MIX

The mix is tailored to the customer's needs and based on bark, dry chips and wet shavings.

PELLETS OF THE FUTURE
Setra is building its own production facility for industrial pellets. The raw material will be the best possible – dry chips and sawdust/shavings from glulam, CLT and component production in Långshyttan.

SUSTAINABLE
Setra's production units are PEFC and FSC® certified and can therefore offer certified wood products and bioproducts. The biofuels have a sustainability certificate from the Swedish Energy Agency, which means they are classed as sustainable.

PONTUS FRIBERG, Director of Risk Management at Setra and Chairman of Pyrocell.

"FORESTS HAVE GROWN IN IMPORTANCE"

This year marks 20 years since Setra was founded and much has happened since then – in the company, the industry and society. The company came about by merging the sawmill operations of the forest owners' associations Sveaskog and Mellanskog. The new name "Setra" was based on the abbreviation for Sweden and the Swedish for "see", plus the Swedish for wood, giving "se trä", meaning see wood, which supported the market strategy at the time of focusing primarily on "visible" wood.

Over the years, Setra's operations have been streamlined and refined. 20 years ago, the emphasis was entirely on products for joinery and interior and exterior products, builders' merchants and the DIY market. Industrial construction in wood was still in its infancy. Today, the demand for wood as a building material is growing steadily, and the sawmill industry is about more than just sawmills – we offer value-added wood products produced in high-tech production facilities. The market has become global and so has the product range.

There are many parameters driving change, but perhaps the biggest is the demand for sustainability, not just in the forest but all the way along the value chain. We had forest certification and sustainable forestry in place by the early 2000s, but carbon sequestration by the forest and wood products was not on society's radar. The importance of forests has grown in the transition to a sustainable and fossil-free future.

As the industry has moved from a traditional basic industry to a modern, international wood industry with sustainability as its watchword, we have also become an attractive industry to work in. Investments in factories and improved working environments have transformed the wood industry into a modern workplace. Today, the forest industry is growing in popularity – working with wood is an honourable profession.

If Sweden is to continue benefitting from the fantastic potential that wood offers as a raw material, we need to get even better at managing the forest in a sustainable way, making efficient use of the forest's resources and continuing to develop products from the forest. Not least in industrial wood construction.*

SEPTEMBER
2023
UNIVERSEUM
GOTHENBURG

The new extension takes the Universeum science centre into the future. The choice of wood and the ingenious solutions reflect its sustainable ambitions.