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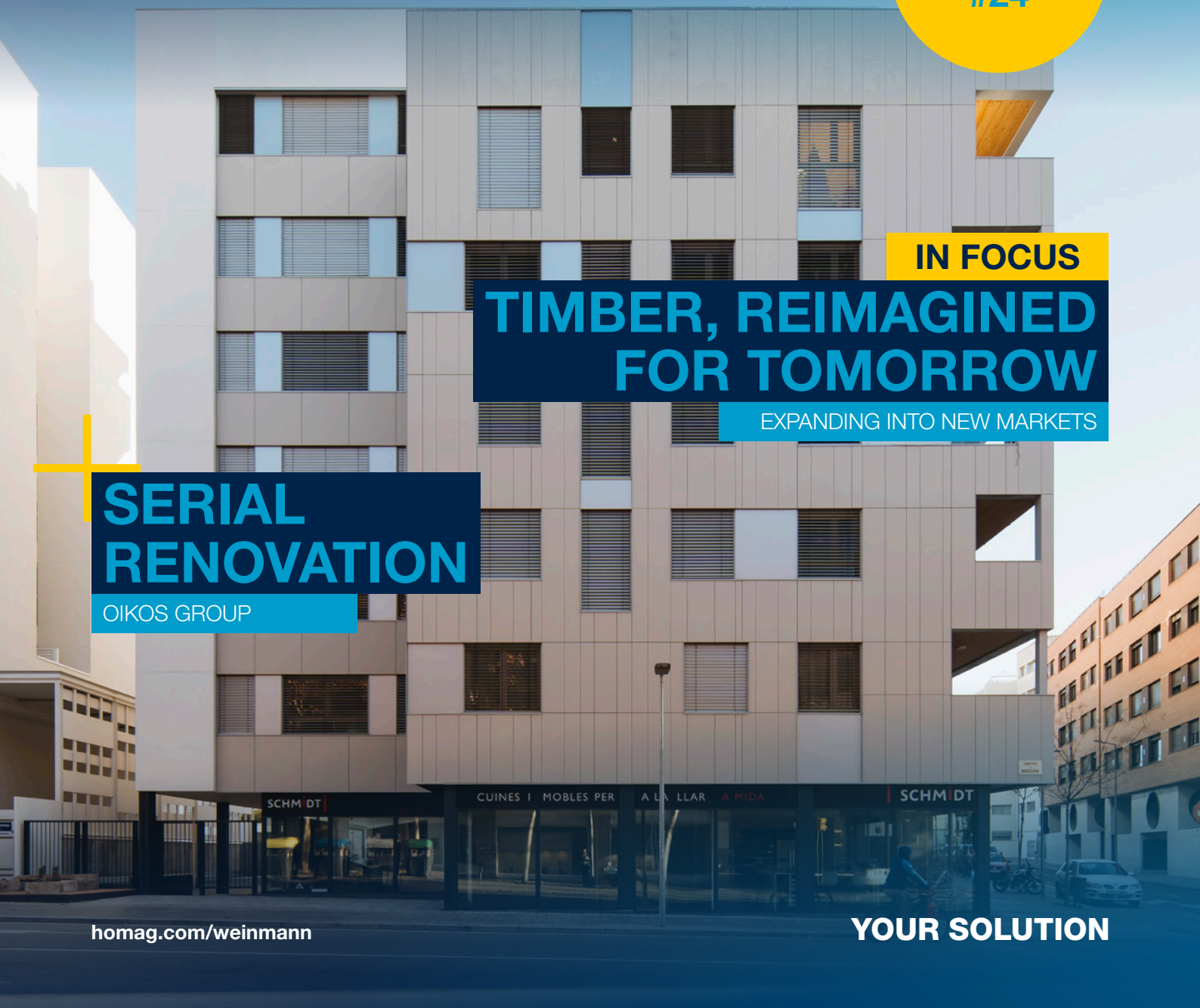
OUR CUSTOMER MAGAZINE FOR THE TIMBER CONSTRUCTION INDUSTRY

2025 ISSUE #24



IN FOCUS

TIMBER, REIMAGINED FOR TOMORROW

EXPANDING INTO NEW MARKETS

+ SERIAL RENOVATION

OIKOS GROUP

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Building living spaces.

SAVE THE DATES

We look forward to meeting you at the following trade shows and events:

July 2025
Experience day at Zimmerei Wissel GmbH
Mömbris
July 11, 2025

September 2025
EASTWOOD
Leipzig
September 18, 2025 – September 19, 2025
Landesholzbautag, Holzbau Baden-Württemberg [Baden-Württemberg State Timber Construction Day]
Reutlingen
September 19, 2025 – September 20, 2025

October 2025
BCMC
Omaha, Nebraska
September 29, 2025 – October 3, 2025
Bayrischer Zimmerer- und Holzbaugewerbetag [Bavarian Carpenters' and Timber Construction Trade Day]
Würzburg
October 24, 2025 – October 25, 2025

February 2026
DACH+HOLZ International
Cologne
February 24, 2026 – February 27, 2026

November 2025
WEINMANN Treff
St. Johann-Lonsingen
November 12, 2025 – November 13, 2025

Further information and registration for the event can be found here:

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CSO WEINMANN
Eduard Schiessl
WEINMANN Holzbausystemtechnik GmbH

Dear Timber Construction Community,

After 16 proud years with the HOMAG Group, I am pleased to share that I have taken on the role of Chief Sales Officer (CSO) at WEINMANN. As HOMAG and WEINMANN, we are excited to present this year's customer magazine once again in 2025. Whether from Germany, the USA or South Korea, you can look forward to fascinating insights from around the globe!

More and more people see timber construction as part of the solution for a sustainable future—especially as a modern, environmentally friendly and future-proof building method. The HOMAG and WEINMANN team has been pursuing this vision for nearly 40 years, and with that comes a wealth of experience in timber construction:

- From traditional beam processing to highly automated element production
- From multifunction bridges to robotics solutions
- From intelligent software developed with our partner granIT to comprehensive training programs at the WEINMANN Academy
- From cutting solutions with saws and nesting to automated cells with storage and robotics
- From solid wood processing with solutions from SYSTEM TM to the production of glulam (BSH) and cross-laminated timber (CLT/BSP) using pressing technologies from KALLESOE

This wide-ranging expertise is rounded off by the SCHULER Consulting portfolio and our global service network.

We are continually developing WEINMANN solutions to ensure that you are fully prepared for the challenges of tomorrow. You can look forward to innovations and new developments in the field of beam processing, and discover the flexible expansion options available in element production. This year, we're excited to present our product highlights—and much more—at LIGNA and the WEINMANN Treff, and we look forward to welcoming you at our trade shows and events.

I look forward to an inspiring and successful business year with you and hope this issue of performance provides you with fresh ideas and valuable insights!

Regards,
Eduard Schiessl

Worldwide living.
We're close to you.

With a global market share of over 30% and around 7,000 employees, we develop solutions for woodworking worldwide. At 13 locations, we produce machines for furniture production and timber construction. With an expert network, we operate in over 100 countries and are your strong local partner.

As a solution provider, HOMAG combines a wealth of experience in timber house construction (WEINMANN), consulting at eye level (SCHULER Consulting) and the use of high-performance software (granIT). With the bundled expertise of the SYSTEM TM and KALLESOE brands, we also consistently round off our range in the solid wood sector.

Extensive experience:
>400 years
in the industry

A strong team:
~7.000
employees worldwide

Great trust:
>100.000
customers worldwide

Innovative strength:
>1.300
patents

Worldwide production:
13 factories
from global to local

Innovative future:
>500
engineers worldwide

Market leader:
~30 %
world market share

Attractive solutions:
1,6 billion €
turnover worldwide

Expertise near you:
>80
locations worldwide,
through exclusive partners
or HOMAG's own sales
and service companies

Oikos Group
Serial renovation

IN FOCUS

+ INTERVIEW

Easy to plan, eco-friendly, and cost-effective: Serial renovation presents a major opportunity for timber construction.

Markus Farnung
Head of the PMO Oikos Group

Germany has faced a persistent issue for years when it comes to energy-efficient housing: a large proportion of the country's buildings are in urgent need of renovation and contribute significantly to national CO_2 emissions. Despite the well-known benefits of energy-efficient renovations—such as reduced energy consumption and lower heating costs—these projects often come with considerable labor and financial demands. The principle of serial renovation presents an opportunity to accelerate the renovation process and sustainably improve the energy performance of existing buildings. In our expert interview with Markus Farnung from the Oikos Group, we discussed the advantages of this approach compared to conventional renovation methods, and how this field can contribute to achieving climate targets.

Mr. Farnung, what exactly is serial renovation, and what role does it currently play in timber construction?

It is now widely recognized that energy-efficient renovations can lead to significant CO_2 savings, particularly in older buildings. However, progress on renovation initiatives in Germany remains slow: the current renovation rate is below one percent, while the energy transition would require a rate of up to four percent. The Oikos Group has recognized this challenge and is currently involved in developing a method that aims to renovate aging buildings quickly and at scale using prefabricated timber-frame wall elements produced in the factory. This approach, known as serial renovation, is designed to support a step-by-step increase in the renovation rate. The foundation for this is the internationally recognized Dutch Energiesprong method. It involves constructing an innovative, highly insulated envelope is around the existing building and upgrading it to at least Efficiency House Standard 55 (EH55), with a maximum energy consumption of 55 kWh/m². Timber construction is particularly well suited to this principle, as wood stores CO_2 and offers excellent insulating properties. In addition, timber construction companies have years of experience in serial building, which makes many of their production methods ideal for serial renovation as well.

Façade element for serial renovation in prefabrication

What are the advantages of serial renovation compared to conventional methods—both economically and environmentally?

The principle of serial renovation offers numerous economic advantages. One of the most important is the increase in renovation speed, which is closely linked to the scalability of the approach when applied to similar types of buildings. Ideally, a pilot project is implemented first, which then serves as a benchmark for similar buildings. This allows for meaningful comparisons and helps to identify clear benefits. Serial renovation also stands out from an environmental perspective. The cradle-to-cradle concept is gaining importance, and serial renovation has the potential to turn buildings into material banks of the future, where resources are stored directly within the structure.

Why has the Oikos Group chosen to specialize in serial renovation, among other areas?

Our factories specialize in the efficient serial manufacturing of customized timber houses. Producing in batch size 1

Oikos Group GmbH:

As one of the largest prefabricated house manufacturers in Europe, the Oikos Group combines the Bien-Zenker, Hanse Haus and Living Haus brands under one roof. The Oikos Group covers all stages of prefabricated house production, from shell construction to turnkey homes. Its core markets include Germany, Austria, Switzerland, Luxembourg and the United Kingdom.

The company stands for ecological, economic and social performance, placing a strong focus on sustainable innovation and responsibility.

Oikos is backed by owner Goldman Sachs Asset Management, with its strategic vision of investing in this growth market and combining the expertise of all three brands.

*Source: Oikos Group

is also essential when it comes to serial renovation. This gives us an excellent starting position for the efficient production of renovation wall elements.

Which new technologies or materials play a key role in serial renovation?

Digital communication and documentation are crucial during the planning process to keep all team members up to date. At the same time, the choice of materials—particularly for the visible façade—plays a vital role, as it must meet the expectations of various stakeholders. Building owners prioritize low maintenance costs, society expects a high-quality visual appearance, planners aim for simple coordination and compliance with standards, and producers and installation teams require efficient production and assembly processes. Adapting the planning to meet all these requirements is always a challenge—and at the same time, it plays a key role in the success of serial renovation.

What challenges are involved in implementing serial renovation concepts, and how can they be overcome?

There are certainly a number of challenges—but what's interesting is how categorizing them often makes them easier to manage. In projects like these, communication is frequently a key challenge, as many different partners are involved and need to be coordinated effectively. Collaboration tools can offer valuable support in this area. Often, the existing building itself presents a challenge: various measurements and scans must first be taken in order to carry out further analyses. These are often essential for structural calculations and can sometimes delay the overall process.

How is demand for serial renovation evolving, and which building types or regions stand to benefit the most?

In general, interest among property owners and municipalities in launching pilot projects has grown. Many now recognize the benefits and have begun analyzing their building portfolios to identify candidates for serial renovation. Some regions also offer incentives for carbon storage in building materials, which naturally supports the use of timber in serial renovation. The renovation of non-residential buildings, such as schools or daycare centers, is becoming increasingly appealing as well. Serial renovation makes it possible to carry out fast, energy-efficient upgrades during school holidays, minimizing disruption to operations.

Outlook for the future: what is your vision for serial renovation over the next five to ten years? Which innovations or developments will shape the market most?

This question is a bit like looking into a crystal ball. In general, I believe the greatest leverage lies in the planning processes. If these processes are streamlined and a certain level of process reliability is established, serial renovation can become a valuable complement to traditional renovation and help accelerate the energy transition.
Especially as pressure for faster implementation increases, serial renovation will likely see growing demand. It's also encouraging that more and more solution providers are entering this market segment, which is helping to drive innovation. Institutions such as the German Energy Agency (dena) are supporting this transformation and are actively promoting standardization through workshops and other initiatives.
I look to the future of serial renovation with confidence and firmly believe that we as timber builders will play one of—if not the—most important roles in shaping this field.

Want to find out more?
Read another expert article on serial renovation here:

Strobel
Automation in woodworking shops

CUSTOMER REPORT

All objectives achieved

Johannes (l.) and Arthur (r.) Strobel
Strobel GmbH

Strobel GmbH, based in Ebenweiler in Swabia, has optimized component precision, improved workplace ergonomics and reduced production times by around 30 percent through the automation of its manufacturing processes.

If you were to categorize timber construction into eras, now would probably be the age of the universalists. This is because the decline in the number of orders in detached house construction, commercial construction and residential construction has made one thing particularly clear — it is advantageous to have a broad base. Because then it is easy to offset losses in one business area by moving to another.

This is also the situation at Strobel GmbH, which is located in Ebenweiler, a village in the district of Ravensburg, Germany. Timber house construction, which company founder Arthur Strobel began pursuing in the late 1980s, also experienced significant downturns in this region. However, Arthur Strobel continued the classic carpentry business in the company.

Over the years, many new business areas were added—including multi-story commercial and residential buildings, the construction of daycare centers and schools, renovations, vertical extensions and even modular building projects. All of these are becoming turnkey offerings, even if extension levels are offered according to individual customer requirements. And in Ebenweiler, around 45 employees continue to build carports, summer houses and roof trusses — including planning, modern production and sheet metal work.

Economically strong region

As Strobel GmbH is located in a strong economic region with large pharmaceutical and technology companies, the new business areas were added in the wake of increased demand for the company. To date, little has changed in this situation, even though there have been some sideways movement in the business areas.

When the number of single-family home projects dropped from 30–35 to around 10 per year, multi-story construction became a way to offset the losses. Together with renovations and vertical extensions, which continue to see strong demand in the region, Strobel GmbH remains fully booked—all within a relatively small delivery radius of 40–50 kilometers and without any advertising. Even today, nearly 100 percent of customers come through word of mouth.

"Small" bridge with saw

In 2016, Johannes Strobel joined his father Arthur on the management board. In view of the good market situation, father and son made a first attempt in 2019 to automate the production of wood frame elements: "At that time, however, we would have had to invest in a large multifunction bridge because a saw was important to us for processing fiberboards. That put us off."

In 2022, the situation changed fundamentally with the introduction of the WEINMANN WALLTEQ M-300. This multifunction bridge is also an entry-level solution for woodworking shops, requiring only a small amount of space. It not only offers a trimming function, but is also equipped with a saw in addition to the usual bracket, nailing and marking units. For Johannes Strobel, who wanted to invest in automated production primarily because of the consistently high level of precision, this was "an affordable solution tailored to suit companies of our size."

Precision and ergonomics

In addition to precision, Johannes Strobel was also focused on ergonomics: "Making work easier for employees was very important to me. “They no longer

Production at Strobel GmbH

had to kneel on the elements or place the panels manually."
A positive side effect: older employees who no longer wish to work on construction sites can now be reassigned to the production hall, allowing them to remain with the company longer. Given the strained staffing situation in the region, this is a clear advantage, all the more so because automation reduces the number of employees required in production, enabling them to be deployed in other areas.
At the end of 2022, Johannes Strobel reached out again to the responsible WEINMANN representative: “He’s from the region and has known our company for years, so there was little to clarify when it came to planning." In view of the wide product portfolio, something that was important to Strobel was being able to also process roof and ceiling elements on the new production line.
By the end of their discussions, the company had placed an order for a WALLTEQ M-300 with a worktable. Since Strobel already owned a WEINMANN assembly table, this created a compact system setup, which the master carpenter supplemented with two panel positioners.
The only modification at the request of the carpentry team: the elements are currently not flipped on a turning table, but instead via overhead crane. “But that’s perfectly sufficient for our needs. We first thought of having an additional turning table, but then decided on a somewhat slower pace of development. This makes sense to me in the case of such restructuring, because the processes in the company must also be adapted to the new technology and optimized. And if we want to expand the system at a later date, this is no problem thanks to the modular design that come as standard at WEINMANN."

Seamless change

The short delivery timeline posed a real challenge for the carpentry firm: “The new equipment was scheduled to arrive in about three months, and during that time we had to not only expand our hall, but also prepare our work preparation team for the new tasks.”
These tasks were mastered with flying colors: from Johannes Strobel’s perspective, the hall expansion—including the building application, component production and installation—was “fairly straightforward.” One major benefit for the company: the new space created a clear separation between production and other operational areas, allowing for more efficient workflows in every zone.
The carpenter is also highly satisfied with the workflows in work preparation. “When they first heard the delivery date, the two master carpenters in that department raised their eyebrows a bit,” Strobel recalls. “But they fully supported the restructuring, were highly motivated and handled everything exceptionally well.”
The team started with multi-day training at SEMA, then moved on to creating a custom in-house component catalog—a task that’s still ongoing: “It’s a lot of work and takes time, especially because even once the catalog is completed, it needs regular updates and maintenance.” In the meantime, the company has added a third person to the work preparation team, and Strobel feels confident: “It seems to be the right setup now.”
The short-term goal was already achieved with just two employees: the commissioning of the new technology in spring 2024 went smoothly, with no hiccups, downtime or production disruptions. "We also owe this to the WEINMANN employees who supported us at the start of production," remembers Johannes Strobel: "They were very competent, in terms of both the CAD software and the work on the machine. For several days, they worked out solutions with our employees in key areas, and that was really great."

Thirty percent faster

And, thanks to an unlikely turn of events, it was also extremely informa-

tive. At that point in time, Strobel GmbH was producing components for a large-scale project: Two of the three identical multi-story buildings had already been produced and assembled manually, while the third ran completely on the new production line. This allowed a direct comparison to be made. Although the employees were working independently with the new technology after around just five days of training, they succeeded in reducing the production time from six to four weeks for this first project.

"It all happened extremely quicky and we saved an amazing amount of time in production. We reached the 30 percent increase stated by WEINMANN from the offset, and it's probably even higher now, because we are even better acquainted with the work processes."

All in all, this has resulted in a significant increase in capacity—and that's something the team in Ebenweiler is more than happy to take advantage of, especially when wall, ceiling and roof elements need to be delivered promptly for large-scale projects.

However, higher output wasn't the primary goal of Johannes Strobel's investment. Instead, he's using much of the added capacity to increase the level of prefabrication. As a result, the overall volume hasn't increased proportionally: "We're definitely producing more today, and the machine is running at a good capacity, but now we're also prefabricating components that were too complex to handle during our manual production days." An example? Complicated roof geometries, which are now realized with roof elements, whereas they were previously assembled on-site, beam by beam.

Positive verdict

Today, all components leave the Ebenweiler facility fully prefabricated and arrive on-site ready for installation. The feedback from the assembly teams has been equally telling: "Even with manual production, we were already very precise—but now everything fits even better on site. Roof elements slide to the correct position as if by themselves, reworking is practically no longer an issue. And there's one shared opinion when it comes to the new technology: we should have introduced it much earlier."

That sentiment is echoed by the production team, which now operates with just four to five employees in one-shift operation. "There's a lot of praise for the new, back- and knee-friendly working environment," says Johannes Strobel. "One employee recently told me that since the transition, he has been feeling less tired in the evenings after work. "That gives me hope that both he and the others will want to keep working here, and stay longer with us."

The restructuring has proven to be a success across the board: Manufacturing is now carried out with even higher precision. The issue of staffing shortages has been alleviated, and production times have been drastically reduced. Customers are equally enthusiastic about the new technology, welcoming the added safety on construction sites that comes with industrial-level accuracy and the automatic documentation of every process step. However, the restructuring is not advertised, as almost all customers are still obtained through recommendations. And there is much to suggest that this will remain so for a long time to come.

WEINMANN

Our product highlights in focus

+ PRODUCT NEWS

What's new in element production

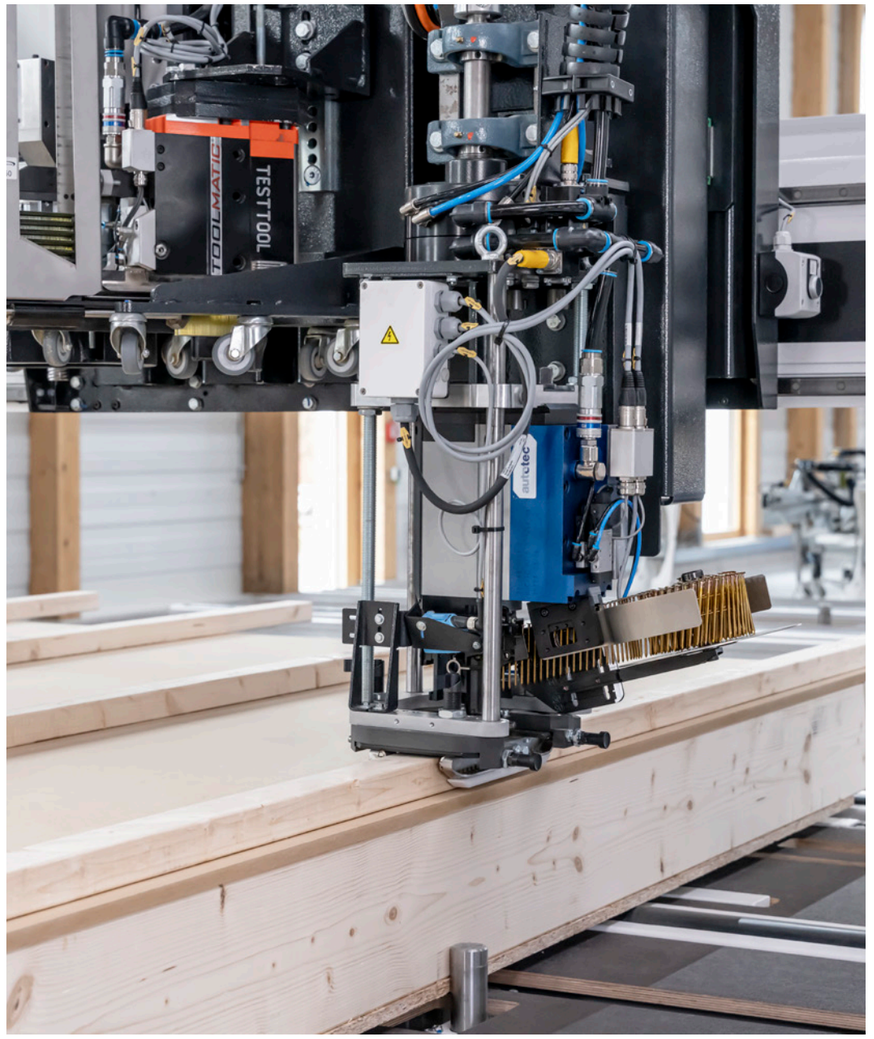
Dr. Stefan Bockel
Head of Product Management
WEINMANN
Holzbausystemtechnik GmbH

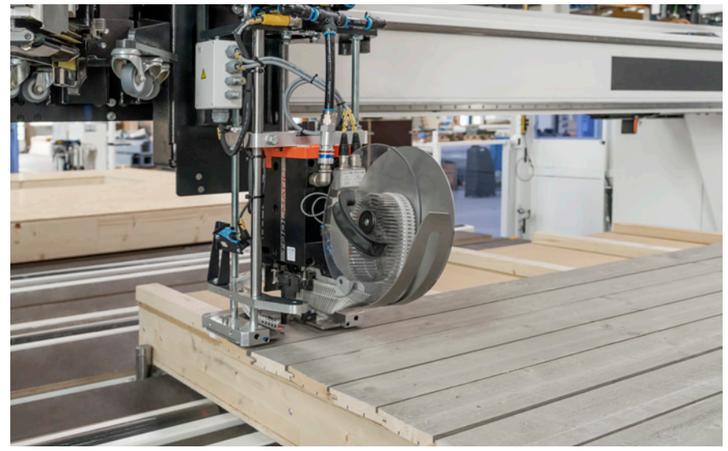
WALLTEQ—maximum production efficiency through advanced prefabrication and automation

NEW! The WALLTEQ series can be equipped with optional units for batten installation and timber façade mounting. A tool change system on the multifunction bridge allows fastening units to be interchanged as needed and stored in a space-saving manner in the **fastenerSwitch**.

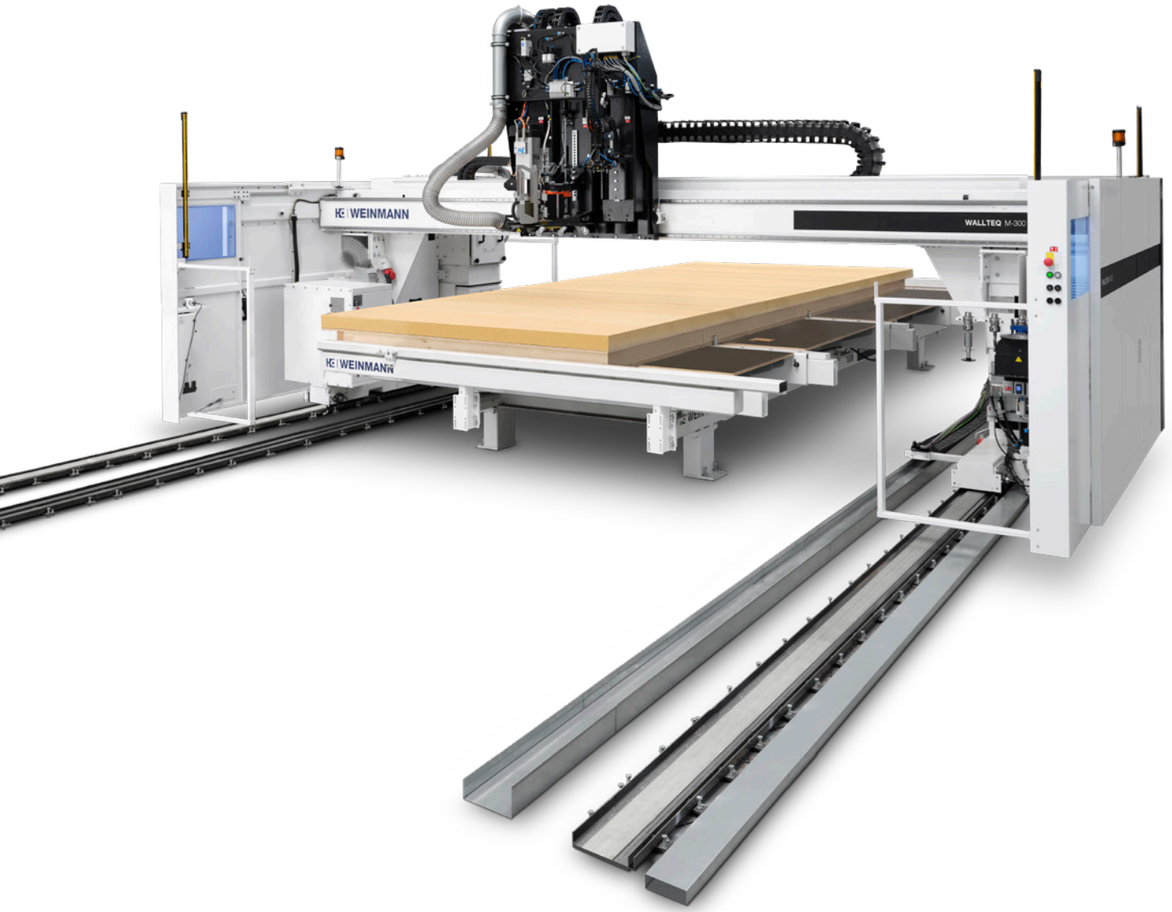
With the **batten shoe**, companies can significantly increase the prefabrication of roof elements. This not only improves ergonomics, but also reduces the need for time-consuming and demanding tasks at height on the construction site. The batten shoe enables semi-automated fastening of battens directly onto the element, with battens attached either crosswise or longitudinally.
The **façade shoe** offers a solution for the semi-automated fastening and formatting of timber façades.
These optional units are also ideal for serial renovation, helping to reduce manual tasks during production as well as the effort required for quality control and potential rework, particularly in multi-story timber construction.
When combined with the WALLTEQ M-300, these options form an optimal package for operations in woodworking shops.
For industrial-scale needs, the WALLTEQ M-500 offers a compelling solution.

Find out more about the batten shoe in the video!





See the façade shoe in action!



New wupWorks 5 operating software

Starting with the WALLTEQ M-300, we now offer our next-generation, user-friendly software wupWorks 5, featuring a modern interface, intuitive user guidance and a range of new features—including component measurement and browser-based operation. Our focus with the new wupWorks 5 is on providing maximum support for the operator. In addition to guiding users through current tasks, the system also enables planning and provisioning of new jobs. This creates an ideal link between work preparation and manual support during operations.

What to expect in wupWorks 5

Master of beam processing—BEAMTEQ B-660

In response to increasing demands for processing flexibility in beam processing, we have given our BEAMTEQ B-660 a technical overhaul. Equipped with the latest control system, we have further optimized numerous technical features. These include quick tool changes in the underfloor unit using an HSK chuck, improved beam separation, detection of angled markings and enhanced protection of the units against dust and chips. For customers with high expectations regarding quality and performance, and limited space, the BEAMTEQ B-660 offers the ideal solution.

Beam processing technology you'll love!

CM Byg
Timber construction in Denmark

CUSTOMER REPORT

Paving the way to climate neutrality

Denmark has been setting itself ambitious climate targets for years: greenhouse gas emissions are to be reduced by 70% by 2030, with climate neutrality to be achieved by 2050. The construction industry—subject to strict energy efficiency regulations—is seen as a key player in this transition. Timber construction in particular, which holds great potential in the country, is gaining increasing importance. This is exemplified by pioneer CM Byg.

With its ambitious environmental policy plans, Denmark is once again tightening climate requirements for the construction industry starting in 2025. As of July 1st, new buildings must comply with CO_2e limits, which have been reduced to an average of 7.1 kg CO_2e/m²/year. These requirements will affect every aspect of the construction process and will also apply to a broader range of building types than before. For example, the regulations will now also cover unheated buildings above a certain size, as well as extensions to residential and office buildings. At the same time, the lowered CO_2e threshold makes it more important than ever to use sustainable materials and methods. Notably, the construction process itself—including transport, material waste and on-site energy consumption—is now factored into the building's overall climate impact.

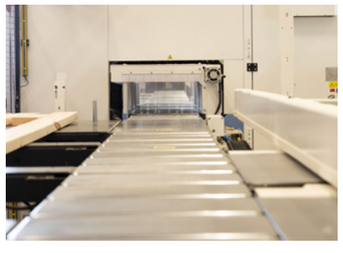
A construction industry rethinking its approach

Unlike other Scandinavian countries such as Norway or Sweden, where timber construction has traditionally accounted for more than 90 percent of buildings, Denmark's share has historically remained in the single digits. This has been the case in both the private and public sectors. For centuries, clinker brick construction dominated the country's building tradition, and this influence continues to shape today's practices. In recent years, public sector projects have also increasingly relied on concrete construction. Both methods are known for their high energy consumption.

In recent years, political initiatives have already forced construction companies to increasingly question the use of CO_2-intensive building materials. The requirement for developers of hospitals, schools, kindergartens, and administrative buildings to present a full carbon footprint of all materials used has prompted parts of Denmark's concrete industry to reconsider their approach. Suddenly, due to their poor environmental footprint, many of their traditional business models were no longer viable for the future.

A surge in timber construction forecasted

Several companies that had previously specialized exclusively in concrete elements are now shifting toward hybrid construction methods. While they continue to use concrete for building cores—such as floors, stairwells and elevator shafts—they are now enclosing structures with prefabricated timber elements. The result is buildings that, visually, appear to be made of wood. "I'm convinced that this hybrid construction method will become standard in Denmark, especially for public buildings," emphasizes Tobias Knölker, Senior Sales Manager at WEINMANN. This trend is reflected in the gradually increasing share of timber construction. "At the moment, the figure stands at 7 percent." Changes to Danish legislation, set to take effect in 2025, will require private homebuilders to provide a carbon footprint for their projects—a development expected to further boost the growth of timber construction. A drastic reduction in CO_2 limits is also anticipated. "Ultimately, the share of timber construction will rise significantly," says Knölker with confidence. "Market analyses have repeatedly shown that it will increase considerably, driven by new legislation."



Taking part in the future of timber construction

In response to these developments, WEINMANN is already collaborating with traditional precast concrete manufacturers, and of course, also with timber construction companies of all sizes. Across both the construction industry and the skilled trades, there are now projects being carried out using WEINMANN technology. One example is CM Byg, a timber construction firm based in Ribe, which has been active since 2012 and specializes in row houses and commercial buildings. CM Byg's Managing Director Jesper Christensen also sees growing interest in timber construction across Denmark: "Many of our clients expect solutions that comply with the new building regulations. Timber is an excellent choice for that. By integrating our timber elements into hybrid buildings, for example, we can help significantly improve the overall environmental footprint of a project." Based on such developments, he is confident that "timber construction has a bright future." And the fact that his company is well-positioned to be part of that future is, in his view, directly linked to the investment CM Byg made in WEINMANN solutions in 2023. "These machines have completely optimized our production processes," says Christensen. "Where we previously relied on manual processes, we can now meet the market's demands for quality, speed and cost-efficiency far more effectively."

A thoroughly reliable business partner

CM Byg successfully implemented this transformation using a BEAMTEQ series carpentry machine and a compact wall production setup, configured as a two-table solution consisting of two BUILDTEQ A-300 assembly tables (for longitudinal-crosswise flipping) and a WALLTEQ series multifunction bridge. The BEAMTEQ is designed as a cutting saw with an integrated milling system, tailored for wall cutting, beam processing and the fabrication of nail plate trusses. This allows for the fully automated production of notches, lap joints and mortise-and-tenon connections. Once the elements are laid on the assembly tables, CM Byg can now use the multifunction bridge to automatically fasten sheathing panels and cut any required openings for doors, windows and electrical outlets. "With ten employees in production and another 35 on the construction site, we're now able to complete up to 400 m² of living space per day, which significantly shortens the construction process compared to conventional methods," explains Christensen. Such results, he adds, would not have been possible without the partnership with HOMAG Danmark and WEINMANN. "We've come to know HOMAG Danmark and WEINMANN as thoroughly reliable business partners who not only provided us with the right machines, but also ensured the systems were seamlessly integrated into our production process. Today, we can respond to customer needs much faster and deliver high-quality products."

Serving market segments with flexibility

The primary goal for CM Byg is to produce three different element types as cost-effectively as possible in the future. "On a typical day, we aim to manufacture 80 m² of wall elements, plus another 60 to 80 m² of ceiling and floor panels," says Christensen. In addition to element production, CM Byg's range of services extends from drafting support for architects to planning, structural calculations and full building construction. For the construction phase, the company will continue to focus on hybrid buildings, as well as row houses and commercial properties. The WEINMANN systems offer the level of flexibility required to support this approach. Christensen

Completed construction projects from CM Byg in Denmark

views the entire EU as a potential market, although there are differences in execution across regions. For example, in Scandinavian countries including Denmark, timber façades and wood-aluminum windows are commonly used, whereas in Germany, engineered wood products and PVC windows are more typical.

The right technology for the right product

Thanks to the WEINMANN systems, CM Byg has significantly increased both its level of planning and prefabrication. Whereas it was once common for walls to be modified on-site, they are now typically fully finished and ready for installation. This reduces on-site workload and, importantly, shortens the assembly process. At the same time, CNC processing has greatly improved the precision of building components. While manual production used to result in tolerances of 2, 3 or even 5 millimeters, today, “everything fits, and the quality is much better,” emphasizes Christensen. Another major improvement is that CM Byg is now able to manufacture larger elements. “Overall, we’ve increased our production capacity by 40%, which means we build faster, larger and better.” So it’s no surprise that CM Byg is confident they made the right investment. “We’re extremely satisfied—not just with the machines, but also with the installation, training and service. All in all, we’re using the right technology for the right product.”

Taking on a pioneering role

Against the backdrop of the Danish government’s upcoming tightening of CO_2e limits in 2025, a stronger shift toward sustainable construction is being actively encouraged. This opens the door for timber to play a pioneering role in the building sector. There is no need for stakeholders to wait for the development of the necessary technologies — they already exist. The next projects can begin now.

MOD21
Making modular construction efficient

PROJECT REPORT

Timber module construction

Marin Zec
Sales Manager at MOD21

Contemporary construction

Productivity-enhancing strategies and sustainable yet cost-effective building solutions are increasingly becoming the focus of the construction industry. One approach is gaining particular traction: modular construction using industrially prefabricated components. A prime example is the Wittum 1 daycare center in Reutlingen, a public-sector project delivered by MOD21. The timber modules were manufactured using two production lines from WEINMANN.

According to the German Prefabricated Building Association, modular room-based construction is becoming more common among prefab home manufacturers. Applications range from single-family homes to commercial buildings like schools and dormitories, as well as additions and vertical extensions to existing structures. Modular construction helps meet urgent market demands for faster and more affordable building. By leveraging repetition and scale, projects benefit from streamlined planning and execution, delivering cost-efficiency and speed. These benefits are especially apparent in larger housing and institutional buildings. Like other structures built using room modules, they allow for predictable construction progress, as they are manufactured in the factory under industrial production conditions with a high degree of prefabrication. For urban densification as well, modular construction ensures consistently high quality and especially short on-site assembly times. In addition, the elements and modules can be configured in numerous variations [1].

Projects for the public sector

MOD21, a young company founded in 2021 and specializing in modular and hybrid construction, is experiencing rapid growth. In 2024, the company doubled its incoming orders compared to the previous year and expects similar growth in 2025. “We're seeing strong demand for modular construction in urban areas like Munich and Stuttgart,” says Marin Zec, Sales Manager at MOD21. “Most inquiries come from the public sector: schools, daycare centers or military facilities. While there’s also interest from private investors, for example in hotels, the current economic climate makes those projects harder to implement.” Our primary client right now is the public sector.”

Setting a pioneering footprint

The city of Reutlingen commissioned MOD21 to build the Wittum 1 daycare center, their second modular childcare project in the region. The structure, a timber modular building, measures 35.5 m x 18.1 m and stands 7.5 m tall. “Construction lasted from January to June 2024,” explains Zec. “We prefabricated 38 modules in four weeks and installed them on-site in just five days. The finishing work took another three months.” Because the daycare center is located in Germany’s second-highest earthquake zone, both the foundation and structural system were designed to meet seismic safety standards. “Thanks to the sustainable timber construction and the use of regional materials, we achieved a 96% reduction in CO_2e emissions compared to conventional construction—significantly lowering the building’s ecological footprint,” says Zec with satisfaction. For the off-site prefabrication of the modules, MOD21 used machines from WEINMANN Holzbausystemtechnik, based nearby in St. Johann.

The Wittum 1 daycare center in Reutlingen, built with timber construction modules

“It was a complete success”

Today, Wittum 1 offers children a generous gross floor area of 810 m^2 across two levels. The center provides space for three groups, accommodating children both under and over the age of three. Facilities include: a kitchen and dining area, multiple group rooms tailored to each age group, a movement/activity room, accessible sanitary facilities, administrative and staff lounges “We delivered not only a high-quality, long-lasting building, but most importantly, the children benefit from a

There's plenty of room here too: the children's cloakroom

healthy indoor climate," Zec explains. Lisa Sigloch, who oversees management and administration at Wittum 1, adds: "The building concept is a complete success. The layout is excellent—there's plenty of space, it's bright and functional. Everyone who visits gives us positive feedback."

Producing elements on two lines

The modules were produced using WEINMANN technology near Toruń, Poland. Here, ERBUD—the parent company of MOD21—operates two production lines for manufacturing wall, floor, and ceiling elements. The wall production line begins with a carpentry machine including semi-automated material feeding, followed by a frame work station. Next, the process moves across three worktables equipped with a multifunction bridge, where tasks such as fire-rated interior sheathing are performed. Elements are flipped using butterfly tables. Insulation is applied fully automatically using a multifunction bridge from the WALLTEQ insuFill series, capable of processing both cellulose fiber and mineral wool. Two additional worktables, with a separate multifunction bridge, are used for exterior sheathing. The wall line concludes at a tilt table, which transfers the finished wall elements to an eight-lane wall slot. Some units then undergo final finishing, including window installation and exterior plastering. From there, the elements are transported by distribution trolleys and a crane to the next stage of expansion and assembly. The floor and ceiling production line includes: a processing table for building the framing, butterfly flipping tables, another worktable, a multifunction bridge that processes both the top and bottom surfaces of elements up to 4.2 meters wide. At the end of this line, a crane lifts the finished floor panels and moves them to the module line, where they are leveled and aligned to ensure perfect verticality during module assembly. Once the wall and ceiling elements are complete, they are assembled and moved from station to station on transport carts [2].

Based on these production processes, it's clear that the WEINMANN system has been perfectly adapted to MOD21's production workflow and on-site requirements. It offers high flexibility for future expansion and allows for the addition of new modules or components as needed. This flexibility was a key reason MOD21 chose WEINMANN. Zec explains: "WEINMANN convinced us not only with their flexible machine sizes and the ability to design a custom production line, but also with their overall concept, machine quality and adaptability to our specific processes. Another deciding factor was our existing relationship with the HOMAG Group, and the fact that short service routes within Poland are especially important for us."

Built to meet demands

Projects like Wittum 1 demonstrate how modular construction offers a fast, cost-effective solution without compromising on quality. "On average, we're up to 70% faster than traditional monolithic construction," estimates Zec. By shifting more work into the factory, and by standardizing and optimizing construction workflows, MOD21 is able to: minimize typical on-site risk factors, improve process reliability, reduce the impact of supply chain disruptions. The fact that timber modular construction is a driver of productivity is clearly demonstrated by the WEINMANN production lines at MOD21. Digital planning tools not only optimize work preparation from design through material deployment, but also support automation and robotics, which significantly boost manufacturing efficiency and ensure seamless process integration. The production lines themselves operate with millimeter precision, are ready for use at any time and enable comprehensive quality assurance through integrated monitoring systems. "Our wall elements are produced on a 29-minute cycle," reports Zec. "For floor and ceiling elements, the cycle is 59 minutes. Including element production, the entire room modules are completed within two days. Interior finishing takes about ten days, so the total cycle time for a finished module is twelve days—

Lisa Sigloch on the center's roof terrace, requested by the client as a special feature for the educators

The Wittum 1 daycare center in Reutlingen, built with timber construction modules

Children's restroom

including installation, built-in cabinetry, kitchen, and sanitary fixtures."
For the Wittum 1 project, all construction was carried out in compliance with DGUV regulations, which clearly define the requirements for daycare centers in Germany. Examples of safety features include finger-pinch protection on doors and safety glass installed up to a height of 2 meters. Glare-free lighting was installed in selected areas, and fall protection was fully ensured. Regarding acoustic performance, specific reverberation times were implemented to meet soundproofing requirements. One of the core benefits of modular timber construction lies in the material itself: the use of wood significantly reduces the $_2$e footprint of a building. "In the case of Reutlingen, this resulted in a CO_2e reduction of 96%, and in a school project in Berlin-Straußberg, the savings were as high as 103%," says the sales director. A key factor in achieving this is intentional planning: Materials are selected and assembled in such a way that they can be disassembled, separated and reused after the first lifecycle. The modular timber units themselves can also be repurposed—something that is not only possible, but already regularly practiced. "The lessons learned for us from the Wittum 1 project are significant. "One example is seismic safety. For this, we reinforced the connections between the modules and the foundation, and we added special anchoring systems between the modules themselves."

The story continues

The importance of timber construction in Germany continues to grow. Today, more than one in five residential and non-residential buildings is constructed using timber and this share is rising, not least due to political support. A major milestone was the adoption of the new Model Timber Construction Guideline (M-HolzBauRL) in September 2024, which now needs to be integrated into the building codes of Germany's federal states. For MOD21, the next project in the Reutlingen region is already underway—once again using prefabricated modules produced on WEINMANN lines in Toruń. The GWG Reutlingen, the city's fully owned housing corporation, has commissioned a new child and family center. WEINMANN technology continues to enable ongoing innovation and rapid adaptation to evolving market demands, including new regulatory requirements. Its high production speed and optimized cycle times open up new possibilities for MOD21 in modular building manufacturing, allowing the company to implement innovative construction projects with even greater efficiency. This is especially relevant at a time when there is an acute shortage of housing.

Cooking and dining area

Physical activity space

One of the group rooms of Wittum 1

Literature

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Madergia
Timber construction in Spain

CUSTOMER REPORT

An industry on the rise

Alberto de Miguel Lozano
Managing Director of Madergia

Although timber construction still holds only a small market share in Spain, it is growing at an accelerating pace. This is evident not only in the increasing number of projects, but also in the advancement of technical capabilities, closely tied to a broader process of industrialization within the sector.

Political developments at the European Union level are creating better conditions for timber construction, even in countries like Spain, where it has traditionally played a minor role. In fact, over the past ten years, Spain has shown signs of a turning point, with steady, if gradual, momentum building.

New opportunities for timber construction in rural areas

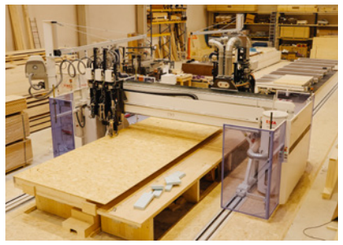
Spain is characterized by strong contrasts between north and south, and between urban and rural regions, which generate varying trends for the timber construction sector. In many rural areas, construction knowledge has traditionally been passed down from father to son. However, following the severe construction crisis of 2008 and a lack of young talent, many of the traditional building companies that once provided a wide range of high-quality turnkey homes have disappeared from the market. Today, individuals looking to build a home in these regions struggle to find reliable construction firms. What remains is a large number of autonomous, informal contractors, but few professional building companies. This challenge is compounded by sharply rising prices, driven by the fact that the few remaining firms only take on projects they consider financially attractive. As a result, a market gap is opening for young timber construction companies, especially those able to offer clients fixed pricing and tight scheduling—providing a higher level of investment security than conventional providers.

Steady growth in a strong construction market

Overall, the structural shifts of recent years have led to timber construction in Spain doubling its market share—from around 1% in 2019 to 2–2.5% at present. Compared to figures from German-speaking countries, this may seem modest, but the trend is clearly upward, with momentum continuing to build.
One of the companies that HOMAG Senior Sales Manager Thorsten Franz Linke sees as having a promising future is timber construction firm Madergia, based in Ansoáin near Pamplona. Founded in 2005 by a group of engineers, the company is located in Navarra, northern Spain. With 32 employees, an annual turnover of €10.5 million and up to 70 timber construction projects per year, Madergia is now considered one of the major players in the Spanish market. Managing Director Alberto de Miguel Lozano looks back on a successful company history—marked first by steady, moderate growth, and since 2022 by a period of rapid expansion.
From the beginning, the company has focused on single-family homes and engineered timber structures, particularly long-span roofs for sports halls, commercial buildings, and public facilities. Over the years, the company has expanded its portfolio to include multi-story residential buildings, commercial properties and facilities in the health and education sectors, which now account for around 70% of total revenue. Its delivery area spans all of Spain, including the islands.

Supplier to major construction firms

The contracts typically come from construction companies, to which the firm supplies industrially prefabricated timber components as a subcontractor. In doing so, the company flexibly employs timber frame constructions, CLT structures, or hybrid building methods, depending on project requirements. It also demonstrates a high degree of flexibility in the execution of timber frame elements. The timber components are always delivered as closed elements, although Alberto de Miguel Lozano does not see a trend toward fully turnkey timber buildings for the company at this time. The general contractors are commissioned by private developers, investors, companies, and municipalities. Key contacts include property managers, project developers and architects, all of



whom are also target groups for Madergia. Alberto de Miguel Lozano: “What matters most to us is that each of them knows and uses our solutions—even though, in practice, we mainly work for the contractor.”
Thanks to this strong network, Madergia is increasingly involved in early planning discussions with the end customer. “That leads to more efficient solutions, because it allows us to work directly with planners to develop the best possible timber construction concepts,” explains the Managing Director. Customers also value the company’s reliability, consistent quality, fixed pricing, strong service and adherence to deadlines. A high percentage of new clients come through word of mouth.

Restructuring for the future

With growing momentum in the timber sector, driven by the climate debate, EU directives, and a broader shift toward industrialized construction, the company anticipated strong growth in the years ahead. In 2022, it decided to modernize production, having already integrated a WALLTEQ M-380 multifunction bridge as an initial step.
“Right now, trends in Europe are moving from north to south,” explains Alberto de Miguel Lozano. “So we just have to look north to understand what’s coming to Spain next.” That’s why, in 2022, we initiated a restructuring process to get ahead of the wave we were certain was coming.
The goal of the investment was to increase production capacity, boost precision, and achieve a consistently high level of industrial component quality. Rather than entering new markets, the company focused on gaining speed and efficiency in its current segments—reducing cycle times, improving production planning, and shortening on-site installation time through higher prefabrication levels. Ergonomics was also a key priority for Alberto de Miguel Lozano—not due to labor market pressures, but out of a commitment to improving workplace conditions. Recruiting new employees is relatively easy for Madergia, as the company is considered highly attractive, especially among younger workers.
In 2022, company management entered into initial exploratory discussions with Thorsten Franz Linke, the respon-

Thorsten Franz Linke
Senior Sales Manager at HOMAG

“I assume that timber construction will continue to grow in any case. Right now, the development is very positive, and the opportunities look promising across many areas.”

sible Senior Sales Manager at HOMAG. These talks were not just about aligning the new WEINMANN production line as precisely as possible with current construction methods, but also with anticipated developments within the company.

Successful growth in two phases

At Madergia, an additional challenge was to divide the planning and implementation of the new production line into two phases. Initially, the first machines were to be installed at the company's former site, where space was limited. Twelve months later, the plan was to relocate to a new facility with larger halls and complete the installation of the full line. “WEINMANN designed our system in such a way that efficient operation was possible at both locations,” recalls Alberto de Miguel Lozano today. The managing director also highlights as a positive that they were able to combine a custom-built timber worktable, tailored in-house to the company's specific needs, with the new line. Another key benefit was the valuable support provided in optimizing shopfloor processes, including a crucial recommendation on how to seamlessly integrate the company’s existing blow-in insulation plate into the production flow. Madergia also received support in fine-tuning specific details—for example, in adapting from nailed to stapled joints, and in translating Cadwork drawings into machine-readable formats. The latter task was handled effectively, thanks to the company’s experienced work preparation team.

From the perspective of company management, the collaboration during this phase was both smooth and efficient. As a result, in addition to the multifunction bridge already in use, the company placed orders for a carpentry machine, an assembly table and two vacuum lifters as the next step in its automation strategy. Further equipment orders are planned following the move to the new facility. The startup phase of the new technology in early 2024 confirmed the positive impression gained during the earlier discussions. Thanks to pre-start training and on-site support from WEINMANN employees during the first week of production, the company experienced a smooth production transition, without any downtime or interruptions. Issues, such as challenges with cutting thick timber panels, were resolved quickly.

“After a short time, the new cycle times were already outperforming our previous results,” recalls Alberto de Miguel Lozano. “This allowed us to begin offering our customers shorter delivery times, which significantly strengthened our market position.” The same applies to cost savings in production, which are passed on to customers, and to the increase in the level of prefabrication made possible by the new technology—reducing labor on the construction site. In summary, this investment marks

a clear step toward industrialization, making the company noticeably more attractive to its clients.

An optimistic outlook for the future

The company is now actively leveraging the new technology in its marketing and, following a successful 2024 "during which we learned a great deal about handling the new systems during ongoing operations," it feels ready to take the next steps.
"Thanks to the new technology, we've achieved a level of precision that gives us the confidence to build even taller structures in multi-story construction," explains the managing director. "That's why I believe we'll continue to grow just as rapidly in the coming years." This is especially likely because the company now has brand-new processing capabilities at its disposal in the new facility, which spans approximately 10,000 m²—enabling the development of even higher-value products for the market. "With WEINMANN, we've found the right partner to continue strengthening our market position by delivering excellent work at a competitive price."

Statements
Testimonials

+ INTERVIEW

The experiences and insights of our customers are at the heart of every project we undertake together. Here, we share inspiring statements and quotes that reflect the success and diversity of our collaboration.

Alberto de Miguel Lozano
Managing Director of Madergia

“Today, we’re able to deliver better quality in less time and at more competitive prices, which has clearly strengthened our position with customers.”

Marin Zec
Sales Manager at MOD21

“We didn’t just provide the client with a high-quality building designed for long-term durability—the children especially benefit from the healthy indoor climate.”

Theodor Kaczmarczyk
Managing Director of MOD21

WHAT MAKES THE WEINMANN SYSTEM IN ERBUD SO SPECIAL?

The WEINMANN system has been perfectly tailored to both the production processes of MOD21 and the specific on-site conditions. It offers a high degree of flexibility for future expansions, such as the integration of a flocking unit, and allows for seamless addition of modules or other components at any time.

DOES THE SYSTEM PROVIDE ADVANTAGES FOR PROJECTS LIKE THE ONE IN REUTLINGEN?

The WEINMANN system enables us to manufacture buildings with a very high degree of prefabrication, allowing for extremely rapid implementation of the concept—ensuring that facilities like the daycare center in Reutlingen can be delivered to the municipality in a very short time. Another key benefit is the consistently high quality, thanks to a high level of standardization in the production process. The machine works with millimeter precision, is always ready for operation and features integrated monitoring, which supports comprehensive quality control. In addition, the system is compatible with various software platforms and tools, enabling seamless integration across all production processes.

WHY DID MOD21 CHOOSE WEINMANN?

Before making a decision, we visited several manufacturers and observed their machines in live operation. WEINMANN was particularly impressive with regard to the flexibility of machine sizing and the ability to develop a customized production line tailored to our specific needs. The concept, the quality of the machinery, and its adaptability to our production requirements were ultimately the deciding factors. Our existing relationship with the HOMAG Group also played a role, especially given the short service routes within Poland, which are extremely important to us.

LOOKING AHEAD: WHAT CAN BE ACHIEVED TOGETHER THROUGH THIS TECHNOLOGY?

WEINMANN technology supports continuous advancement and rapid adaptation to market demands, including changes to regulatory frameworks. Its high production speed and optimized cycle time open up new opportunities for manufacturing our building modules and help us implement innovative construction projects more efficiently. This is especially relevant at a time when there is an acute shortage of housing. Thanks to the high degree of prefabrication and accelerated construction timelines, we can deliver urgently needed housing much faster.

Space Factory
Timber construction in Korea

CUSTOMER REPORT

A quantum leap in South Korea

Park Jung-jin
CEO Space Factory

In just half a decade, this timber construction company has made the leap from manual stick framing to modern, fully automated modular building.

As in Japan, timber construction has a long-standing tradition in South Korea. The classic residential building is the “Hanok”—a wooden house featuring underfloor heating and climate-regulating clay walls, offering a high level of comfort. Even today, Hanoks are still built in traditional woodworking shops, and master carpenters rank among the highest-paid tradespeople in the country. Their skill is widely recognized, and the fact that the South Korean contestant was crowned world champion carpenter at Holz 2022 in Basel is no coincidence.

Unlike Japan, where major automotive manufacturers operate large-scale timber housing factories, timber construction in South Korea remains a niche market. Most of the population lives in metropolitan areas, where buildings are typically made of reinforced concrete. However, niches for timber construction are emerging on the outskirts of cities and in rural areas, where demand is growing steadily for healthy and sustainable building solutions.

This has led to continuous growth in the timber construction sector over the past few years, not just in residential buildings, but increasingly in high-end commercial properties as well. One sign of the growing prestige of timber construction in the country is that Blumer Lehmann AG was awarded the contract in the early 2020s to build an exclusive golf clubhouse with a free-form roof in Pocheon.

Modern modular houses

One of the rising players in South Korea’s timber construction sector is Space Factory, based in Gyeonggi Province. Founded in 2004 under the name Hangulhousing, the company began building timber-frame residential homes. Today, its focus lies in modular, two- and three-story homes, located primarily in desirable suburban areas and rural regions. In this segment, Space Factory is the national market leader, with a delivery area that covers the whole of South Korea.

Until the end of the decade, the company primarily relied on on-site stick framing, following the American model. This approach led to issues with build quality and high construction costs.

“To address these challenges, we decided to invest in manual prefabrication methods from the U.S.,” recalls CEO Park Jung-jin. “The goal was to improve the quality assurance of our homes. When carpenters work on-site, the final result often depends heavily on their condition that day. That requires constant, thorough quality control—and even then, you can't achieve the same build quality as with factory prefabrication.”

The weather conditions in South Korea were another strong argument in favor of prefabrication: “We have very wet summers and cold winters, which cause construction delays of four to five months each year when building on-site,” explains the CEO. Finally, cost efficiency played a decisive role: “Our aim was also to reduce costs through prefabrication. On a construction site, that’s virtually impossible. In a controlled factory environment, however, there are countless opportunities to integrate cost-saving strategies directly into the production process.”

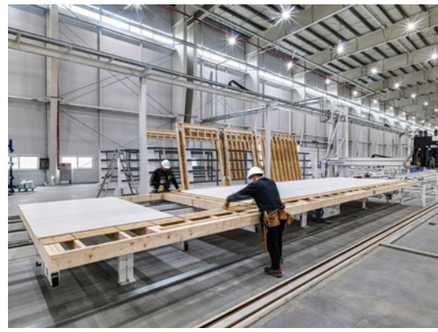
1000 houses per year

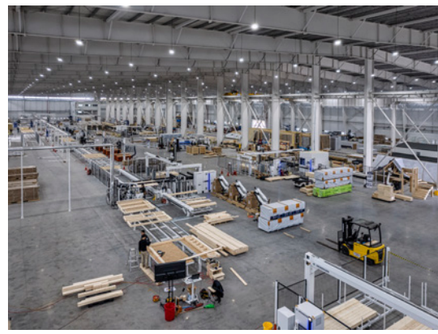
The company’s investment in a manual production line marked its transition to the prefabrication of complete modules. At that time, single-sided sheathed elements were produced, assembled into modules, and then closed after the installation of plumbing, heating units and electrical systems. However, due to the manual processes involved and the limited space in the production hall, the company soon reached its capacity limits.

Recognizing the need for further automation, CEO Park Jung-jin recalls: "That was reason enough for me to travel to LIGNA in Hanover in 2019, where we met several companies from Italy, the UK, Sweden and Germany that offered relevant production lines. Eventually, we got in touch with the company that offered us the most comprehensive and professional solution: WEINMANN.”

At the time, the company was producing 150–200 houses per year, but already had its sights set on scaling up to 1000 units annually. Another key driver was the need to raise quality standards. While South Korea had long followed American timber construction standards—with about 90% of its timber sourced from the U.S.—new regulations regarding insulation performance were pushing local manufacturers to revise their wall constructions.

According to CEO Park Jung-jin, WEINMAN was the right partner to meet both challenges: “WEINMAN machines are not only significantly faster and more precise than manual equipment—they





Finished timber construction project in South Korea

allow us to build high-quality structures at scale. Even more importantly, their flexibility in terms of component configuration enables us to fully meet Korean insulation standards."

As a subsidiary of the HOMAG Group AG, WEINMANN also offers what CEO Park Jung-jin sees as a major advantage: "They have a global presence, including a local branch in South Korea. That means we benefit from professional after-sales service, including training, maintenance and fast support when needed. This local presence was a decisive factor in our decision to choose WEINMAN."

Smooth transition

The initial contact, a visit to Weber-Haus, was followed by a longer dialog with intermittent pauses, during which a clear picture gradually emerged: a well-equipped production line featuring an automated frame work station, a total of 16 processing tables, five multifunction bridges, several cutting centers, and two lines for module assembly. The reason for the extended development phase, which continued until 2022, was the client's search for a suitable site.

This phase came to an end in October 2022 with the groundbreaking for a hall measuring 200 meters in length and 90 meters in width. From early 2024, the hall was gradually equipped with the ordered workstations. By September, the company officially began production at its new location.

After on-site staff training by the WEINMANN Academy, the launch was supported for five weeks by a dedicated trainer, who not only continued training during live operations but also offered valuable insights into how minor product adjustments could make the new production setup even more efficient. As a result, the transition from the old to the new factory was smooth and seamless. Today, Space Factory is operating at a cycle time of 20 minutes per (multi-)element, already coming very close to the targeted 15-minute cycle—and bringing the goal of producing 1000 houses per year well within reach.

Next step in sight

As a result of its modernization efforts, Space Factory achieved a quantum leap from traditional stick framing to modern modular construction in less than five years. Alongside improvements in cost structure, the company's market share also grew significantly. Park Jung-jin: "Affordable housing is the key to success in our market."

At the same time, the CEO of Space Factory is already eyeing the next stage of growth for the company: "We've now reached an important milestone in our development, but this is by no means the final destination I have in mind for Space Factory. Unlike in Germany, there are still no timber buildings in South Korea taller than four stories. In collaboration with WEINMANN, we're planning to expand the market for modular timber housing so that we can build taller structures in the future."

Park Jung-jin strongly encourages others in the industry to follow this path: "Around the world, it's becoming increasingly difficult to find skilled labor and the cost of labor keeps rising. Prefabrication, mechanization and automation offer a way out of this dilemma. By reducing reliance on manual labor, companies can achieve significant cost savings, turning automation itself into a competitive advantage." "If I had one piece of advice for other timber construction companies, it would be this: reduce your dependence on labor through automation, even if it means higher upfront costs. In the long run, it pays off."

Space Factory
Intelligent software solution

INTERVIEW

The Space Factory team with Wolfgang Bock, Managing Director of granIT

With its adoption of WEINMANN technologies, Space Factory is setting new industry benchmarks in South Korea's timber construction sector. A key success factor has been the seamless integration of hardware and software. By combining advanced CNC machinery from granIT, a powerful Manufacturing Execution System (MES), and the high-performance modeling software ArchiFrame, the company has created an efficient and precise production system —the result of close, global collaboration between the involved teams.

The opening of Space Factory's new state-of-the-art facility in fall 2024 presented the ideal opportunity to invest in a customized technical system. From the beginning, it was clear that seamless integration between hardware and software would be essential to achieve the company's goals.
This challenge was solved through a combination of fast and precise CNC machines from WEINMANN, an advanced Manufacturing Execution System (MES) from granIT and powerful modeling software ArchiFrame from Solibri. The latter extends Graphisoft's proven CAD/BIM software Archicad as an add-on, transforming it into a design tool for timber construction.
Both software firms are part of the Nemetschek Group.
With ArchiFrame, Space Factory can transfer architectural models directly from Archicad, ensuring a smooth, streamlined workflow. Thanks to precise BIM modeling and direct integration with production, ArchiFrame reduces errors, optimizes material usage and significantly shortens project timelines.
The MES software from granIT plays a vital role in automating production management and maximizing efficiency. Its structured approach enables quick identification and resolution of production bottlenecks and ensures smooth operations.
Combined with WEINMANN's highly automated, powerful CNC machines, this results in a fast and seamless production workflow. In total, these integrated software and hardware components form a powerful CNC-driven production system that enables Space Factory to advance the construction of sustainable timber homes across South Korea.
According to Kwon Hyun-Jun, Chief Architect of Space Factory, the company is focused on "high-quality, energy-efficient timber homes that combine modern esthetics with long-lasting durability."
One of its most recent developments includes a high-end modular housing estate designed to blend seamlessly into its natural surroundings while providing residents with a sustainable and comfortable living environment.
Space Factory uses prefabricated modules and elements, which offer flexibility and efficiency across all project types. As demand for eco-friendly housing continues to grow, the company is at the forefront of innovation in South Korean timber construction, integrating smart home technologies and passive house standards into its designs and relying on advanced prefabrication techniques.
"Interest in prefabricated timber homes as a sustainable alternative to traditional building is increasing. We're committed to staying one step ahead of the trend by continuously adopting new technologies and refining our processes."
At the new production facility, Space Factory has successfully implemented a high-performance solution by combining: WEINMANN CNC machinery, granIT's MES software and ArchiCad + ArchiFrame for CAD modeling. This integrated approach enables high efficiency, waste reduction, and precision at every stage of construction.
With this modern, highly automated prefabrication strategy, the company is addressing ongoing industry challenges such as labor shortages, long construction timelines and material inefficiencies—and is delivering faster, more cost-effective, and sustainable housing solutions. By optimizing costs, Space Factory can now offer its innovative timber house designs to a much broader audience. This marks a major step in making sustainable, high-quality modular living more widely available.
Collaboration was a critical success factor for this project. Petteri Heiskari, CEO of ArchiFrame, Wolfgang Bock, CEO of granIT, team members from WEINMANN Germany and HOMAG Korea and engineers from Space Factory all worked side by side to ensure seamless technology integration.
Petteri Heiskari praised the Space Factory team's adaptability: "Their ability to adopt, adapt and make new software their own was outstanding. Working together with Space Factory, WEINMANN, and granIT was a fantastic experience. Together, we were able to provide a truly customized solution—one that has now become part of our standard offering."

Building efficiency.

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info@weinmann-partner.de
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Editor, design, & concept:
Alisa Finkbeiner
Cover photo: Madergia
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Authors:
Serial renovation: Alisa Finkbeiner
Strobel: Dr. Joachim Mohr
Product news: Dr. Stefan Bockel
Timber construction in Denmark: Michael Hobohm
MOD21: Michael Hobohm
Timber construction in Spain: Dr. Joachim Mohr
Timber construction in Korea: Dr. Joachim Mohr

Image sources:
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WEINMANN Holzbausystemtechnik GmbH
info@weinmann-partner.de
www.homag.com/weinmann

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