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FROM SWEDISH WOOD » ISSUE 4 » 2020

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Inspired by nature, the nearby mine and Sami culture, Kunskapshuset in Gällivare is now complete. With its bright red, multi-level façade, it has become an instant landmark.

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 SVENSKT TRÄ

Swedish Wood represents the Swedish sawmill industry and is part of the **Swedish Forest Industries Federation**. The forest industry is one of Sweden's most important business sectors. It provides employment throughout the country. Thanks to its natural raw materials and products, the forest industry has a key role in the development towards a sustainable, biobased society.

Trä magazine is aimed at architects, structural engineers and everyone else interested in architecture and construction.

Publisher Arbio AB

Responsible publisher Mathias Fridholm

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Cover Ateljé i Södersvik by Södersviks arkitekturproduktion. Photo Åke E:son Lindman.

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Repro Italgraf Media **Printing** Trydells

Paper Cover Arctic silk 150g, insert Arctic matt 100g

Print run 25 500 ex

ISSN-number 2001-2322

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Mathias Fridholm Director, Swedish Wood

Optimising value with new technology

HUDIKSVALL, SWEDEN I've discussed the properties of wood, such as improving our well-being, in previous editorials. But did you know that wood also has an important role to play in success and good fortune? I'm not talking about profitable wood processing industries or attractive wooden buildings. I'm thinking about the saying »ta i trä«, which is used to prevent higher powers from raining down misfortune. How is it that wood has come to play such an important role in Swedish mythology? In fact not just Swedish, as »touch wood« and »knock on wood« in English mean more or less the same thing.

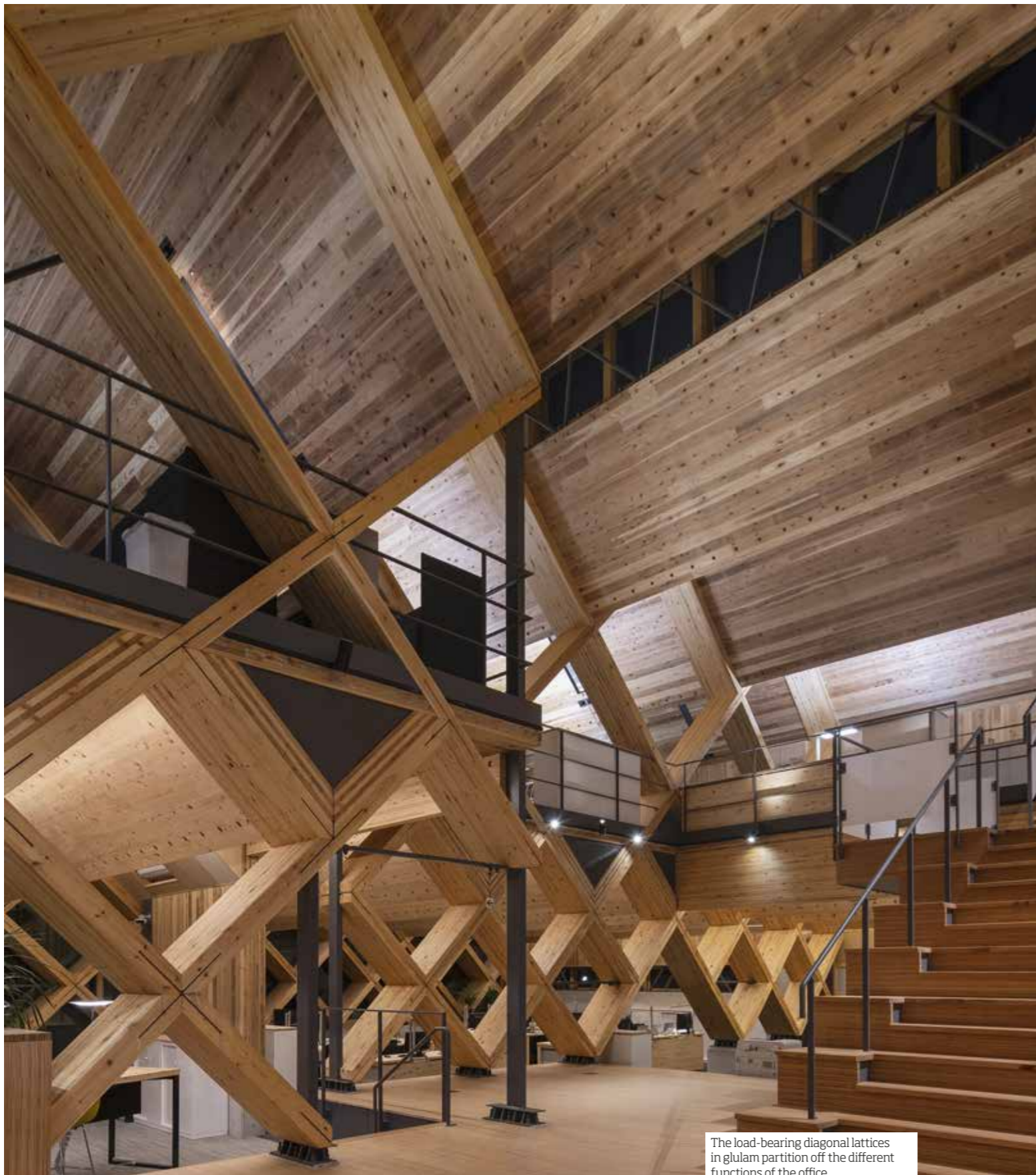
A quick search on the internet suggests there may be a number of explanations for this. Before Christianity took hold in Sweden, it was believed that spirits and gods lived in trees. If you wanted their attention and protection, it was only natural to knock on the tree trunks. Another theory is that people hit trees to create noise and frighten away evil spirits. Once Christianity had established itself, the wooden cross became a protective symbol. By holding a wooden cross, you received the protection you needed from God. In the middle ages, there was a vibrant trade in small pieces of wood that were claimed to come from the cross that Jesus carried. Whether there was any truth in this or it was an early example of false advertising, I wouldn't like to say. Knocking on wood has also featured in many stories of people who have hidden in wooden buildings to avoid their enemies. Creating different coded knocks meant you could tell whether the person outside the door was a friend or foe. The acoustic properties of wood have thus proven useful throughout history!

And finally on this topic, don't forget Amii Stewart's hit »Knock on Wood«. It may not have much to do with the tall tales above, but who doesn't need cheering up with a bit of disco these days?

Swedish Wood's biggest event, the Wood Award Gala, was held on 2 December at Berns in Stockholm. The winner was announced with all due ceremony, and in this issue you can read more about the winning project and why the jury chose it. The diverse collection of nominated projects shows that wood construction is strongly positioned and making advances in all types of building. That is a development to be proud of.

Finally, I would like to wish every reader a Very Merry Christmas and a Happy New Year. Stay safe and healthy everyone, so 2021 can be the year that social distance eventually turns into social closeness. Touch wood!


Mathias Fridholm



Senichiro Nagami



Javier Callejas

Cosy nests in the wall

OAXACA, MEXICO Everyone needs an attractive and calming place to rest, and hens are no exception. This informed

OBJECT Chicken coop

ARCHITECT Kengo Kuma & Associates

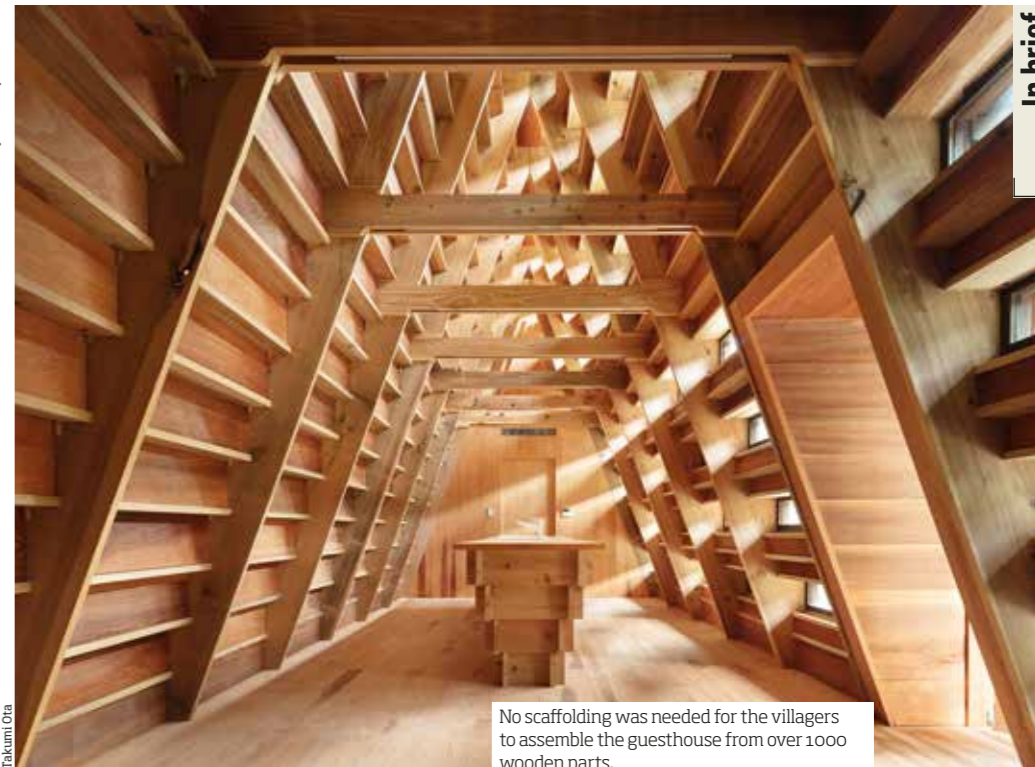
STRUCTURAL ENGINEER Ejiri

Kengo Kuma's approach when the Mexican art foundation Casa Wabi requested a shelter for its chickens. The new henhouse has been designed like a pavilion, with connecting wooden panelling 30 millimetres thick forming a boxed pattern. Each box serves as a nest, with steel netting at the back replacing the outer wall to allow in light and air. The wood has been finished using the shou sugi ban technique, which makes it durable and resistant to insect attack and damp, for example.

The open environment keeps the temperature at a comfortable level in the pavilion, but part of the structure is also roofed with moisture tolerant plywood, which both helps with stability and gives the chickens extra protection against the sun and occasional rain. Next to the henhouse there is a space for packing eggs, and a quarantine area is also going to be built for chickens that are ill and need to be isolated from the flock. «

w| kkaa.co.jp

Takumi Ota



No scaffolding was needed for the villagers to assemble the guesthouse from over 1000 wooden parts.

Guesthouse breathes new life into village

NANTO, JAPAN In the Japanese village of Toga, over half of the 600 residents are more than 65 years old, putting the community at risk of slowly dying out. This, and the fact that the region is heavily forested, prompted the idea of creating a prototype for a simple guesthouse that is easy to erect and could attract visitors, maybe younger people who want to spend time with their older relatives.

The concept is based on the use of local timber that is precision cut at the local sawmill using a newly developed CNC machine. The gables face north and south, with the sides running parallel with the surrounding mountains, providing shelter from the wind while also ensuring good natural daylight and ventilation.

The building is designed so even those with no experience can assemble it, and this has given the project a social dimension, with residents coming together to help out. No scaffolding is needed, and the kit comprises over 1000 wooden components plus the same number of connections. «

OBJECT House for Marebito

ARCHITECT Vuild

STRUCTURAL ENGINEER Vuild

w| architects.vuild.co.jp

Exposed frame breaks up space

OBJECT Meiken HQ

ARCHITECT NKS

STRUCTURAL ENGINEER Torisha

MANIWA, JAPAN When Japanese engineered wood company Meiken Lamwood commissioned a new head office, the result brought all the company's employees under one roof, instead of being spread across several sites. However, the building also serves as an impressive showcase for just what can be achieved with wood.

The transparent southerly façade and small rooflights illuminate the building's interior, while the east and west façades are lined with CLT and

finished with exterior cladding in furfurylated pine.

The defining feature of the design is a lattice-work of interior glulam beams. The v-shaped roofs in exposed CLT top off the diagonal lattice structure.

The building comprises two floors with an atrium in the middle and workspaces arranged around it, all separated by the recurring lattice. « **w|** nksarc.com

The load-bearing diagonal lattices in glulam partition off the different functions of the office.



Björn Larfrenn

This studio is carefully positioned on plinths, and large openings create a connection with nature.

Discreetly placed experiment

LISÖ, SWEDEN On a peninsula looking out across Stockholm's southern archipelago, a studio has elegantly sneaked its way in among the pines and rock formations. The studio is a private space of 40 square metres that stands as a complement to the main building. Three sleeping alcoves are arranged around a shared core that includes a staircase leading up to a sleeping loft and bathroom. The core section houses the main bathroom and all the technical features. Generously sized windows allow light to

flood in and make the most of the views, ensuring close contact with nature. The CLT carcass has been left exposed internally, with the lively surface of the CLT elements providing a pleasing contrast with the wide floorboards in knot-free ash. The external frame-sawn spruce cladding is fixed with cut nails and harmonises with the copper roof, which is designed for the windy location.

The studio is the result of a limited budget and a desire to make a minimal impact on the land, but the architects also see the project as a way to learn more about planning and building their own designs using CLT. «

OBJECT Atelje Grytnäs

ARCHITECT In Praise of Shadows

STRUCTURAL ENGINEER Magnus

Emilsson, Limträteknik

w| inpraiseofshadows.se

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The warm shade and lingering scent of the pine tree are intended to give a sense of the forest.

Solid walls give special feel

OBJECT Family villa
ARCHITECT Pedevilla
STRUCTURAL ENGINEER Holzius

SOUTH TIROL, ITALY A little over two years ago, in late October, a ferocious storm tore through Enneberg in South Tyrol and many trees were flattened. However, some of that wood has been put to use in a local house. The structure of the three floors is made entirely from storm-felled spruces, which were cut into 60 millimetre thick planks and then joined together, without adhesive, to form 360 millimetre thick walls. With such large dimensions, there is no need for any extra insulation. Internally, the visible layer of the mass timber elements, which is hand-planed pine, forms the inner walls. The façade and roof look fully integrated due to their cladding in hand-cut larch shingles, creating a monolithic silhouette in the landscape.

Even the concrete foundations are from the area, with dolomite rock taken from the nearby stream and mixed with the plot's own thermal spring water. To further mark the local nature of the building, only craftspeople from the valley have been used, and great emphasis has been placed on local building methods as a way of highlighting the culture of the region and preserving 1000 year-old knowledge. « w|pedevilla.info

Hand-shaped modules create room

TRIKALA KORINTHIAS, GREECE Caves have been used as a refuge and haven since time immemorial, and this is what inspired the renovation of a Greek spa hotel. Within the hard, protective shell – concrete clad with locally sourced stone – a warm and inviting interior opens out, featuring a sculptural design in spruce. The kitchen, cupboards and floor are made from knot-free pine plywood. An air gap between the wooden structure and the concrete shell regulates

OBJECT Wooden cave
ARCHITECT Tenon Architecture
STRUCTURAL ENGINEER Tenon Architecture

the room's humidity and temperature using the wood's natural capacity to absorb moisture. This was important, because the hotel sits at high altitude and the temperature fluctuates considerably all year round.

The curved structure consists of 1,112 different wooden pieces, sawn from trees that grow locally. The design for each section was produced algorithmically and the pieces were then manually converted into 55 larger modules. Each of the modules was hand-carved and shaped before the final assembly, in order to make the end result more sculptural. « w|tenon-architecture.com



The cave-like room comprises modules shaped by hand from drawings produced by an algorithm.



Circular garage

VÄXJÖ, SWEDEN Car parks need to be practical for motorists, but they are rarely pedestrian-friendly, with the flow of

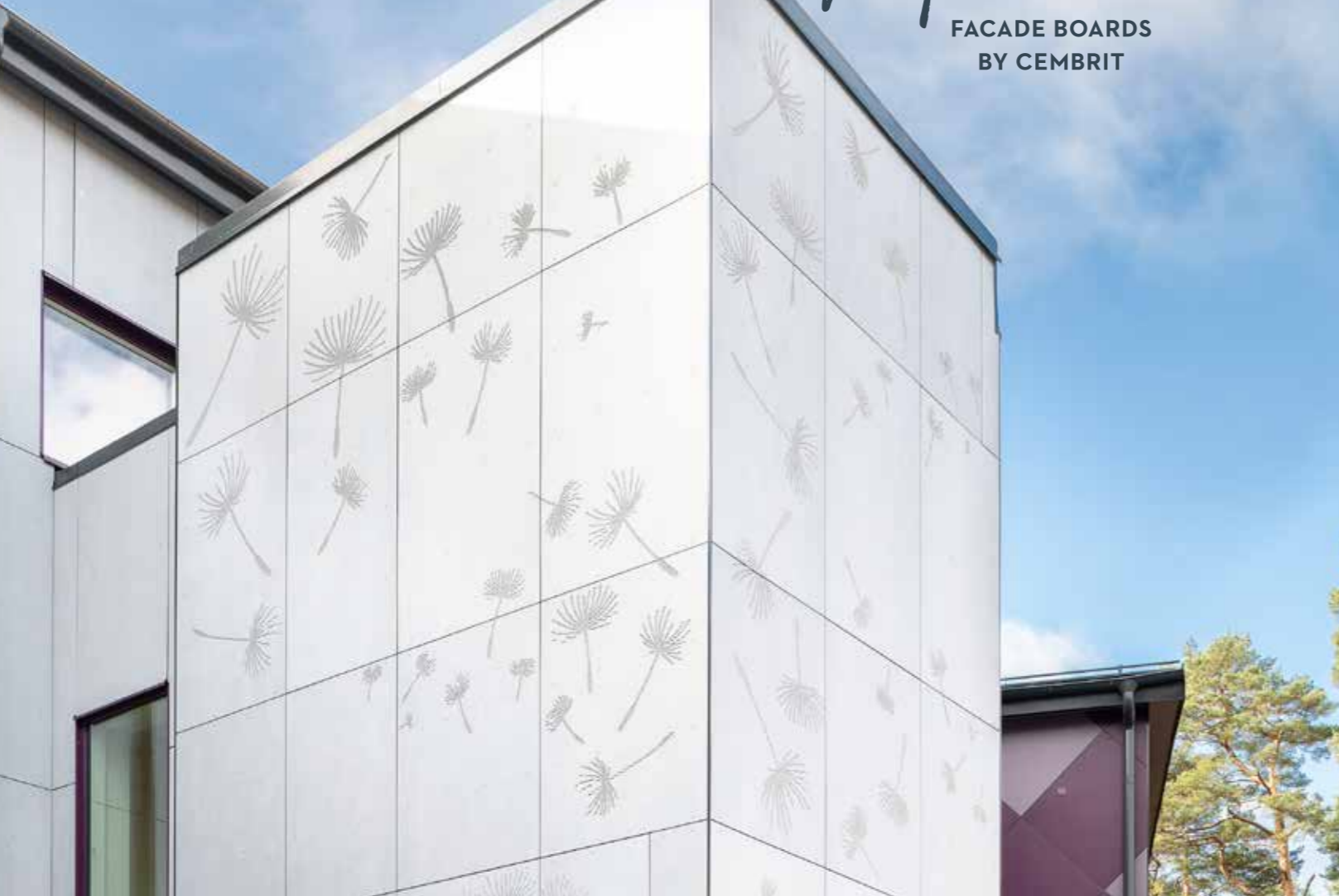
OBJECT Car park
ARCHITECT Liljewall
STRUCTURAL ENGINEER PEAB

vehicles often prioritised over the flow of people. But all that is changing with the addition of a new level to a car park in Växjö. Here the architects have focused on the idea that the design should be part of the landscape rather than a building, and the façade's repeated grid of 424 wooden battens has echoes of trees in a forest. The parking garage is a sturdy post and beam structure in glulam. The soft, warm glulam creates a visual contrast and an interesting play of shadows against the concrete, steel and asphalt.

The building serves as a landmark, with the feel of a park's pavilion and is illuminated at night. Thanks to the terrace on the upper level, pedestrians can also stop for a moment, look out across the landscape and enjoy the views offered by the car park. In addition, the building is designed to be demountable if needs change. « w|liljewall.se

add personality

FACADE BOARDS
BY CEMBRIT



Där maskrosbarnen får blomma

Nya Skiftinge förskola sprakar och lever i sitt uttryck. Sidobyggnadernas lila färgtoner och lekfulla mönster framträder mot den högre huvudbyggnadens ljusgrå fasad i fibercement. En fasad som utsmyckats med skolans signum: maskrosor som sätter frön i vinden.

Arkitekten berättar

“Maskrosorna symboliserar att detta är en plats där barnen kan växa och blomma ut trots en dålig och mager omgivande jordmån. Fibercementskivor är tåliga, robusta och underhållet är minimalt. De ger även en möjlighet att få fram olika gestaltningsidéer.”

Anette Eriksson, Arkitekt SAR/MSA Carlstedt Arkitekter AB

Fler bilder och film från Skiftinge finns på cembrit.se



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Open spaces and exposed wood, combined with steel details, aim to reflect the company's culture.

Open plan offices with restrained material choices

OBJECT Asi Reisen
ARCHITECT Snøhetta
STRUCTURAL ENGINEER Tragwerkspartner

NATTERS, AUSTRIA When travel agency Asi Reisen needed a new head office, it was important that the new building reflected the company's ethos and environmental commitment. Employees were therefore invited to work with the architects to develop the design concept.

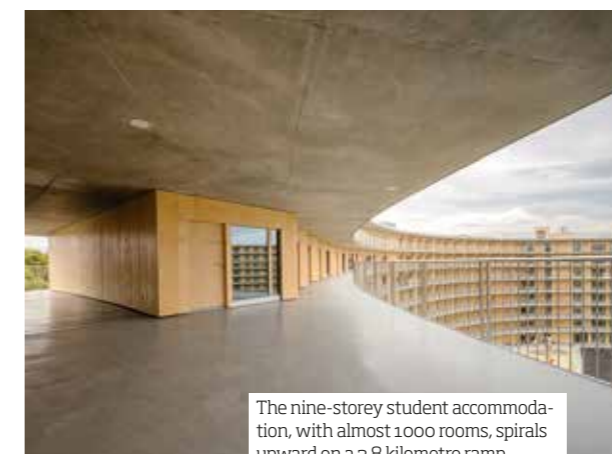
The four-storey building makes restrained use of materials in a design that combines glulam frames with CLT, primarily in the floor structure, and in the open plan office the light wood is exposed on walls, floors and ceilings, complemented with details in black steel.

A reversible air-water heat pump system provides the building with a comfortable temperature and air humidity, all controlled by sensors that regulate the opening of the ventilation flaps. Rainwater is collected from the roof to irrigate the 118 plants that form a green wall running from ground level up the façade. The steel structure serves as a trellis for the plants and culminates in a balcony railing. The façade has been treated using the Japanese shou sugi ban method, where the wood is charred to make it moisture resistant. « w|snohetta.com

Nine floors in a spiral

CHAVANNES, SWITZERLAND The student accommodation at the University of Lausanne houses almost a thousand students, who can easily socialise and also withdraw to their rooms. In the large, round building, social interaction and communal spaces are never far away, creating a small town feel where the inner courtyard can also serve as a sports arena, stage and green space.

Each apartment is a single wooden module that has been positioned at right angles to face either the inner courtyard or the surrounding landscape. They are finished in spruce cladding. All the floors – except the bottom one which houses public areas – are arranged identically, with the



The nine-storey student accommodation, with almost 1000 rooms, spirals upward on a 2.8 kilometre ramp.

OBJECT Vortex
ARCHITECT Dürig, Itten+Brechbühl
STRUCTURAL ENGINEER mwv Bauingenieure

load-bearing concrete elements placed on top of each other.

The nine storeys are connected via a 2.8 kilometre long spiral concrete ramp, which also

serves as the floor and ceiling for each level and has an incline of around one percent. According to the architects, a stroll up to the communal roof terrace with views across Lake Geneva should take around 25 minutes, but for those in a hurry there are also lifts and stairs that lead straight up. « w|duerig.org, ittenbrechbuehl.ch

Maria Block, Blockark & President of The Foundation Byggekologi

What does sustainable building mean in practice?

STOCKHOLM, SWEDEN We have a timeframe of 10 years to come up with global processes in solidarity with future generations. The greenest move would be not to build anything, but to go out and demonstrate for a better world – but that is hardly an option. So what should we do?

In the construction sector, the best thing for the climate is to build in wood, as shown in a study by IVL Swedish Environmental Research Institute, which calculated the greenhouse gas emissions of different construction choices for the building and operation of apartment blocks in Sweden. The result stands whether we include carbon storage in new forest or not. Lightweight beam and lightweight joist systems using wood, coupled with wood fibre insulation, are a sound option from both a resource and a climate perspective. As an architect, I decided long ago to only design buildings made primarily from wood and other plant-based materials.

The carbon dioxide bound up in construction materials must not be released into the atmosphere moving forward. How? By reusing and recycling both buildings and building components, preferably several times over, and then producing biocarbon (charcoal) or using bio-ccs (bio-carbon capture and storage) technology. Alternatively, biocarbon can be used in applications such as water treatment or as a filler in concrete. If bio-ccs is given the right conditions to scale up the technology in an economically viable way, we might get the carbon sinks we need to keep global warming well below two degrees.

Build so recycling is possible. Studies show that recycling leads to resource savings and lower greenhouse gas emissions. Bear in mind that it is not always easy to return painted or treated wood products to a toxin-free ecocycle. New EU rules on waste will be implemented in Sweden by 2025, and this will affect the construction industry (read more at ccbuild.se).

We need to be resource-efficient in terms of both materials and energy/power. Energy efficiency should be on a par with well-built Passive Houses. Cutting peaks in energy demand will also be important in the future, since we risk power shortages in some regions.

Construction product databases contain information and assessment criteria for known chemicals. Pay particular attention to surface treatments, adhesives, fillers and so on. We should also be particularly careful about equipment related to building services. Read the safety data sheet for chemical products and avoid prohibited products that carry health risks and environmental hazards. From 2021, nanomaterials must also be reported.

Here's to solidarity with the next generation!





A TRANSPARENT LIVING ROOM FOR THE VILLAGE

PHOTOGRAPHER
Ivan Brodey
OBJECT
Samling
ARCHITECT
Helen & Hard
STRUCTURAL
ENGINEER DOF &
Creation Holz

SAND, NORWAY The new library in the Norwegian village of Sand offers both culture and literature, while at the same time creating a focal point for the community, with a main street on one side and the church and park on the other. The transparent entrance, with its main walkway leading straight through and out the other side, creates openness and invites people in. The hope is that visitors will also want to stay for a while, have a coffee and leaf through a book.

The two-storey library is built around an atrium that opens up to the roof, letting the exposed glulam frame with its soft curves define the space. The

technical fixtures and light fittings are integrated in the ceiling and concealed by lamellae that continue down the walls and join with the bookshelves to form a unified whole. The lamellae also serve as a sunshade in front of the windows.

The vast majority of the building is made of wood, drawing on the tactile properties of the material while also reflecting Norway's cultural heritage. «

- The exterior and interior are strongly connected by generous windows, which show from the outside that the gently curved façade and its vertical batten cladding are reflected inside.
- The building also houses a bank and apartments. The 10 apartments are situated above the bank, thus making room for the generous ceiling height in the library.

w| helenhard.no

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IKSU klätterhall i Umeå. Fullmodellerad byggbar trästomme i limträ och KL-trä.

Konstruktör: TK Botnia

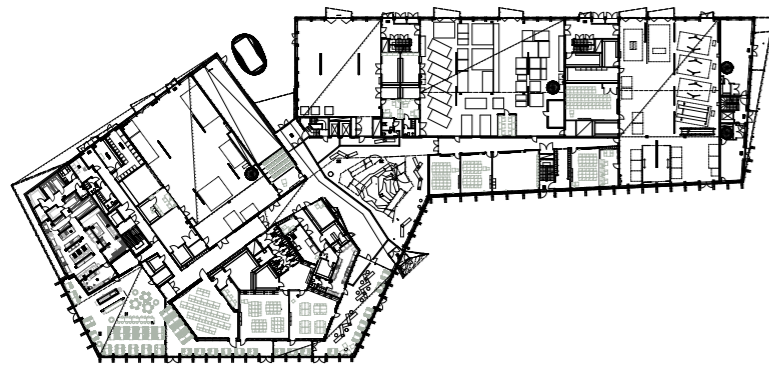
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LANDMARK WITH CHARACTER

With its unique architectural design, Kunskapshuset in Gällivare is a symbol of the new town that is rapidly developing. Inspiration is drawn from the surrounding nature, the mine and Sami tradition, with much of the building made from locally produced wooden elements. »

The building is shaped so that no part of the asymmetrical façade exceeds three floors, since the paint, selected via a research project, does not have a fire protection classification.

TEXT Sara Bergqvist PHOTO Anders Bobert



Plan, floor 2.

The newly opened education centre, Kunskapshuset, in Gällivare in Sweden is certainly eye-catching. The asymmetric, bright red façade over six floors is lined with a combination of glass and externally affixed glulam columns arranged in pairs. The external columns provide both decoration and sun screening, and are connected to load-bearing posts in the same position on the inside. Standing directly in front of the façade, it initially looks completely glazed. But as soon as you see it from the side, it immediately becomes a billowing wave of red wood. The roof slopes in different directions, the façade shoots out in unexpected ways and the interval between the paired columns varies.

Initially, Lars Olausson and Jonas Hermansson had the idea of making the entire building in wood, but this proved far too complicated.

»The local council thought it would be too much of an unknown quantity as the building is so complex, so we chose a combination of wood, steel and concrete for the load-bearing structure. To retain the feel of wood, we have elected to keep it exposed, particularly in the communal areas such as the canteen and the entrance, where it is also the structural frame,« explains Lars Olausson, lead architect at Liljewall, who designed the building together with his colleague, interior architect Jonas Hermansson.

Kunskapshuset is part of the urban transformation that Gällivare is currently experiencing. In a relatively short time, what remains of the neighbouring town of Malmberget is set to be demolished or moved and the community incorporated into Gällivare to make way for the continued expansion of the mine.

»Many of the local authority's public buildings were in Malmberget. When we realised that we would have to move the whole community, we drew up a vision to build a world-class Arctic town. One of the strategies was to create movement and activity in the centre by placing some of the larger public buildings there. The new Kunskapshuset, with its upper secondary school and adult education centre, is a key element of this. And it has really become a striking landmark,« comments Lennart Johansson who, as head of the Department of Community Planning at Gällivare Municipality, has had overall responsibility for the process.

Building the new Kunskapshuset threw up many challenges. First there was the fact that a total of 24,000 square metres, including parking, had to be squeezed into an extremely

limited space. The various façades would also face four very different settings – the square, the main shopping street, the church and the town hall. The client wanted a landmark building, but not one that would take over the entire town. And it would have to house just as many students and programmes as before, but with around 6,500 square metres less space.

»To get a feel for the local landscape and a sense of place, Jonas and I travelled up and went hiking in the area. We even spontaneously decided to spend a night in a Sami cabin by Stora Sjöfallet. We then carried the autumnal reds of the marshlands over into the building,« says Lars Olausson.

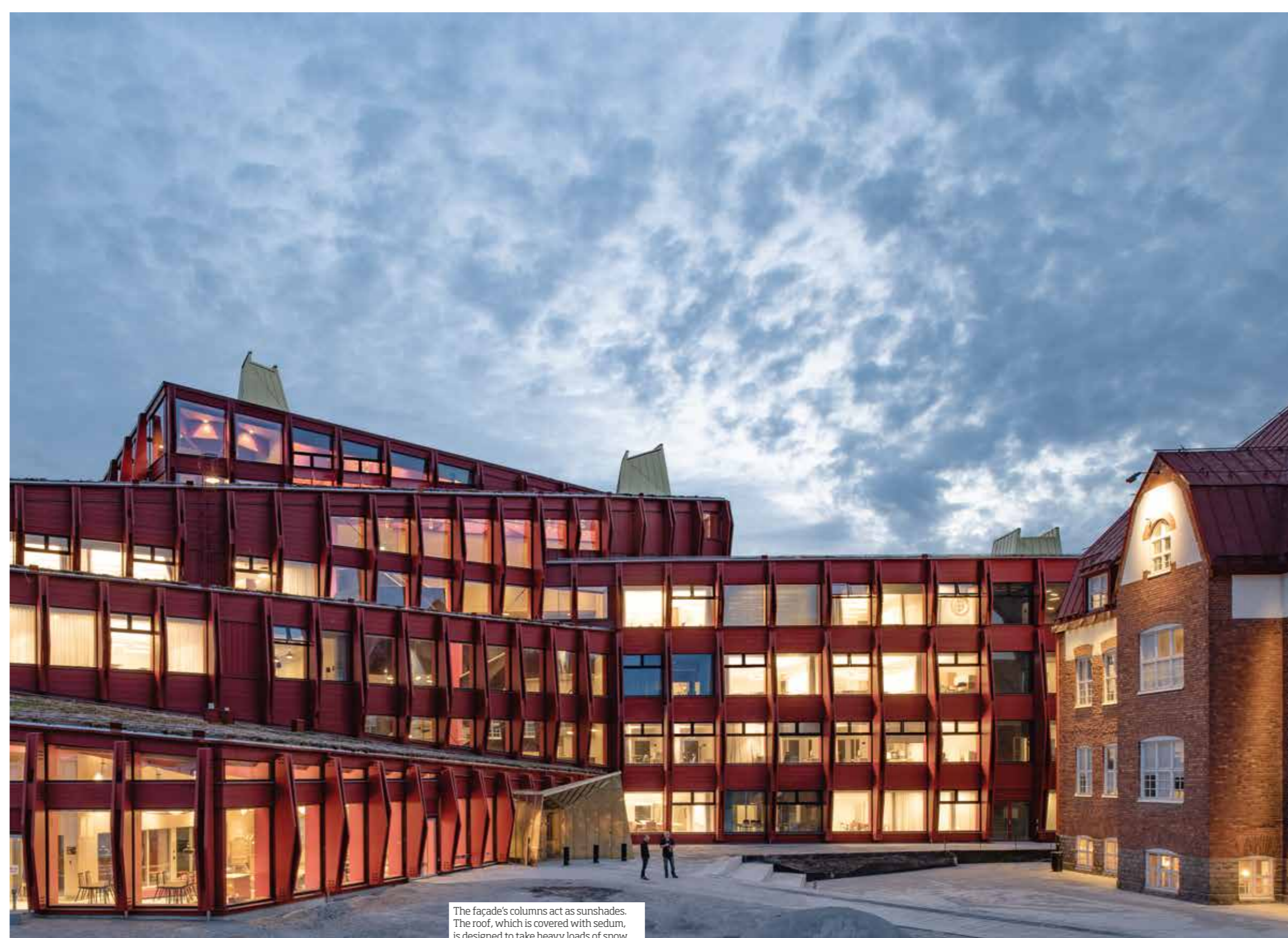
In addition to taking inspiration from nature, they also wanted the building to reflect Sami culture and the mine that

has such a tangible presence in the area, with large open-casts and slag heaps. The red wood on the façade continues inside the building via the corresponding red glulam posts on the inside. Another key detail inspired by the landscape of northern Sweden is the modular seating in red painted pine that recurs in several places both inside and outside the building. This was designed by architect Jonas Hermansson at Liljewall and was produced in partnership with Nola specifically for Kunskapshuset. The entrance hall displays its influences in the steel staircase, the concrete floor and the tall fireplace, which is why it is known as the Mine. The external entrance and ventilation hoods on the roof are clad in a brass-like copper alloy from the copper mine in Aitik. Sami

heritage is incorporated in various places, not least in an artwork integrated into a 21 metre long part of the façade, created by Sami painter Anders Sunna, glass artist Monica Edmondson and textile artist Britta Marakatt-Labba.

Sami tradition has also become part of the actual architecture and structure. The outer sun-screening columns in the façade are inspired by Sami runes and the load-bearing structure of red painted glulam beams in the canteen ceiling follows an angular Sami pattern.

Wood has ended up being the load-bearing material for three parts of the building: the 23 metre high entrance hall and equally high canteen, the café section and the top level»



The façade's columns act as sunshades. The roof, which is covered with sedum, is designed to take heavy loads of snow.



Anna Kristinesdóttir

Architect **Lars Olausson**

»WE CARRIED THE AUTUMNAL REDS OF THE MARSHLANDS OVER INTO THE BUILDING.«



The asymmetric ceiling pattern comprises red painted glulam topped with CLT panels. Practically every part is unique to account for the slope.



The modular seating in red painted pine appears in several places inside and outside the building. It was designed by Jonas Hermansson at Liljewall and produced in partnership with Nola.

» on the seventh floor which houses conference rooms, saunas and a terrace with mountain views of Dundret. The wooden roof structure comprises large, red painted glulam beams in a zigzag pattern, with panels of CLT on top.

»There is no load-bearing metal roofing – panels of wood take up the load in the roof as well,« says Erik Modig, who was chief structural engineer for WSP in the first part of the project.

Each zig-zag wave is then connected to the paired columns in the façade, which are glulam, and in some places also to additional interior glulam supporting posts.

The rest of the structural frame is a combination of steel or glulam posts and a concrete floor.

»Throughout the building, we've used concealed screws, hangers and nail plates as fixings. The only things that stick out are the fasteners for the wing-like columns on the exterior. For this the architect specified black painted bolts that form an attractive detail and pattern,« states Peder Eriksson, structural engineer at WSP and wood project planner.

Both the CLT in the roof and the glulam for the façade, roof and internal posts in the canteen and entrance hall are made of spruce. Glulam also features in interior details such as the benches in the canteen, where visitors have their meals. The ribbed spruce cladding that lines various walls in the building is another distinct hit of wood, along with the seating and

Kunskapshuset GÄLLIVARE, SWEDEN

ARCHITECT: Liljewall.
GENERAL CONSULTANT: MAF arkitektkontor.
CLIENT: Gällivare Municipality.
STRUCTURAL ENGINEER: WSP.
COST: Budgeted at SEK 650 million, final count under way.
www.liljewall.se, maf-ark.se

steps in smoked end-grain oak, with contrasting pine steps at the transitions.

»Steel ties have been used to suspend the staircase from the glulam roof structure, which in turn is tied to the glazed

façade. This was one of the biggest technical challenges of the project. But now we have a stable structure with no sway that we are happy is completely secure,« says Erik Modig.

The plan was for the whole building to be completed in May. However, the coronavirus pandemic hit Gällivare hard, which put a spanner in the works, due to delayed deliveries and because many of the contractors involved were subject to travel restrictions. This meant that the building was finished on practically the same day that the new term began.

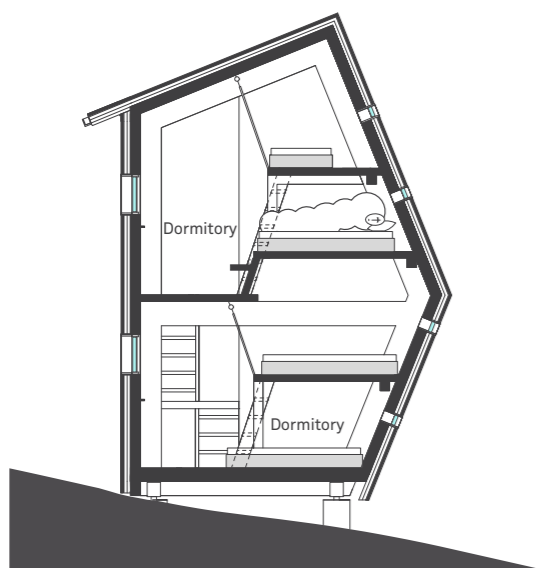
»Naturally, this caused a great deal of stress at the time, but now it feels fantastic to have been able to open the building. From the feedback we've had, everyone who lives here thinks it's fantastic,« concludes Lennart Johansson. ☺

Refuge for mountain adventurers

Modern and innovative architecture adds an extra dimension to a trek amid Norway's fjords and fells. One example is Tungestølen in Luster, just below the Jostedal Glacier. When the mountain station was rebuilt after being ravaged by Storm Dagmar over Christmas 2011, the design was very different. »

TEXT Katarina Brandt PHOTO Jan M Lillebø

The newly built mountain station comprises several volumes positioned to form a unified enclosure. The façades are clad with heartwood pine, treated with iron sulphate.



Cross-section, dormitory.

The Norwegian Trekking Association (DNT) operates around 550 tourist cabins across the country. Tungestølen is owned by DNT's local branch Luster Turlag. This manned mountain station, which opens between June and October, is located deep in a valley, a few kilometres from the village of Veitastrom in the south-west of Norway, and can be reached by road. Just above it stretches the mighty Jostedal Glacier. Covering 487 square metres with ice up to 600 metres thick, this is the largest glacier in mainland Europe. Surrounded by a dramatic mountain landscape, Tungestølen is the perfect starting point for experienced hikers braving the glacier, but also for families who want to have shorter and not quite as challenging walks in the area.

Tungestølen has been in operation since 1910, initially serving as a meeting point for adventurers and a hub for various glacier expeditions. However, that long history was brought to an abrupt end at Christmas 2011, when Storm Dagmar powered across the mountains, turning Tungestølen into matchwood. In partnership with Luster Turlag and the village of Veitastrom, DNT quickly initiated a drive to rebuild Tungestølen. A competition was announced, and 67 national and international architectural practices submitted designs. Three finalists were selected to compete for the commission, which was won by Norwegian firm Snøhetta's entry »Virveltre«. The new Tungestølen opened in September 2019, but there are still a few buildings to complete before the project is fully finished.

»When we began sketching out the new Tungestølen, we thought a lot about how we could bring nature in. DNT's cabins are always in stunning locations, but many of them are built in a way that shuts nature out. We wanted to create something new here that reflects our own times, using novel technology that wasn't around when the old cabins were built,« says Anne Cecilie Haug, senior architect at Snøhetta.

The long tradition of building tourist cabins in Norway has always placed a great emphasis on both the location and its climate. The cabins were mainly constructed according to tried and tested concepts, many of them embracing a traditional design. The cabins now being built have a strong focus on innovative architecture, and the number of modern, architect-designed shelters has exploded. DNT wanted the architectural competition for the new Tungestølen to



The bunks are designed to give slightly more personal space than is usual in a mountain cabin - and to keep the connection with nature.

Architect **Anne Cecilie Haug**

» **WE THOUGHT A LOT ABOUT HOW WE COULD BRING NATURE IN.** «

demonstrate how to push the boundaries for tourist cabins in general. Eco-friendly solutions, exciting architecture and innovative industrial use of wood were some of the parameters that the competition entrants needed to observe.

With the tragic fate of the original mountain station fresh in their minds, Snøhetta chose to produce a new interpretation of Tungestølen. Just like the original station, the new one comprises several buildings of different sizes and with different functions, all wrapped closely around a central area to form a spatial unity.

»The space between the buildings has traditionally been extremely important for Tungestølen and DNT's other cabins. It's a social place, where visitors can share the joy of being out in nature,« says Anne Cecilie Haug.

Four of the nine planned buildings have so far been

completed. In addition to the main building, the dormitory, the service block and a small overnight cabin, another four modest cabins will be built, along with a winterproofed building that will enable visits all year round. The funding has been a whole separate project, managed by volunteers at Luster Turlag. There has been huge local engagement and interest, prompting several generous donations.

The new Tungestølen has been designed specifically for the location's unique topography and conditions. The initial work included wind studies on the site, which is raised on a slight hill where three valleys meet in a triangle. The wind sweeps down the valleys, before climbing up the hill and hitting the buildings.

»We began by looking closely at the weather, wind and ground conditions. Where does the sun rise and set, and what is the relationship between the mountain and the station? We also talked to staff working at other DNT sites to determine what functions a mountain station needs. The challenge was to find a balance between robustness and something that is easy to run just logistically,« says Anne Cecilie Haug.

The decision to use wood came early on, when the architects realised that they could benefit from all the incredible properties of the material, such as rapid assembly, structural stiffness, fire resistance classification, carbon footprint and finished interior surfaces.

The design is based around prefabricated, pentagonal glulam frames that are angled in different ways and combined with each other to give the buildings different shapes and functions. Screwed and glued elements with dimensions of 280 x 315 millimetres and 280 x 360 millimetres have generally been used.

»The five-sided glulam frames came about as a natural consequence of the main shape, where the five surfaces address different aspects of the surrounding environment - sky, ground, river, mountain and human,« says Anne Cecilie Haug.

The frames stand on concrete posts that are firmly anchored in the bedrock so the cabins can survive future storms. The floors, roofs and walls are made from stabilising sheets of CLT, which have been clad with heartwood pine and treated with iron sulphate. The benefit of heartwood is that the material contains natural preservatives, which make it a »



Ketil Jakobsen

The interior's restrained colour palette helps to accentuate the structure, while the exposed wood gives a cosy feel.

» hard-wearing façade material with a long service life, even in tough environments.

The beak-like shape of the cabins has a particular function, helping to calm down the strong winds that sweep up from the valley. Internally, the playful shape frames the surrounding landscape through generously proportioned panoramic windows. The light, untreated wooden surfaces throughout the interior showcase the structure and elevate the sense of warmth and safety. Unavoidable wear and tear will simply become part of the overall look. The only features that stand out colourwise are the dining room's black spindle-back chairs and the seat pads on the wall-mounted benches. This is a discreet colour palette that does not distract attention from the surrounding natural beauty that is a strong presence even indoors. The room layout is based on experience from other tourist cabins, where the communal spaces are prioritised.

Since **Tungestølen** is only open in the summer, the good insulating properties of the solid wood are sufficient. Allowing the wind to pass freely under the cabins provides natural ventilation of the timber.

»The idea is that the glulam frames can serve as a general module for DNT's future cabins, while varying the materials in the walls, roof and floor. One example is the popular Fuglemyrhytta just outside Oslo, which was opened in September 2018. This is a copy of the winterproofed cabin that will be built at Tungestølen,« says Anne Cecilie Haug.

Martin Lycksell is the structural engineer at tk Botnia who planned Tungestølen on behalf of the glulam and clt supplier Splitkon. For his part, the challenges revolved around the geometry of the buildings, where the loads needed to be channelled diagonally down to the ground.

»We are talking about quite extreme connection points and major loads for such small buildings. The geometry was beneficial in terms of the wind, but the slope of the cabin walls presented us with certain issues, particularly since the site is in a heavy snow zone. This means we needed to plan for almost a tonne per square metre on a flat roof that rests on one beam and also leans outwards. Inset plates at the joints were the main answer to keep everything together.

Tungestølen

LUSTER, NORWAY

ARCHITECT: Snøhetta.

CLIENT: DNT/Luster Turlag.

STRUCTURAL ENGINEER: tk Botnia.

COST: NOK 17,5 MILLION.

AREA: 470 square metres.

w| snohetta.com

These helped us to transfer the load to the ground and stabilise the buildings.«

The architecture is certainly prompting reactions, as inevitably happens when you step away from what is safe and traditional. Although the majority of people have been positive, heated emails, calls and letters have been received expressing mixed emotions about Tungestølen.

»I feel there is plenty of room for a variety of architecture in the mountains, and when we build new cabins, they can take on a form that is tailored to the needs and opportunities currently available. At Tungestølen, the mountain is permanent, while the architecture is fleeting and should reflect the time in which it was made,« asserts Anne Cecilie Haug.

For **Rune Dokken** and Mette Grøslund, who were responsible for running Tungestølen over the past season, the months have been really eye-opening. They are fascinated by the architecture, which has generously brought in the natural world and let the visitors enjoy new views every day. They have also noticed what the choice of wood and well-designed architecture can do for the work environment.

»When you work from morning to evening, seven days a week, you soon realise what it takes to create a good work environment. The rooms are light and airy and the solid timber is not just attractive – it functions in harmony with nature, buffering warmth and moisture and helping to establish a good indoor climate and good acoustics. We've also received praise for the smart bunks on four levels, which offer more space and privacy than you usually get in DNT's cabins. This has been much appreciated, particularly in these times of coronavirus,» concludes Rune Dokken.©

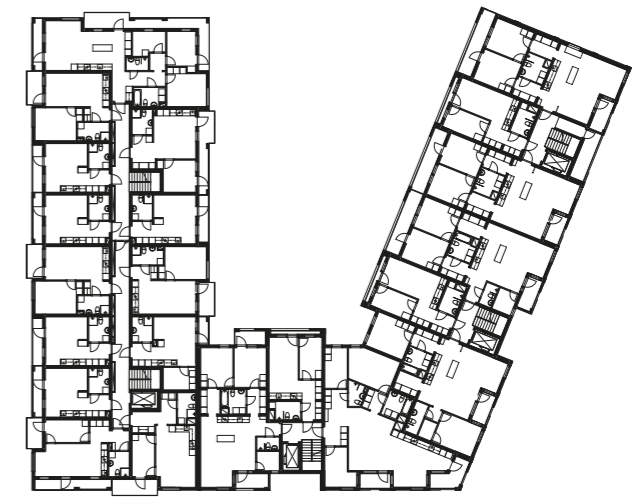


The playful shape of the cabins helps to slow the strong winds that sweep in from the valley. All the cabins embrace the five-sided cross-section, externally and in the interior fittings.





The eight-storey Botanikern building looks as if it was cut from a single block of wood, the feel is accentuated by the cladding in pine and indented balconies.



Plan

133 APARTMENTS WITH WOOD AT THEIR CORE AND A GENUINE CONNECTION TO SUSTAINABILITY AIM TO INCREASE BIODIVERSITY

TEXT Ellinor Thunberg PHOTO David Valldeby

The scent of wood is a subtle presence in the Botanikern housing development. The project appears to have sprung from the forest fully formed, as if sculpted from a block of wood, with a smooth façade that proudly stands eight storeys high. The Municipality of Uppsala decided early on to set the bar high for the new residential area of Rosendal and to encourage sustainable construction, preferably in wood. Axeloth Arkitekter and developer Genova Property Group took up the challenge and have created a building with 133 apartments of various sizes. Choosing wood – from structural frame to façade – provides a host of environmental advantages, not to mention benefits for us humans.

»There is a tactile scale to the grain. Wood as a construction material feels really healthy, and having a wooden frame ensures good acoustics in the apartments. There is something fundamentally human about knowing what materials you have close to your body. A genuine, quality wooden building constructed around a wooden frame contributes to health and well-being for those inside,« says Maria Axelsson, lead architect for the project at Axeloth Arkitekter.

Botanikern lives up to its name. Greenery is practically growing out of the building,

with dedicated green holes in the façade, plus planting on the shared roof terrace and in the courtyard. The wings have biotope green roofs, with their own beehives, and there are raised beds in the courtyard. Having a façade of heat-treated exterior cladding in pine and spruce was an obvious choice, inspired by the nearby pine groves. However, the shape of the volumes came from a desire to think outside of conventional parameters.

»We wanted to try and take the concept of the wooden building to a new level and not just use the standard design language. We therefore tried various methods such as stacked forms or functions, but we decided to take a block of wood as a metaphorical reference point and carve out the surface to shape the social layer – the zone where we render human activity visible, for example with the balconies,« adds Maria.

The balconies overlooking the street just have a discreet glass balustrade and alternate with the green features in the façade, creating a wonderful rhythm. The frame is a combination of glulam posts in spruce, working together with load-bearing walls and floors in CLT. The CLT elements have spruce in the outer layers and pine in the inner layers and»

» were supplied by Skonto Prefab. Building in wood was a desire and a goal for all parties, but it took some time to reach a decision.

»We chose to go for it, but there was a lot of back and forth when it came to the decision-making. It was a long process, and at times we wondered whether it was possible to accommodate the municipality's wishes. We knew that a wooden structural frame requires more planning, with full-scale tests for acoustics and fire safety, since there isn't the same amount of experience in wood construction as there is in the use of concrete,« explains Henrik Enström of Genova Property Group.

By refraining from building guest apartments and so on, enough leeway was created in the budget to invest in a mass timber frame. The technical details were a challenge – Maria Axelsson refers in particular to how they wrestled with the structure of the floor system in order to meet fire safety and acoustic requirements. The solution they chose was a raised floor, where the top layer is propped up from the floor slab to stop the transmission of any structure-borne sound. In the tallest section of the development – the one with eight storeys – the entrance level is made of concrete for fire safety reasons, on the recommendation of the fire safety consultant.

In an apartment block it is important, for the sense of community, to create spaces

where neighbours can engage with each other, and there are several of those here. The communal roof terrace has a particularly important function in this respect.

»When you go up to a roof terrace, you are already open to social interaction, which makes it easier to talk to the neighbours. A courtyard environment can be a place where people pass on the way to work or to get their bike, and in this context, you may not be inclined to stop for a chat. A roof terrace can therefore be a much more sociable space,« says Maria Axelsson.

The courtyard also has communal places to keep garden tools or fix your bike. All the apartments have large windows that connect the inside with the external environment, and the warm, natural Nordic style can also be seen in the materials and colours used. Working alongside Axeloth Arkitekter was Note Design Studio, with each party working on their part of the interior design.

»We actually had a picture of this as two different buildings. In the one, we put the smaller apartments aimed at a younger target group, and off the three other stairwells we put larger apartments focused on a varied, but to some extent older, target group,« says Maria Axelsson.

Serving the larger apartments, Axeloth Arkitekter has created a stairwell with ribbed cladding in hardwood, and inside the apartments they have embraced a restrained,

Botanikern

UPPSALA, SWEDEN

ARCHITECT: Axeloth arkitekter.
LANDSCAPE ARCHITECT: Fojab.
CLIENT: Genova Property Group.
STRUCTURAL ENGINEER: Konkret.
AREA: 11,500 square metres.
axeloth.se

elegant and timeless Nordic colour palette of white, grey and blue, with black accents. In the other part of the building – with the smaller apartments – Note Design Studio has worked with shades of sand, sage green, sky blue and terracotta.

»We always take people as our starting point, and we need colour. So we try to recreate a natural feel, inspired by nature and our urban environments. Everything doesn't always have to be white. Here we created a natural and harmonious palette that pops a little in the sky-blue kitchen,« states Daniel Heckscher, interior architect and partner at Note Design Studio.

To create a more welcoming feel, the walls, ceilings and mouldings have been painted the same colour, removing the sharp contrasts that occur with white mouldings and white ceilings against a coloured wall. When it came to connecting the interior to the wood cladding on the outside, the logical approach was to match up the colours and bring wood into the communal spaces.

»We usually want as much of a wooden structure as possible to remain exposed, but sometimes practical limitations can cause part of the vision to be lost. We have therefore chosen to complement and add to the feel of wood using different types of veneer in the communal spaces,« says Daniel Heckscher.

Both Maria Axelsson and Henrik Enström expect to be involved in more wood-based projects in the future. Axeloth Arkitekter is currently considering additional apartment blocks using wood construction techniques, and the real estate company is also exploring new opportunities for the future.

»Wood is a lovely material to work with, the lifting is easier for the workers on site and it absorbs sound better. It's a great environment to work in, and it's a wonderful feeling for people to know that they live in a wooden building. It would clearly be good to get more developers building in wood. What makes it expensive is the relative lack of off-the-shelf solutions. At the moment, we have to design and plan every little detail, but the more clients choose wood, the faster ready-made solutions will catch up with demand,« says Henrik Enström. ©



The colour palette in the smaller apartments is inspired by nature, they are painted in a uniform colour to create harmony.

Architect **Maria Axelsson**

» WHEN YOU GO UP TO A ROOF TERRACE, YOU ARE ALREADY OPEN TO SOCIAL INTERACTION. «



Biotype roofs, raised beds and beehives are all part of the drive for biodiversity, while social sustainability is another key aim. The roof terrace is one of many communal spaces.



Consistent material choices accentuate the project's Nordic style and the fact that this is a wooden building inside and out.



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Extreme loads a challenge for climate-smart wind power

Wind power can be made even more climate smart by using renewable construction materials and building taller towers. Research is currently under way to produce standardised knowledge of the load that high turbine towers in wood can take.

TEXT Pierre Landel & Anders Wickström, RISE PHOTO Modvion

Wind turbines allow us to take the kinetic energy in the air and convert it into green electricity. But wind power can be made even more eco-friendly by using taller towers to capture stronger and more consistent winds, and by using more renewable construction materials. Modvion's innovative modular turbine tower in wood kills two birds with one stone. The benefit of modules is that they are easier to prefabricate in a factory

and then transport to the construction site on public roads. The benefits of wood as a material include good mechanical properties, relatively low weight and low cost per unit of load-bearing capacity, not to mention eco-friendly production and processing.

In partnership with several other contributors (including Moelven, Metsä Wood, Teknos, Chalmers and RISE), Modvion has developed a concept to build tall wooden

1. LVL modules for the first prototype tower are bent and glued in a factory.
2. Assembly of a modular wooden tower.
3. Injecting adhesive into wooden slits around steel plate.

towers using tried and tested construction products: wood-based composite products made from laminated veneer lumber (LVL). Rigs are used to shape the modules into a conical tube (fig. 1). According to calculations, the LVL walls for a 100 metre tower need to be up to 400 millimetres thick, comprising over 130 layers of spruce veneer.

On the site where the turbine will be located (or in the factory for the prototype tower), four modules are assembled into one tubular section that can be up to 25 metres tall and over 10 metres in diameter. The sections are then stacked up on top of each other (fig. 2). Modvion joins these sections using inset steel plates glued into the wood walls. Inserting thin, perforated steel plates into slits creates an adhesive matrix with many small »glue studs« (fig. 3). This is a new connection technology that is strong and stiff, but requires precision implementation.

Over the course of several collaborative projects, the key challenges mentioned in the fact box have been examined one by one. Solutions have then been developed using a combination of calculations and tests. The relevant standard for wooden buildings »

Key criteria for tall towers in wood

» The tower needs to handle high loads.

With strong gusts of up to 60 m/s hitting large turbines that can weigh over 300 tons, the tower material is subject to tough requirements. The combined effects from extreme loads and instability phenomena must therefore be researched in order to minimise the risk of failures and buckling.

» The tower must have good dynamic properties.

The tower is like a tall post with a heavy mass on top that transfers dynamic loads from the rotating blades. The whole system thus becomes dynamic, and it is crucial to avoid resonance, for example if the lowest natural frequency coincides with the blade passing frequency.

» The tower must tolerate fatigue loads for its full service life.

Low-frequency wind fluctuations and high-frequency turbulence create dynamic loads. During the turbine's service life of 20-30 years, these variations generate considerable fatigue loads.

» The tower must have robust properties.

Wind turbines are designed to remain in operation for their whole service life. Historical wooden buildings and research demonstrate that wood can retain its properties for a long period, if it is protected from moisture. It is therefore vital to have effective external moisture-proofing and a regulated climate inside the tower to ensure the lifetime of the turbine.



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4. The prototype tower being lifted onto its slab on Björkö.

» (SS-EN 1995-1-1) lists a number of methods for verifying the strength and stiffness of the towers. Models for calculating the turbine loads and scenarios that affect the loads on the tower are described in the standards for wind turbines (e.g. IEC 61400-1). The Eurocode for wooden bridges also provides information on the fatigue strength of wood components exposed to a cyclical load of constant amplitude.

Calculations are not always enough, and so testing is required on different scales and in different climates, particularly for new products and applications. Great emphasis is

placed on verifying the fatigue properties of wood, which are not as well known as the properties of steel, for example. Old wooden bridges and church towers demonstrate that this material can handle cyclical loads over a long period, but the research has not yet led to standardised knowledge. Studies show that wood's fatigue strength depends not only on the number of cycles, but also on the duration of the total load. To optimise and verify the designs, a series of fatigue tests have therefore been performed in a laboratory to check the wood elements and glued joints at different stress levels. The 30 metre high prototype

(fig. 4) that was erected in spring 2020 is also fitted with moisture sensors and accelerometers that are monitored at all times.

The German company Timber Tower built a 100 metre tall, octagonal prototype in CLT that was put into operation almost 10 years ago. It has been a success in engineering terms, but not commercially, since the technical solution involving large internal beams resulted in high production costs. Since then, very little has happened.

Now Modvion is investing in developing the concept for towers of over 100 metres. ☺

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PROGRAM

The role of wood construction in EU policy going forward
Peter Handley, Head of Unit, DG GROW, European Commission

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Stefan Lindbäck, CEO, Lindbäck's Group

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Paul Brannen, Director of Public Affairs, CEI-Bois

KEY TOPICS

1. How to address the special role and importance of renewable materials in construction?
2. How to incentivize the utilization of wood as construction material?
3. How to assure contribution from wood construction in the New European Bauhaus initiative?



This event is hosted by Erik Bergqvist, Member of European Parliament (S&D)

Most welcome to register!

Anna Holmberg, Swedish Forest Industries
Lennart Ackzell, LRF Skogsägarna

»IT IS ABOUT SHOWING THE PATIENTS THAT THEY HAVE VALUE.«

The term »healing architecture« has arisen out of an understanding that the physical environment can affect the outcomes of medical treatments. Early research in environmental psychology focused largely on relationships with other people, physical distance and so on. Stefan Lundin, a partner at White Arkitekter who has held a doctoral studentship at Chalmers University of Technology since 2011, tells us more.

TEXT David Valldeby PHOTO Samuel Michaëlsson

What is meant by the term healing architecture?

That the physical environment can give a patient strength and help with healing and recovery, in both a physical and a mental sense. The actual mechanism at play seems to involve the environment's contribution to reducing stress levels. Researcher and environmental psychologist Roger Ulrich is well known for his 1984 study of gallstone patients. Some of the patients in the study had views of nature and the others looked out onto a brick wall. Those with the views of nature remained in hospital for a shorter time, complained less about the treatment and took less medication. An environment richly packed with natural features becomes part of the healing architecture. Research has advanced since then, but actual knowledge about the importance of the physical environment remains limited.

Nature is what many people emphasise. And I also believe that natural materials, ones that we have an evolutionary connection with, could have an impact on our well-being, although we can't say for sure that they have a healing effect. This is something I have started focusing on. I see myself as a researcher, in which case I need evidence to support my case. A lot of this is based on the psychiatric unit at Östra Hospital, which was completed in 2007. We incorporated a great deal of wood into the design and good results were achieved, including a clear reduction in the use of coercive measures on patients, but we have been unable to conclusively establish cause and effect.

Is it particularly difficult to find evidence?

It is hard to isolate a single factor. Do the rooms face in the same direction? Are the staff the same? And so on. There are potentially many different contributory factors. It is difficult to obtain results that prove the impact of an individual factor. In medicine, you can conduct more reliable double-blind studies, where only one parameter at a time is studied. Compared with medical research, these studies into the significance of the physical environment come a long way down the hierarchy of evidence.

Is it more difficult to verify the economic benefit of healing architecture than it is for medicine?

After Östra Hospital was completed, psychiatrist Lennart Bogren reported on the lower proportion of coercive measures in the anthology *Arkitektur som medicin* (Architecture as medicine). I gave it to Roger Ulrich at a conference and he referenced it directly in his presentation, saying »if the indicated effect of the physical environment had instead been achieved with a medicine, it would immediately have been a

global sensation«. Wanting more investment in these environments, as architects, is partly about being able to get some kind of return. All the figures relating to the financial gains, or rather cost savings, that can be achieved in these healthcare contexts are incredibly persuasive.

How do you handle the contrast between intuition and being evidence-based?

Part of the problem is the way we gain knowledge. A key aspect of the Östra Hospital project was that the managers of the psychiatric unit considered architecture a tool for improving care. We thus had a perfect opportunity to conduct in-depth discussions about this over the whole course of the project. What should the wards look like? Working with pairs of images – comparing with other settings such as hotels – we were able to clearly show how different solutions change the experience, and get to the emotional dimension of all this.

How have you taken this further?

Many of these ideas are about understanding the nature of the patient's experience in the psychiatric unit. The patients that are admitted are extremely ill. They need to be able to wake up in a comforting space, and gradually be able to function in a social context. It is about showing the patients that they have value. They should not see the environment as secured because they are potentially violent. Take away things that might be negative reminders of their illness.

How do you inject these ideas into other projects?

At White we have a knowledge network, a research and development department. With office projects, for example, we discuss the need to be able to withdraw, be surrounded by wood and have natural daylight and views. Although a lot of research has focused on healthcare environments, other areas have also received attention. The design, for example, of activity-based office environments is generating considerable debate, but it may be that here other questions take precedence. Questions such as where my place is in the hierarchy and whether I belong to a group. There are so many factors that come into play.

In hospital settings, we discuss how an environment can be enriched and how people can get out into nature. We try to include secure gardens so that patients undergoing compulsory treatment will feel less shut in. We are incorporating all these ideas about the importance of nature in the Queen Silvia Children's Hospital in Gothenburg. One of the features is an inner courtyard with trees and plenty of plants. You could say that we have only just begun nibbling at the edge of this broad and fascinating area. ☺

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A winning combination of typology and craftsmanship

A building that creates both dynamism and intimacy and encourages experimentation. The Swedish Wood Award 2020 goes to »Ateljé i Södersvik«, a studio in Roslagen that takes its natural place in local landscape.

TEXT Johanna Lundeberg FOTO Åke E:son Lindman

The winner of the Swedish Wood Award 2020 was finally announced at the Wood Awards Gala, an event that was streamed online at the beginning of December. The 12 finalists all presented innovative designs that in various ways exemplify the possibilities of wood as a construction material now and in the future. Over the course of two long years, the presence and impact of the wood was key to the jury's deliberations, according to its chairperson Carmen Izquierdo:

»The discussions revolved around the key role that wood plays in the spaces and the spatial experiences that the different buildings offer. In spaces both inside and out, public and intimate, the nominated projects demonstrate superb architectural quality.«

The jury eventually agreed that the prestigious architectural prize should go to a studio in Södersvik on the Rådmanö peninsula in the municipality of Norrtälje – a

building that, with its simple typology and authentic craftsmanship, settles effortlessly into Roslagen's cultural landscape, while also prompting thoughts about design and different areas of use.

»A great thing about the Swedish Wood Award is that it picks up on new trends. Among the entries for this year's award, many display new interpretations of structural features and approaches from the rural tradition. I think Ateljén i Södersvik is a prime example of this,« says Alexander Nyberg, architect at Swedish Wood and the person responsible for the Swedish Wood Award.

The studio is reminiscent of a modern barn, with large shutters, tall steel doors on one of the gable ends and an open loft. Completed in 2018, the building is a combination of workspace and residence, provoking many thoughts about how creativity develops when you live and work in the same space, and how that space needs to be designed to establish both dynamism and a sense of comfort.

»The Swedish Wood Award 2020 is proof that we have done something others can enjoy. It's a fantastic honour,« says Anders Johansson, who is both architect and client.

»One of the challenges was the spatial element of the building. It has a ceiling height of 6.25 metres and long walls with no »

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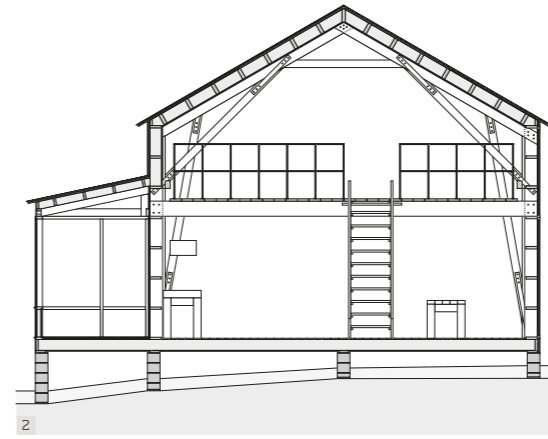
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Material: ThermoWood med vattenfast brandimpregnering SP Fire 105 med och utan BT Infärgning, Moelven
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» partitions. The high wind loads that we can get here are dealt with using diagonal braces that are visible internally, and this provides a kind of unity between the local conditions and the architectural response.«

Apart from a separate bathroom area, the open studio takes up the entire floorspace, with a sleeping loft above. Space, light and acoustics are therefore important factors. A line of glazing under the eaves facing north, a generous window with built-in storage to the east and high, south-facing vertical openings create a dynamic light that is constantly changing. The studio is open all the way to the ridge beam and the sturdy, roughly hewn roof trusses are exposed, giving the room a cohesive look. The flooring is a knotty untreated pine, and the light boards provide a harmonious contrast with the rustic structure of the walls.

»Ateljé i Södersvik has something joyous and unforced about it – it feels like the architects were having fun and it gives the building a playful and liberating feel. The wood is a practical and warm cocoon for everyday living rather than a finely polished ornament that mustn't be touched,« says Alexander Nyberg.



The frame and cladding are made from sawn spruce timber, with an untreated surface that will be left to age naturally. As befits an award recognising wooden architecture, the material makes its presence felt. Wood is used throughout, on both a large and small scale, from frame to furniture. The simple design language is complemented with details such as exposed steel fixings with through bolts, a wood-burning stove and wooden furniture in various dimensions, giving the space a solid character. The simplicity is also reflected in the way the structure was erected:

»The frame is made from thick, sawn timbers. To lift them with a crane, we would have needed to hire the crane for several days, so to keep the cost down we put together much of the frame using winches,« recalls

1. Ateljén i Södersvik merges effortlessly into Roslagen's cultural landscape with its simple typology and honest craftsmanship.
2. Cross-section.
3. The frame and window niches form a harmonious whole.
4. Proud winners Anders Johansson, Anja Johansson Thedenius and Ruben Albertsson, flanked by Mathias Fridholm and Li Pamp.

Ateljé i Södersvik
 RÅDMANSÖ, SWEDEN
 ARCHITECT: Södersvik arkitekturproduktion.
 CLIENTS: Anders Johansson and Anja Johansson Thedenius.
 STRUCTURAL ENGINEER: Tomas Gustavsson.
 BUILDING CONTRACTOR: Albertssons snickeri.
 CONSTRUCTION COST: SEK 4,5 million.
 YEAR BUILT: 2018.
 AREA: 216 square metres.
 www.arkitekturproduktion.se

Ruben Andreasson, who built the frame and other parts.

The Wood Award jury was also won over by the way the large building inserts itself so naturally into the landscape. The oversized industrial doors on the west end allow the space to be opened up to its surroundings. On the other hand, the windows on the sides can be covered with the beautifully crafted shutters, which merge in with the façade to form an integral part of the design.

»This is a building that can be reconfigured, but also invites movement and play. The relationship between outside and in is a meaningful one, and when we open the large doors, we invite nature into our workspace and home,« says Anja Thedenius Johansson, the other architect and client.

Carmen Izquierdo calls the building authentic and inspiring:
 »Where does the essence of architecture lie, if not in spatial poetry through materials and light? The studio is a study in exactly that. A single space in wood, infinite space for ideas. Its simplicity creates a beautiful and multifaceted place to live and work in.« ©

Träpriset
 The Swedish Wood Award recognises good architecture in wood and has been presented 13 times since 1967. It is now awarded every four years. The Swedish Wood Award 2020 received a total of 130 entries. The jury visited over 40 of these before drawing up a shortlist of 12 nominees. The 2020 jury comprised Tomas Alsmarker, Petra Gipp, Carmen Izquierdo (chairperson), Stefan Nyberg and Natasha Racki.
 www.trapriset.se

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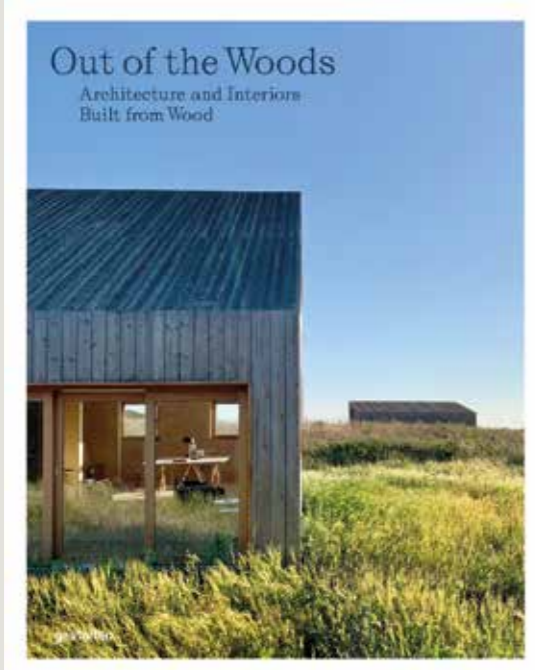
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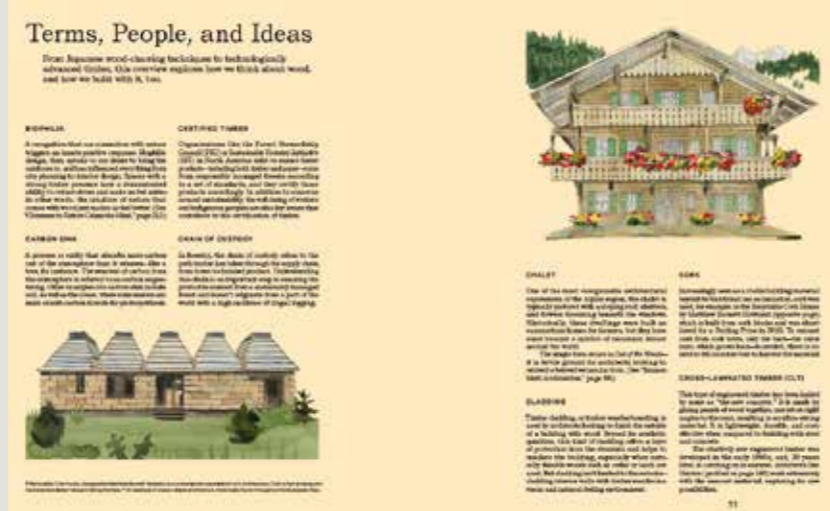




Out of the Woods – Architecture and Interiors Built from Wood
 Robert Klanten & Elli Stuhler
 Gestalten (eng)
 978-3-89955-859-3

A coffee table feels like the natural home for the substantive *Out of the Woods – Architecture and Interiors Built from Wood*, which presents over 30 different projects in wood, including Swedish Wood Award nominee House for Mother by Förstberg Ling. However, there is so much more to the book. The opening section "From Hut to High-Rise" discusses wood's role as the hot new material, as well as providing a brief summary of what the editor sees as key terminology for wooden buildings.

Where the book really digs deep and raises itself from a coffee table staple to a great read is in the sections about the five leading studios, Branch Studio, Innauer-Matt, Oslotre, La Shed and Alexis Dornier, plus the five sections dealing with everything from the flexibility of wooden structures to how tall buildings in wood open up



new opportunities with the material. The sections are interesting because, like in "Revisiting Timber Traditions", they don't try to include everything, focusing instead on a few traditional concepts from different parts of the world and exploring what they mean for contemporary architecture.

As the subtitle suggests, there is a strong focus on residential environments, primarily houses but also apartment blocks. The projects display many varied typologies, but in each case

the exterior and the interior unite to form a greater whole. Craftsmanship and innovative ideas run through all the projects.

Perhaps the only things missing are a map to provide an overview of where the projects are located and, in particular, detailed information about specific materials and design solutions. There are not many drawings, which would have been useful in painting a more complete picture of the projects.

[w| gestalten.com/products/out-of-the-woods](http://w|gestalten.com/products/out-of-the-woods)

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[w| for more info contact patrice.godonou@svensktra.se](mailto:patrice.godonou@svensktra.se)



5 March 2021 | Trä! issue 1
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