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best of Ledinek

DIRECTORY

CLT

KVH & GLULAM BEAMS

INSIGHTS

Further processing is booming

Commentary by Gerd Ebner, editor-in-chief at Timber-Online.net

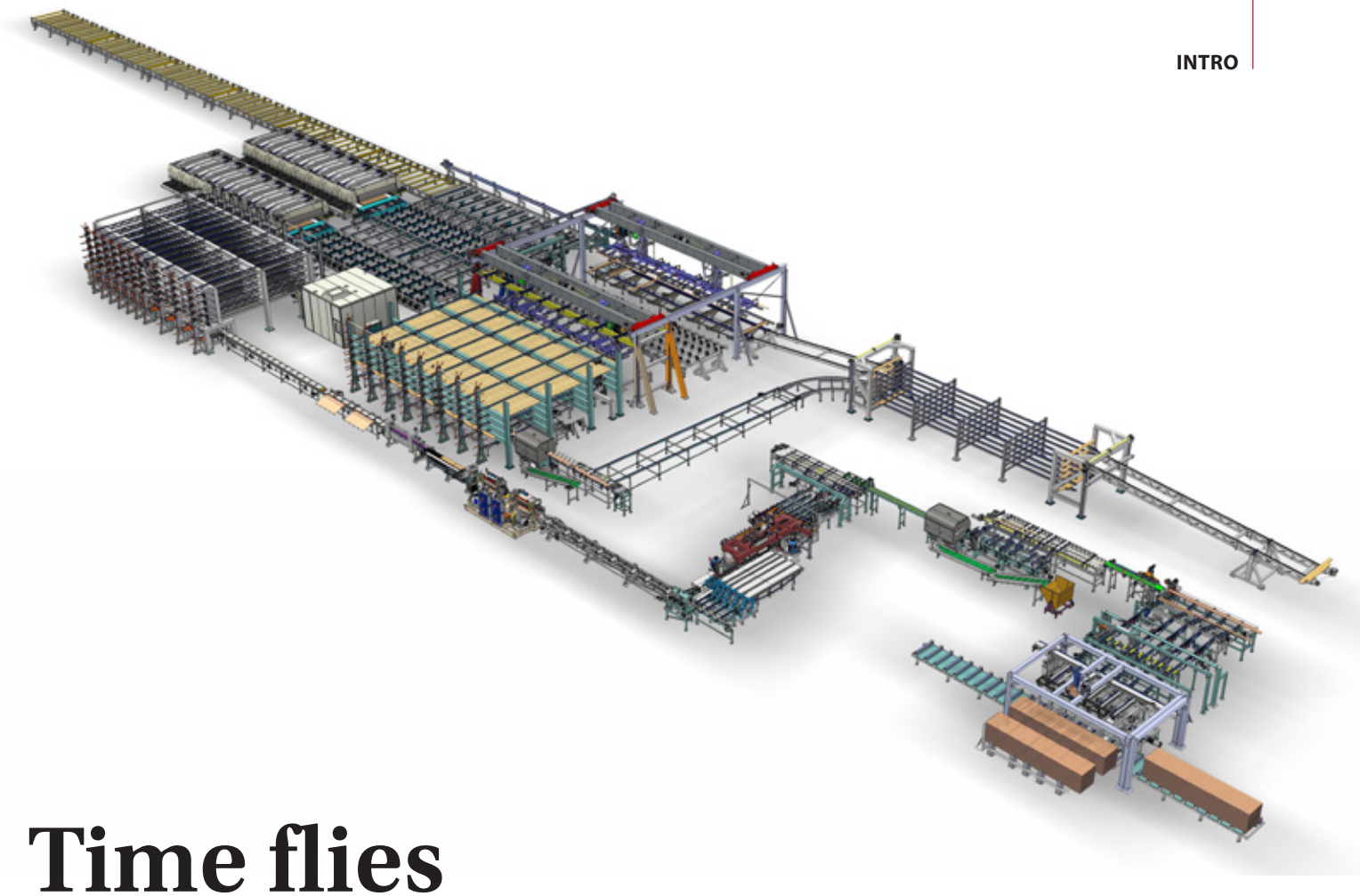
There is no end in sight for capacity expansions in the further processing sector. Not only in Central Europe expansions and new constructions have been booming, this is a global trend. Particularly prominent here is the "youngest" timber construction product CLT. It is safe to say that Germany, Austria and Switzerland a.k.a. the "DACH" region has the densest network of producers. In a CLT special edition in the fall of 2018, Timber-Online ascertained an annual output of 770,000 m³ of CLT for last year. From 2021 onwards, three big Central European CLT manufacturers will together produce more than the entire sector in total at this moment – 880,000 m³/yr.

In overseas countries, as well, more and more productions emerge – in the United States as well as Australia or Japan, even if on a considerably lower level than in Europe. But: Prospects for the European machine suppliers are good since this is the home of CLT.

As for glulam and KVH, development is not as steep as it used to be. Still, producers are also investing in these segments.

Together with Ledinek, we compiled the articles of the past years into a special edition. The following pages provide insight into exciting installations and interesting projects that Ledinek already realized so far.

The team of Timber-Online hopes you enjoy reading this collection and wishes you great timber business as well as a successful Ligna 2019!



Time flies

Commentary by Gregor Ledinek, managing director at Ledinek Engineering

It almost seems like the biennial rhythm from one Ligna to the next is getting shorter.

There are more and more projects and tasks that have to be taken care of within those two years. This time, we made a somewhat bigger step with regards to cross-laminated timber systems: A huge jump in the direction of complete systems. Our team installed and launched several systems all over the world which are now successfully producing.

What has become apparent at Ledinek over the past years is the trend towards complete solutions because this is also what customers want. The systems have a higher level of automation which is why it is necessary and the only logical reason to provide a one-stop service. In the meantime, we were able to supply many international markets. This brought us new reference customers on other continents. We hope that thanks to our installations we will increasingly work internationally and expand our business relations.

As for the Ligna in Hannover, we hope to welcome many visitors and be in touch with a lot of existing as well as new prospective customers. Together with investors we want to work on solutions for the challenges of different markets and products and we hope to be invited to negotiations for further investments in the upcoming years.

SPLITKON

Express delivery to the North

First large-scale CLT plant in Norway

A hall consisting of 2500 m³ of CLT and glulam elements is most definitely worth a mention on Timber-Online. In this case, however, we will not focus on the production hall of 8,700 m² built by Splitkon in 2018 but rather its contents. The Norwegian company is currently launching the country's first CLT production at its Åmot location – Ledinek acts as the one-stop supplier in this undertaking.

Günther Jauk, translated by Susanne Höfler Günther Jauk

Splitkon is an institution amongst Norwegian laminated timber producers. In 1958 already, the company launched the country's first glulam production. Just before the turn of the century, the enterprise became part of the Moelven group only to return to standing on its own feet again in 2011. The Norwegians have been specializing in timber construction projects mainly with glulam and CLT ever since. The glulam needed primarily comes from Swedish timber industry Martinsons, CLT is supplied by renowned Austrian producers. A part of the elements is additionally purchased in raw condition and joined by means of a Hundegger K2i.

Hardly any interfaces

2014 was the first time that an in-house CLT production was seriously considered. „CLT demand in Norway increased from 5000 m³/yr to 70,000 m³/yr between 2004 and 2018 – a trend that will continue not least because of strong support from the government," Splitkon Head of Production Knut-Arne Johansen is convinced. Furthermore, the company headquarters in Åmot are located in the middle of the country's best spruce growing area surrounded by several large sawmills.

In search of the system that would fit the company's needs best, two things were clear from the start: „Due to better fire retardant properties, melamine resin was really the only option for us. Furthermore, I was against a high-frequency press as a result of personal experience," Johansen says.

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> „We opted for the only true full-range supplier on the CLT machine market."
>
> *Knut-Arne Johansen, plant manager Splitkon*

Based on these exclusion criteria, the Norwegians sat down with several renowned machine suppliers and finally found what they were looking for in Ledinek. A main decisive factor for Johansen was the Slovenian's scope of supply: „Ledinek is the only company that produces all main system components in-house. With this, a majority of what usually are error-prone interfaces disappear right from the start."

The novelty of two presses

The core components of production are a high-performance finger-jointing line of the type Kontizink L-S120 with a feed rate of up to 120 m/min, a Multiplan 4V-S200 lamella planing machine and two X-Press 16 cross-laminated timber presses.

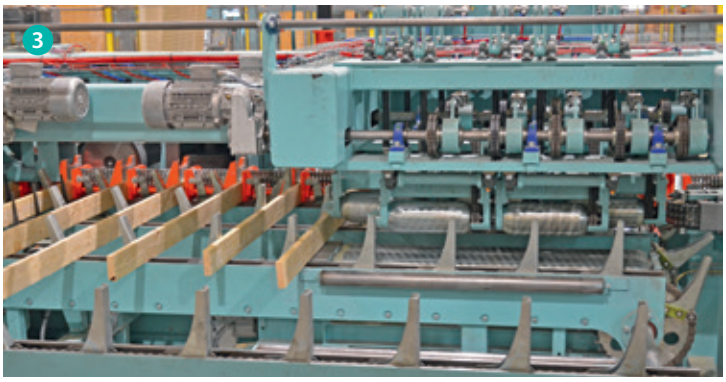
Furthermore, Ledinek supplied the entire mechanization including laying station and curing section for finger-jointed lamellas as well as two X-Cut S400 high-capacity cross-cut saws.

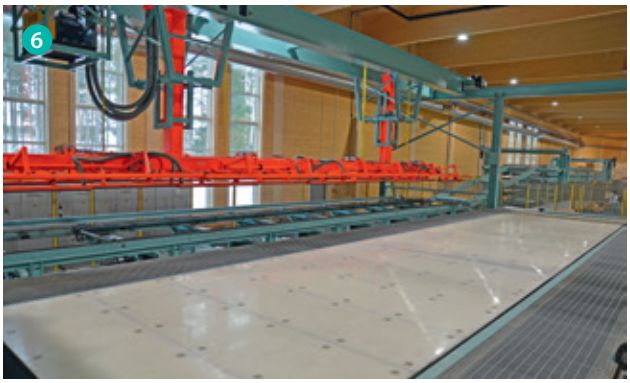
Splitkon opted for two identically constructed presses with a length of 16 m each and a width of 3.5 m as well as a specific press power of 0.8 N/mm² in response to the longer press times that are required for melamine resin without heat exposure. „This is the only way we can reach the production output we are aiming for," Johansen informs. For 2019, around 20,000 m³ are planned; for the following year around 40,000 to 50,000 m³ in a two-shift operation. Theoretically, the maximum output is 100,000 m³/yr.

Great collaboration

After completing the new production hall in Åmot that was planned and built in-house – roof and walls are made from CLT, beams from glulam –, Ledinek started installing the lines and systems in the summer of 2018. In January, the launch followed – full operation is expected for the beginning of the second quarter. „Considering the size of the project, there have hardly been any complications or delays. So far, everything is going according to plan," Johansen is more than satisfied with Ledinek's performance so far.

By now, Splitkon was already able to realize a first project with in-house produced CLT: a two-story school project near Åmot. In addition, several large-scale projects like for instance a 13-story student dormitory in Oslo and a five-story building in Bergen are being planned. Building with cross-laminated timber is booming in Norway, and thanks to the new Ledinek system Splitkon is now able to realize projects with CLT from in-house production. //





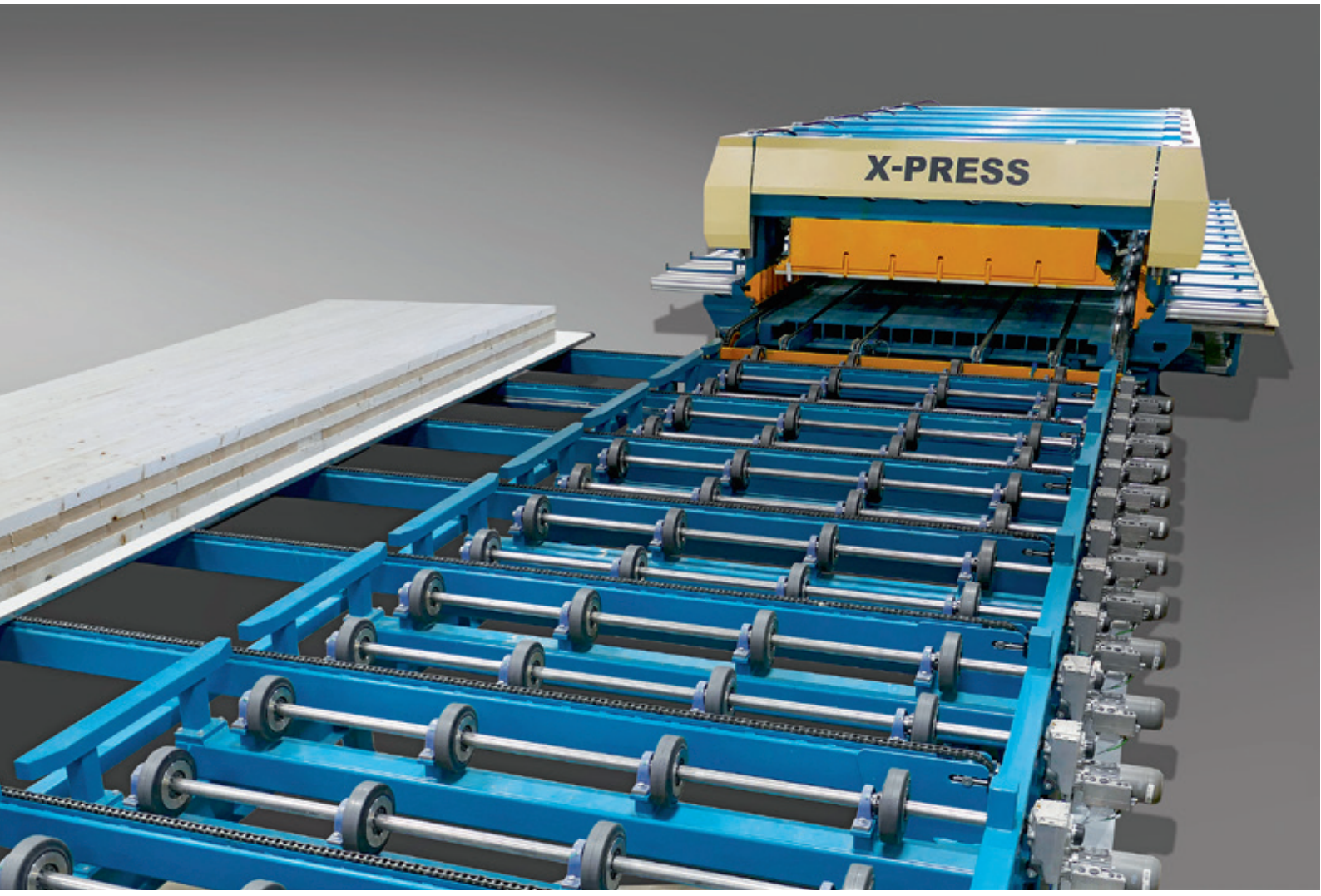
1. ***Splitkon managing director Knut-Arne Johansen in the company's new cross-laminated timber plant***
2. ***The Norwegians went with a complete solution from Ledinek – two presses of the type X-Press 16 form the heart of the facilities***
3. ***The finger-jointing line Kontizink L-S120 can handle up to 120 m/minAls Lamellenhobelmaschine*** *dient eine Multiplan 4V-S200*
4. ***The lamella planing machine*** *used is a Multiplan 4V-S200*
5. ***Two X-Cut high-capacity cross-cut saws*** *are trimming out flaws and cross-cutting cross layers*
6. ***By means of a vacuum lifter,*** *cross and longitudinal layers are stacked in turns – the MUF glue application was supplied by Oest*
7. ***The entire mechanization*** *– here for instance before sorting – also comes from Ledinek*

Wanted worldwide

Flexible and narrow side gluing is coming

The order books of Ledinek of Maribor, Slovenia are full. The Slovenian company is the only machine manufacturer who is able to fully supply new CLT manufacturers entering the market.

Gerd Ebner, translated by Eva Guzely Ledinek



An X-Press 12 for Sunadaya: *In Japan cedar and cypress wood is glued with EPI*

At the moment, installations are being done worldwide. Ledinek profits from the fact that it was part of the pioneering installations in Central Europe at the beginning of the millennium. Those installations set a standard which then became established in the whole world. "The production of CLT is the same everywhere. Every company more or less copies what was invented in Austria", sums up Felix Voglhofer, CLT Key Account Manager. "The panels' composition varies only slightly."

Big in Japan

The most recent admission for a new CLT production was given to Japanese newcomer Sunadaya in August. In Saijo, Ledinek installed a 12-metre press ("X-Press 12"). This was press number 7 which the Slovenian company sold. In the meantime, Ledinek officially reached a dozen – and even more unofficially.

After the JAS certification, the production site is now working in a two-shift operation.

Special features

In Japan, only EPI and melamine are admissible. The system installed at Sunadaya thus has two special characteristics, which reflect Ledinek's flexibility:

- EPI is used as an adhesive.
- The types of wood used for production are cedar and cypress.

For the two-component EPI application, Ledinek chose Swedish adhesive application systems supplier Mixon.

***Sunadaya** opted for a complete solution by Ledinek*

Convincing technology
"We provided Sunadaya Japan with the entire production system. However, our company was chosen primarily for our finger-jointing and pressing technology", remembers Voglhofer about receiving the order.

Panels of up to 12 metres in length and 3.05 metres in width with possible panel thicknesses of up to 36 cm are produced thanks to the flexible production system. According to Ledinek, annual output can reach a total of 22,500 m³ which corresponds to an output of about 45 m³ per shift.

Complete delivery
As to the main machines, the delivery included a Kontizink finger-jointing machine for up to 120 pieces per minute, a Rotoles planing machine for laminations, a multi-level storage unit, an X-Cut cross cut saw and the X-Press 12 mentioned before.

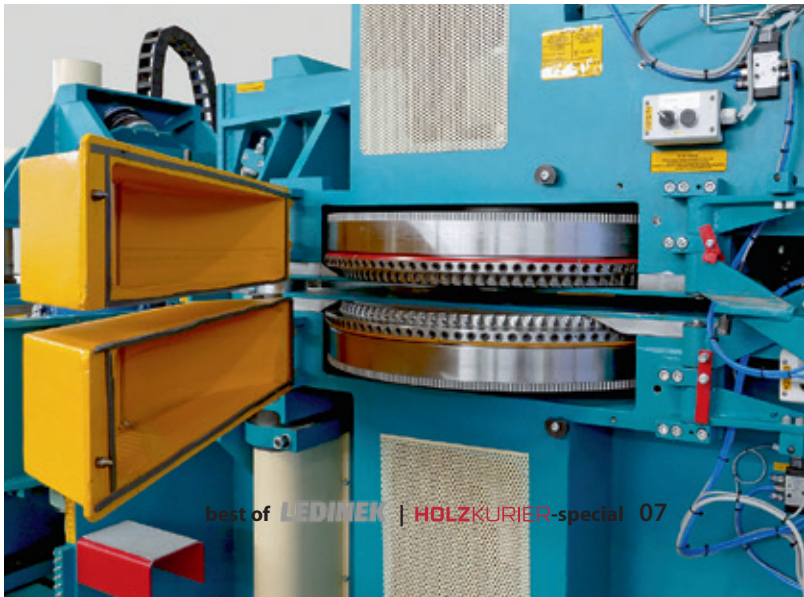
The first in the US
In the United States, Ledinek has been challenged with yet another type of wood, i.e. Southern Yellow Pine, and a different adhesive, the so-called "US-Polyurethane". "US" was added in order to underline the fact that a different type of polyurethane adhesive is used in the US. The adhesive application system has been provided by Oest of Freudenstadt, Germany. The system in question was ordered by International Beams subsidiary IB XLAM, and has an annual production capacity of 60,000 m³, which is possible thanks to an X-Press 16.

US-certification pending
This year, International Beams is going to start its CLT production in the southeast of Alabama. At the moment, IB XLAM's test production is pending certification. Among other products, nine-layer panels, which are to be produced in the future, are glued in this test phase.

More machines are requested
Interest in the first CLT sample panels is said to be massive in the US. Even before this first system has started operating, a further increase of production performance is >>

***Ledinek's X-Cut** cuts defects out of the wood*

***The Rotoles** calibrates the laminations*



being considered. According to Voglhofer, this would be possible by adding a finger-jointing machine and an additional press, since Ledinek's systems offer the possibility of a modular expansion. After all, interfaces are minimised at a general supplier.

International Beams has a lot of experience in the North American timber construction market. The company has been active since 1995 and produces, among other things, I-beams, glulam and LVL. International Beams also has a distribution partnership with one of the pioneers of CLT, i.e. KLH.

Ledinek has received an order for another complete CLT production system for North America, which includes package infeed, a defect cutting saw, a Kontizink L S120 finger-jointing machine, a Multiplan planing machine for laminations, an X-Cut for the cutting of the crosswise layers and a third generation X-Press 16.

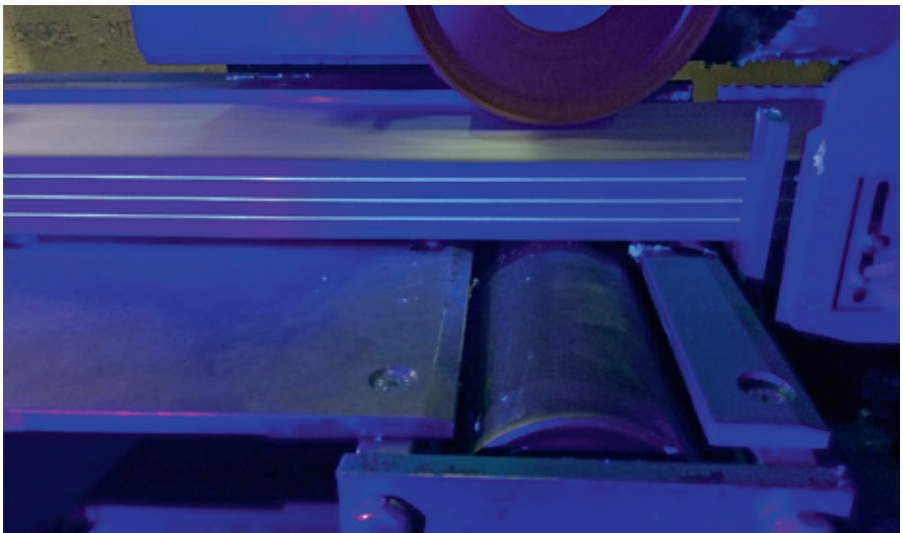
All these machines come with a lightweight aluminium/PE laying and pressing table which can be moved safely and fast even with ever more heavy CLT panel structures. This makes it possible to reach an adhesive application speed of up to 120 metres per minute.

The new X-Press is thus prepared for the coming product range of fast-curing 1K PU-adhesives and can make the most use of their characteristics. //

The Kontizik can finger-joint *up to 120 pieces per minute, running at a maximum speed of 120 metres per minute*

Double vacuum de-stacking *to prepare layers before they enter the 12-metre press*

Most recent development with two machines *in the final phase: narrow side gluing for laminations of up to 16.5 metres in length*



FAST NARROW SIDE GLUING IS COMING

At the moment, Ledinek is developing the Z-Press, a very flexible assembly and joint gluing machine for laminations of up to 16 metres in length. The Z-Press can produce width-glued double laminations, triple laminations, panel segments or, if desired, complete 16 metre single-layer panels from narrow dimensions.

This type of assembly gluing has two advantages. Firstly, it significantly increases safety in the laying process of the CLT production, thereby making it possible to use faster-curing adhesives even when narrow sideboards are used. Secondly, from a construction physics point of view, closed joints have advantages since it basically comes down to the pressing of single-layer panels.

All of these advantages could mean that in the future, many new CLT production sites are going to be equipped mainly with a Z-Press joint gluing machine.

Right now, a system of this kind is in the final development process and a second one is already being produced for a German manufacturer. The systems have been adapted to laminations of 10.5 and 16 metres in length.

Joint gluing machines are not new. However, the Z-Press is a more affordable and flexible system. According to Ledinek particular attention has been given to flexibility in the setting of lengths. This is done in a way that the system's performance is not negatively affected.

Different adhesive systems can be used. A Hotmelt is going to be the first choice for the performance and flexibility of the system.

And the Winner of this year is?

With a high level of multidisciplinary skills and knowledge, with our passion to invention and ingenious techniques, we shape the wooden world today.
We take our own way to the top, we believe and trust in what we do.
As experts in complex processing of massive wood, planing and profiling, finger jointing and engineered timber, we tackle the challenges of modern lifestyle and ensure the state-of-the-art technology of our products – from product design to delivery and installation. On the basis of our sporting spirit we never give up, but search for the best solution for each single customer.

www.ledinek.com

1 ***The CLT factory*** *that Ledinek installed for XLam, Australia, has been launched a few weeks ago*

2 ***The X-Cut cross-cut saw*** *brings lamellas to the correct length*

3 ***The Multiplan planing mill*** *has a feed rate of 200m/min and is equipped with additional horizontal spindles*

4 ***Five levels*** *give the PU adhesive enough time to cure*

5 ***On the lay-up unit,*** *longitudinal and cross layers are stacked in turns – and the lay-up table passes through in-between during adhesive application*

6 ***The X-Press press*** *is a third generation model and can handle elements up to 16 by 3.6 m*

7 ***The easy-to-service glue application head*** *with servo-powered dosing technology is provided by Oest*

XLAM AUSTRALIA

Cross-laminated timber from down under

Slovenian plant concept convinces in Australia

A few weeks ago, XLam – a Mayflower group company – launched its first cross-laminated timber plant for large-size elements in Australia. Dedicated machine supplier was Ledinek, the Slovenian specialist for complete solutions.

Günther Jauk, translated by Susanne Höfler Ledinek (6), Oest

The currently still small cross-laminated timber market in Australia and New Zealand is undergoing massive growth. Amongst domestic companies, this is first and foremost thanks to construction enterprise Lendlease and CLT producer XLam. Both companies have been doing important work raising awareness for and providing information on CLT and built flagship projects that made the new construction material widely accepted.

Due to the limited capacities on the New Zealand market and the large potential in Australia, XLam decided in 2016 to build a second location in the Australian city of Wodonga which brought a capacity expansion of 10,000 m³/yr to a total of 70,000 m³/yr.

Tried-and-tested system components

In the matter of machine selection, the Australian CLT producer invited and reviewed several offers but it didn't take long for plant manufacturer Ledinek to win the race. Together with Oest, the Slovenian specialist offered the entire machine complex from the feed-in of raw lamellas up to the finished joined panels. „Technically and in terms of price, this was by far the most attractive offer," XLam CEO Gary Caulfield remembers.

„As the only genuine full-range supplier for CLT production, we were advancing the project in huge steps," Ledinek Head of Sales Robert Mlinaric reports. It took just under six months from the first inquiry to the contract placing; a lot of different project variants were simulated in order to find the optimal concept for the plant.

Reliable technology

When selecting the individual machines, Ledinek exclusively used tried-and-tested components. „No experiments or prototypes! With a distance of 15,000 km, operational reliability is even more important than usually," as Mlinaric puts it.

After the conventional package feed-in for two to three qualities, a vacuum de-stacking follows. Since the raw material is already accurately trimmed, the line does not need a scanner. The Kontizink 20 outputs around 2500 running meters per hour or, depending on the cross-section, 100 to 150 m³ per shift. A five-level curing tray storage grants the PU glue enough time to cure.

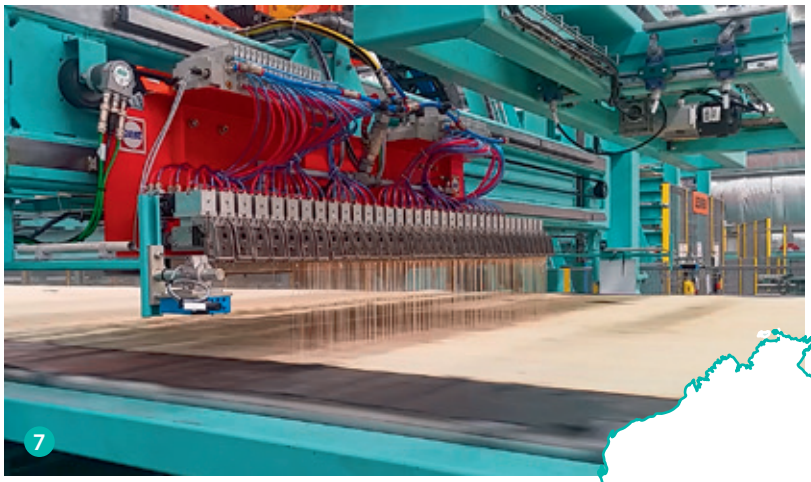
A Multiplan planer with six spindles and a feed rate of 200 m/min was equipped with additional horizontal spindles upon the customer's request in order to create perfect surfaces without the need for jointers. „Designing the machine like that generates better surfaces for surface gluing," Mlinaric explains.

After planing and cutting with an X-Cut cross-cut saw for cross-layer cutting, the lamellas are brought into the storage with a capacity of up to ten cross layers. The buffer for longitudinal layers can contain up to 15 layers and is already dimensioned for an expansion by another six layers. „Here, we already have taken into account a potential second press for the upcoming years," Mlinaric informs.

Flexible gluing

The vacuum lay-up unit has two lay-up tables and can stack up to 16 panels per shift. The surface gluing system is provided by Oest. Thanks to its dosing system Kontitop with servo-powered dosing technology, the application head Facetac and an additional water spray mechanism it is ideal for surface application.

The maximum gluing width of the easy-to-service application head is 1750 mm which is half the width of the largest CLT elements to be produced. The head has 35 glue material valves which can be switched in a grid of 50 mm – adjustment of the gluing width is done automatically via the SPS system. If necessary, individual application segments can be replaced in a grid of 50 mm in a few easy steps, Oest distribution engineer Rainer Köster informs. Glue application is run



from standstill and is started at the same time as the lay-up table moves forward within the component's edgeds. Following the „all in use" principle, the application head is adjusted for every gluing pass to cover half of the gluing width either from the left or from the right. The feed rate is 120 m/min, and the application volume reaches around 140 g/m². The finger-joint glue application is also from Oest.

16 m press

The X-Press press is a third generation model and can produce elements of up to 16 by 3.6 m. The surface pressure reaches up to 0.8 N/mm², according to Ledinek. After glue curing the panel is automatically conveyed from the press and makes room for the second press table. This allows for fast feeding of a new element and the pushing device has enough time to push off the panel longitudinally where enough buffer conveyors are installed (upstream of the joining system) to ensure seamless production. Furthermore, the planners already allowed for potential additional CNC processing centers.

The system is controlled by means of the Ledinek X-Lam management system. The Slovenians developed the user-friendly control specifically for touch screens which allows for mobile control on tablets.

„Depending on the requirements, we can exactly tailor the flexible system to our customers. Furthermore, the integration into existing business processes enables optimal automation and effective logistics processes," Mlinaric informs.

„A step in the right direction"

The official launch was on the 5th of May 2018. A few weeks later, Caulfield sees a bright future ahead: „The cross-laminated timber market in Australia and New Zealand is still in its infancy. Sustainable market growth is only possible if we establish integrated procurement and design solutions. Our new factory is most definitely a step into the right direction for this purpose." //

XLAM AUSTRALIA

Location: Wodonga/AU

Managing director: Gary Caulfield

Employees: 25

Type of wood: Pinus radiata

Production capacity: 60.000 m³/J

Now, *only* Africa is missing

CLT production lines on almost every continent

Over a dozen finished projects: Ledinek shipped its twelfth X-Press for CLT to Finland and has built CLT presses for various companies in Japan, Norway, France and the US. For two projects, the Slovene company not only delivered an X-Press but a complete CLT production line, from the infeed of the laminations to the passing on of the finished panel to a joinery machine.

Günther Jauk, translated by Eva Guzely Ledinek (1), Günther Jauk

Take a look at this picture. Two European experts explain the technical details of the improved X-Press for CLT to an American university professor. After being completed, the 12 metre long press was shipped to Asia, to the Japanese company Cypress Sunadaya of Komatsu Saijo, to be specific. This picture was taken at a production site of Slovene machine manufacturer Ledinek and is a reflection of the global trend towards CLT.

Ledinek's Felix Voglhofer and Robert Mlinaric (left and right) explain techincal details of their CLT press to Prof. Michael P. Wolcott of the Washington State University

With fewer than ten CLT presses built, Ledinek has already become one of the industry's most experienced manufacturers. In 2013, the Slovene company installed their first 8-metre machine at Ammattiopisto Lappia in the Finnish town of Kemi. In 2014, a 12-metre press was built for the Finnish transformation company Crosslam Kuhmo. In the same year, Ledinek started the first CLT production in the Baltic region.

Cross Timber Systems of Jelgava in Latvia has ordered a complete system, from the infeed of the raw material to the passing on of the finished panels to the joinery machine. "This is certainly one of our strong suits", comments sales manager Robert Mlinaric. With this project, Ledinek was responsible for the planning of the entire system and built nearly all of the machine components. "Thanks to our full responsibility and the use of Ledinek's planing and finger-jointing technology, we were able to avoid interfaces, guarantee highest machine quality and accelerate the planning and start-up of the project considerably", says Mlinaric about the advantages.

In 2015, Ledinek had its first project in Austria. The company built a 16 metre long CLT press for Mayr-Melnhof's production site in Gaishorn.

Ledinek shipped this 12 metre long press to Finland

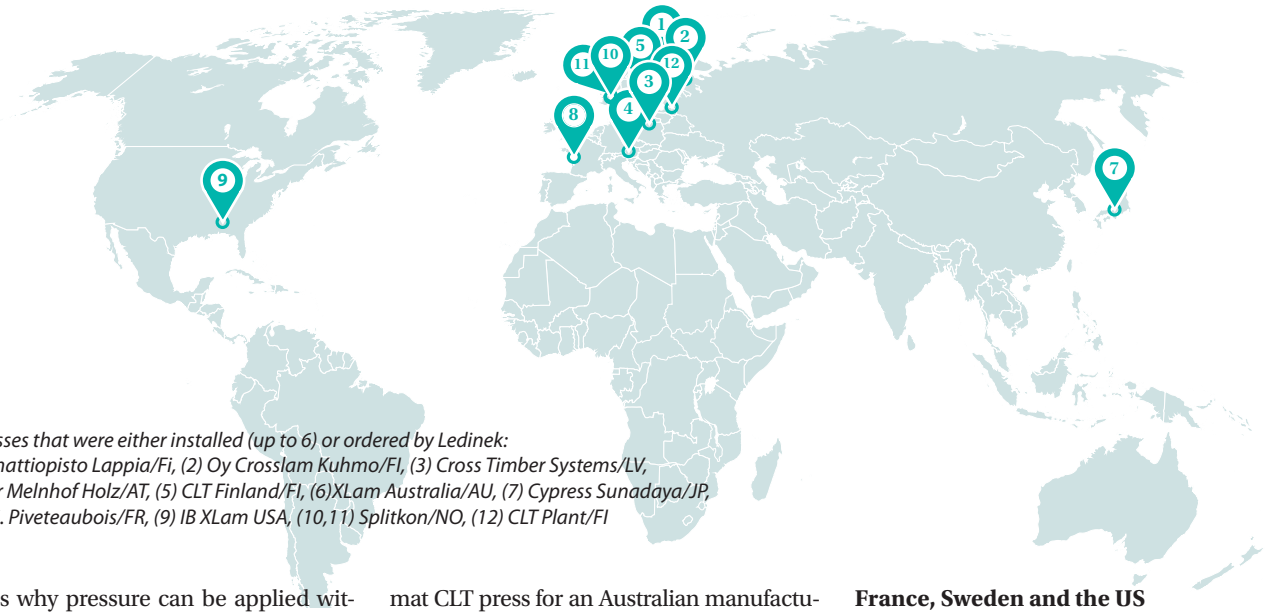
Faster and more flexible

After having delivered only four machines, Ledinek presented an improved version of the X-Press at the beginning of 2017. Particularly striking is the aluminium table on which the laminations that are to be glued are placed. In the construction of the press, Ledinek has opted for fixed glue nozzles and a moveable table. "This makes the application of the adhesive more precise. Also, the system can do without long cables and wires" explains Mlinaric. The challenge of this method lies in the reduction of the stacking time.

In terms of speed, the massive steel table, which had formerly been used, coupled with heavier press cakes could not compete with modern adhesive application systems. "Thanks to the lighter aluminium table, this no longer poses a problem", he tells us. Due to their higher energy consumption, the use of stronger drive motors has been out of the question. Inside the press, the aluminium table is placed on massive steel I-beams, as is customary at Ledinek.

The application of the pneumatic lateral pressure is done over the entire length and makes it possible to close the joints in all longitudinal laminations, even when more than one panel is in the press. Every lateral pressure element can be controlled individually,

Lateral pressure is applied over the entire length and pressure elements can be controlled individually



BSP presses that were either installed (up to 6) or ordered by Ledinek:
(1) Ammattiopisto Lappia/Fi, (2) Oy Crosslam Kuhmo/FI, (3) Cross Timber Systems/LV,
(4) Mayr Melnhof Holz/AT, (5) CLT Finland/FI, (6)XLam Australia/AU, (7) Cypress Sunadaya/JP,
(8) S.A.S. Piveteaubois/FR, (9) IB XLam USA, (10,11) Splitkon/NO, (12) CLT Plant/FI

which is why pressure can be applied without limit on panels of virtually any length. Depending on the type of press, wall panels of up to 16 metres in length can be produced. The height ranges from 2.45 to 3.55 metres with thicknesses of 60 to 360 millimetres. The maximum surface pressure is 0.8 N/mm².

Projects around the globe

The first X-Press of this generation was again shipped to Finland. CLT Finland Oy of Helsinki received a 12 metre long press last spring. Ledinek also delivered an adhesive application system and a Europlan planing line for laminations. Last summer, the Slovene company built a 16 metre long big-format CLT press for an Australian manufacturer. According to Ledinek, it was the first press of its kind that was shipped to Down Under. In this case, the company also provided the entire production line.

In the company's headquarters, an X-Press 12 was built for the Japanese manufacturer Cypress Sunadaya of Komatsu Saijo. According to Ledinek, it is only the second industrial CLT press in Japan. Parts of the press had been shipped to the country before, as they were exhibited at the Mokkiten Fair in Nagoya together with finger-jointing and planing machines. "We notice a growing interest in cross-laminated timber in Asia", comments Mlinaric.

France, Sweden and the US

After having delivered the press to Japan, the company processed orders of French manufacturer Piveteaubois (X-Press 16) and American company IB Xlam USA (X-Press 16). After that, Ledinek shipped two 16-metre presses to Splitkon in the Norwegian town of Amot and to the Finnish company CLT Plant of Kauhajoki.

At the moment, Mlinaric does not want to comment on other planned CLT projects. He only reveals so much: "We get a lot of requests for CLT presses and complete production lines. In the coming years, we will surely build a number of them." //

1

IB X-LAM USA

CLT *from* SYP

New type of wood for cross-laminated timber

A few months ago, IB X-Lam launched the first cross-laminated timber plant in the southeast of the USA. With a production capacity of 60,000 m³/yr it is one of the biggest plants of the whole continent and the only company in the world that produces CLT from southern yellow pine (SYP). Timber-Online paid the company a visit.

Günther Jauk, translated by Susanne Höfler Günther Jauk

Dothan, Alabama, is located right in the middle of the United States' best growing region for southern yellow pine (SYP). Furthermore, it takes less than two days by truck to reach most parts of the US population from there – and there is an international ferry port only two truck hours away. Excellent conditions for establishing a CLT factory for SYP in Dothan. The renowned timber enterprise International Beams (IB) recognized this potential and recently started producing CLT, glulam and industrial matting in the Southern city for the American market. The subsidiary goes by the name of IB X-Lam.

Old and new

Apart from sufficient levels of both raw materials and customers as well as the necessary wherewithal, operating a laminated timber plant also requires a lot of know-how. Next to company-internal sources, the Americans tapped Styrian CLT pioneer KLH's knowledge – within the framework of a well-defined cooperation, a lot of technical knowledge was transferred across the Atlantic. „You do not have to reinvent the wheel – KLH has been supporting us right from the beginning and helped us tackle many obstacles," as plant manager Karl Aicher puts it. But not only knowledge, also plant engineering is composed of American and European as well as old and new parts. A lot of the system's components like for instance the finger-jointing line or the glulam press come from bankruptcy assets of Canadian laminated timber producers.

New parts are, amongst other things, a scanner for lamella assessment, parts of the mechanization as well as the system's core piece: an X-Press cross-laminated timber press by Ledinek.

Maximum lumber yield

The raw material for IB X-Lam comes in the form of unsorted SYP packages which are graded according to strength in the plant. Each lamella is assigned to a certain product on basis of its technical properties. Wood of the highest grade is used for glulam top layers, medium grades are found in glulam middle layers and CLT top layers and elements of grade 3 are processed in CLT middle layers as well as industrial matting production. „This way, we can optimally utilize our raw material," Aicher explains the reasoning behind this approach. The distribution of lamellas is taken care of in the curing section downstream of the finger-jointing line.

Robust and flexible constructions

After curing, the CLT lamellas are conveyed into the new part of the system supplied by Ledinek. Glue application in the lay-up unit features a movable table that moves back and forth underneath the glue curtain. Oest supplied the application head and the adhesive used is Purbond HBX. After the lay-up unit, the press cake with up to nine layers and a height of up to 36 cm is brought into the X-Press, lay-up table included. Main pressure is applied from above via the transverse pressure tubes. Maximum top roll pressure is 0.8 N/mm² according to Ledinek.

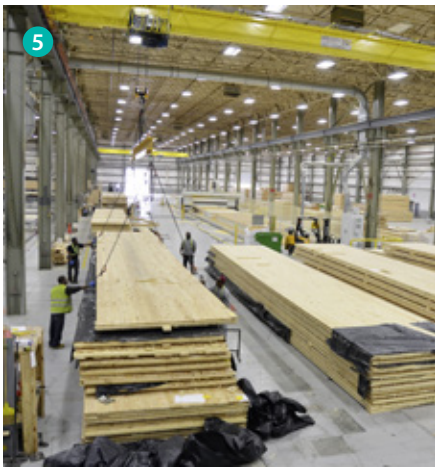
The pneumatic lateral pressure grid is 25 cm; every lateral pressure element can be

controlled individually. This enables optimal frontal pressure at practically any panel length. The maximum dimension for IB X-Lam panels is 3.55 by 16 m. For quality manager David Catta, the advantages of the X-Press are obvious: „Apart from the flexibility in terms of dimensions, it was the massive, robust construction that convinced us in particular. Furthermore, there is hardly any wastage thanks to the pneumatic pressurization." Besides the technical solution, Catta also praises the great collaboration: „Ledinek has been looking after us from the very first moment of contact and has always come on-site. Due to our close collaboration, also complications are and always have been sorted out quickly."

From mat to panel

After pressing, a Uniteam/Biesse CNC processing center divides the industrial mattings in elements of 16 by 8 feet (about 12 m²) and takes care of joining to finish the CLT panels. Currently, mattings are still the predominant product in Dothan – as for the construction CLT sector, Catta can already report of two large-scale projects after several smaller orders. First a bank in Texas, now elements for a building of Clemson university.

„The goal of course is to exclusively produce CLT for constructive timber construction. Thanks to industrial matting production, however, we can fully utilize our plants in the meantime and furthermore train our staff optimally." If everything goes according to plan, IB X-Lam wants to replace old system components in the upcoming years step by step. In addition, the company already left some room for another CLT press next to the already installed X-Press. Even if nothing is set in stone yet, a lot speaks in favor of an additional X-Press by Ledinek. //



1 ***For a few months now,*** *this X-Press from Ledinek has been in operation for International Beams in Dothan, Alabama/US*

2 ***The lay-up unit*** *is layering up to 36 cm high press cakes*

3 ***Dothan*** *is the first place worldwide where SYP is processed to cross-laminated timber*

4 ***The company*** *left enough space next to the installed X-Press for a potential second machine*

5 ***Lumber of lower qualities*** *is processed to industrial mattings*

6 ***Quality manager David Catta (left)*** *and plant manager Karl Aicher of the International Beams site in Dothan*

LEDINEK

Location: Hoče near Maribor/SI

Managing director: Gregor Ledinek

Products: Timber processing machines, patented Rotoles system, Stratoplan, Superplan, Superles, Europlan, Multiplan, Kontizink, rotary press, Eurozink, Flexipress, X-Press, X-Cut, complete KVH/glulam/CLT production solutions, engineering

IB X-LAM USA

Location: Dothan, Alabama/US

Owner/CEO: Bruno Lebel

Quality assurance manager: David Catta

Plant manager: Karl Aicher

Products: CLT, glulam, industrial matting

Capacity: 60,000 sm³/yr of CLT

Type of wood: SYP (southern yellow pine)

ODNOVA

Reduced to allrounders

Only three operators for compact universal machine in an impressive production hall

Sawmill and timber construction enterprise Odnova reflects the shift that the Polish timber construction sector is currently undergoing: Instead of construction timber, tailor-made timber construction order picking is booming. Imported standard laminated timber does not sufficiently fulfill customer's needs anymore – a universal laminated timber production line from Ledinek is closing this gap.

Gerd Ebner, translated by Susanne Höfler Gerd Ebner

For ten years now, Odnova has been joining in-house produced construction timber as well as laminated timber bought in addition with a Hundegger machine. „Repeatedly, we have been lacking special laminated timber dimensions and types that would have been necessary to deliver everything just in time," owner Jacek Smetek remembers. With the turn of the year, however, this changed: Since then, a unique allrounder system by Ledinek is taking care of the production of KVH, glulam as well as duo- and trio-lam in the new, bright laminated timber production hall.

Compact with minimal staff requirements

The Slovenian machine manufacturers have already installed similar systems elsewhere. What is special about the system at hand – apart from its compactness – are the implemented customer specifications: „Any redundant piece of wood in the system must be avoided – only what is really necessary should enter production." This calls for several feed-in options, omittance of redundant buffer storage as well as two discharge stations, amongst other things. Smetek, however, not only reflects the developments of Polish timber construction; furthermore, two pan-European phenomena have reached southern Poland: shortage of skilled workers as well as rising personnel costs. This is why the system currently runs with only two operators. In full operation, there will only be one per shift. The employees are supported with machine sorting and optional automatic operation.

All functions in the smallest of spaces

What enjoys top priority in other contexts is merely a side issue here: highest production output. In return, the production system had to fit into a space only measuring 60 by 20 m – which was achieved almost to the centimeter. „Hasslacher, Ladenburger, Abies, Hüttemann" – daughter Rozalia Smetek is listing all Central European suppliers collaborating with Odnova's purchasing department. In the future, their standard products are to be complemented by laminated timber produced in-house.

From 2020, the system will output around 10,000 m³ per year and shift in a one-shift operation. Main assortment is KVH, but glulam, duo- and trio-lam can also be produced. All volumes that the company does not need for its own timber construction and roof truss production will be marketed to the Polish domestic market.

Up to large dimensions

During Timber-Online's visit in Spytkowice, warehoused KVH raw products were being fed into the facilities. The products' dimensions are enormous. For KVH, dimensions up to 16 by 30 cm can be processed. For glulam, the maximum width is 40 cm, and maximum length 15 m. „Distances in the plant should be extremely short, but change of dimension still very quick – and this is something we were able to realize," Branko Mlinaric summarizes the situation. He was responsible for designing the plants at Ledinek. There was one task he dedicated a lot of attention to: Two spots have been created where goods can be fed in and discharged. Since one spot can take care of both, three stations for raw product handling suffice.

Strength grading included

A Joulin vacuum lifter is charging a total of three spots. Immediately downstream of the lifter, the sorting station follows. The Brookhuis moisture and strength meter makes a suggestion to the operator with regards to the potential purpose according to the quality at hand. However, the operator can overrule this sorting suggestion. „A strength grading is unusual in plants of this size. However, this way the customer kills two birds with one stone: It relieves operators and could, if wanted, even produce in automatic operation," Mlinaric explains.

After the sorting station, yet another special feature awaits: A measuring wheel is counting the running meters that have already been fed into the system. Mlinaric: „Once the required length is reached, surplus goods are immediately sorted out. Due to this concept, buffer storage does not need to be big. In fact, it is hardly existent at all."

Everything – the concept of the system, all machines, electronic engineering and controls as well as the entire project management – comes from Ledinek. However, also local suppliers were sought out: For producing the mechanization, for instance, M-Tec from Martin/SK was hired.

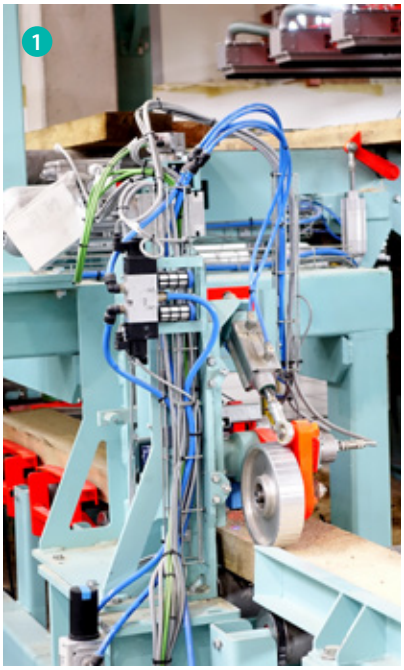
Six cycles, but large cross-sections

After sorting and marking, the X-Cut S190L with a cutting height of 180 mm follows. It is implementing the marking decisions of the operator. Subsequently, the optimized pieces are joined with a compact finger-jointing machine. For Smetek, six cycles per minute are enough. What is more important to him is that heights of up to 320 mm can be glued. „In the timber harvesting area, heavy timber accruals are increasing – Odnova must be able to process these dimensions," Mlinaric knows. For gluing, Jowat PU adhesive is used – in finger-jointing as well as surface gluing.

After a two-level intermediate buffer, the 6-spindle Europlan is finishing the KVH. Here, Mlinaric highlights the splitting unit. Where splitting is executed, these edges can also be chamfered. The main volume up to 15 m is stacked automatically. Two Rialex overhead cranes allow for complementing picked orders or destacking the press.

When producing glu-, duo- or trio-lam, the Europlan ensures optimal surfaces and calibration of the lamellas. The press cylinders of the glulam press can be adjusted manually. „Smetek's model allows for 50 cm increments in length of the maximally 15 m long glulam trusses. The smallest press enables the utilization of very quick adhesives."

An order picking station could be the next step. Currently, a forklift is transporting the finished goods to the adjacent joining hall where customer orders are completed. Following the market trend, Odnova will focus even more on processing parts lists for large-scale timber construction projects: by means of the imported standard products and now augmented by the glulam produced in-house. Surplus goods will be marketed in Poland. //



1 ***Measuring wheel:*** *Not even one unnecessary piece of raw material is to enter the system – the wheel counts the fed in running meters*

2 ***Satisfied with project handling:*** *Ledinek project manager Mlinarič as well as Jacek, Rozalia and Mateusz Smetek (from left to right)*

3 ***In the bright production hall that Odnova built itself:*** *View of the mechanization behind the planing mill, the glulam press with press cylinders every 50 cm to the left*

4 ***Sorting and marking station:*** *The operator is supported by an automatic strength and moisture control*

5 ***Finger jointing:*** *The optimized party are joined in the compact system*

LEDINEK

Location: Hoče near Maribor/SI

Managing director: Gregor Ledinek

Products: Timber processing machines, patented Rotoles system, Stratoplan, Superplan, Superles, Europlan, Multiplan, Kontizink, rotary press, Eurozink, Flexipress, X-Press, X-Cut, complete KVH/glulam/CLT production solutions, engineering

ODNOVA

Location: Spytkowice/PL (1)

Managing director: Jacek Smetek

Sawmill: 10,000 sm^3/yr (spruce)

Products: Lumber, timber trade, timber construction (CAD construction), contract joining

Laminated timber production: 10,000 m^3/yr (from 2020)

Laminated timber: KVH, glulam, duo-/trio-lam

KIRNBAUER HOLZINDUSTRIE

Expanding *the* laminated timber production

New duo and KVH factory to complete the product range

Since 2005 already, Kirnbauer Holzindustrie has been producing laminated timber at the Ternitz site. Originally, the factory was primarily meant for producing KVH but soon the company moved on to glulam and duo beams. To offer a complete laminated timber assortment of high quality, manager Franz Kirnbauer decided to invest in a new factory.

Martina Nöstler, translated by Susanne Höfler Martina Nöstler

Since 2005, Kirnbauer Holzindustrie's laminated timber production has been based in Ternitz. The factory outputs about 45,000 m³ of glulam and duo beams every year for the domestic market and exporting. When building the site 13 years ago, manager Franz Kirnbauer was actually also planning on producing KVH. Soon, however, glulam proved more profitable on this line. „KVH and large duo beams must be produced on a separate line," Kirnbauer explains. The opportunity presented itself to expand the premises in Ternitz – in the middle of an industrial park – to 85,000 m² so Kirnbauer decided to invest into a second production line that was specifically designed for duo beams and KVH. For this reason, he hired Kohlbacher from Langenwang to build two new halls one of which houses the production line while the other serves as loading hall. Operation in Ternitz was launched in September and the two-shift operation followed in January already.

Kirnbauer chose the following main suppliers for the new plant: The entire mechanization as well as the Lignopress press for producing duo and trio beams as well as glulam, if need be, come from H.I.T. from Ettringen/DE; Ledinek, Maribor/SL, delivered the cross-cut saw, the finger-jointing line as well as two planing mills. The master computer was supplied by Bidac, Kaltern/IT, the exhaustion system by Scheuch, Aurolzmünster, and the adhesive application by Oest, Freudenstadt/DE. „We already relied on H.I.T. during the reconstruction of our existing plant two years ago. The collaboration was impeccable. I particularly like their plant engineering and material-friendly transportation," Kirnbauer explains and adds: „Ledinek delivers robust machine engineering and offered us a great cost-benefit ratio. Furthermore, the proximity to Maribor is an advantage if we ever need repair parts at short notice."

In general, the factory is supposed to be operable with only four employees. The aim is to run production between the finger-jointing system and the laminated timber press unattended.

Thought-out procedure

H.I.T.'s part in the process starts with the feed-in of lumber packages: A fork-lift operator provides the required dimensions. A screen shows which package (type of wood, cross-section) he is to provide next. A vacuum lift de-stacks the lumber stack layer by layer and feeds the pieces to the employee who marks defects (such as knots or cracks). In cross transport another wood moisture measurement by Gann as well as a classification measuring follow. Boards that don't fit can be sorted out.

> „Glulam and thick duo beams cannot be efficiently produced on one and the same line. This is why we built the new plant."
> *Manager Franz Kirnbauer*

The H.I.T. mechanization conveys the boards for trimming via cross transport to the X-Cut cross-cut saw from Ledinek. Remaining packages can be discharged from the procedure and provided at a separate spot so that the fork-lift operator can pick them up at the next opportunity. In cross transport upstream of the cross-cut saw there furthermore is an extra buffer. „This is where goods of particularly high quality can be retained for processing at a later time," H.I.T. manager Franz Anton explains during the visit.

Trimming, finger-jointing, gluing, pressing

Ledinek's X-Cut is particularly robust and handles the thick cross-section of KVH with ease. Its feed performance is 190 m/min. Remnants automatically fall into a waste chute leading to a wood residue disposal. Trimmed woods are fed to the finger-jointing line by means of a cross transport. Ledinek supplied Kirnbauer with a Eurozink Compact with a performance of six cycles per minute.

What is special about this system: The processing steps finger-jointing, gluing and pressing are taken care of in one pass. This means that two pieces of wood – in one case its tail and in the other its head – are clamped precisely in position. Then, the milling head with double milling unit goes over them from top to bottom. In that same upward movement, the contact-free glue application is taken care of. Subsequently, the front board is clamped and the back board is pushing onto the front one – creating an endless cycle. Depending on the order specifications, a buck saw will afterwards trim the finger-jointed lamella to the required length.

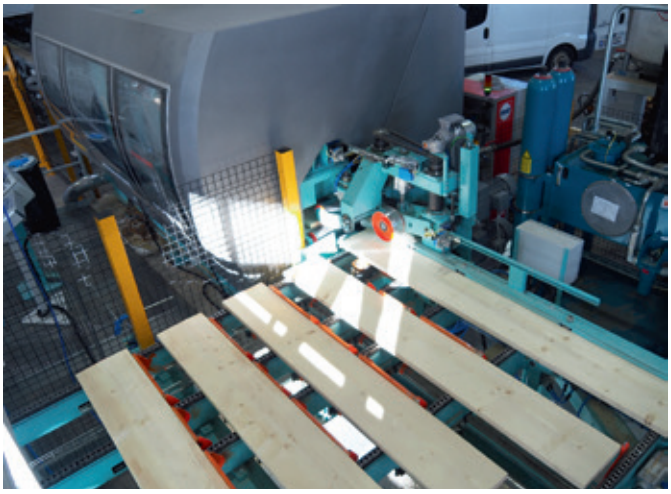
A major advantage of this technique is the small space requirement. „Furthermore, setting the machine to a new dimension is done in no time," Bernhard Fandl, responsible for sales at Ledinek, confirms. None of the processing steps require any re-clamping. The Eurozink Compact has a fixed guide ruler which precisely aligns the side of the board with zero and makes a positioning of the short end redundant.

Four levels as resting areas

For the curing phase, the finger-jointed lamellas are brought to one of the four levels of H.I.T. During the tour through the new laminated timber plant, Anton is highlighting the

An employee examines the lumber and marks undesired defects ...

… which the robust X-Cut cross-cut saw is subsequently trimming out



The trimmed woods are fed into the Eurozink Compact system

Kirnbauer's Ledinek Eurozink Compact has a performance of six cycles per minute – milling, gluing and pressing are taken care of in one single pass

careful wood transport:The lamellas are brought to four levels by means of an elevator. In doing so, they are not simply pushed onto a paternoster lift but rather gently hoisted – similar to stacker arms in packaging. The same principle also applies to the relocation of cured lamellas in the further processing process.

Parting ways

Here is where KVH and the lamellas for duo beams are parting ways: KVH goes on to the finished planing unit from Ledinek, a Europlan machine. Lamellas for duo beams, on the other hand, stay on the top floor. First they are put through a Ledinek planing mill (a Europlan as well) to obtain a clean surface. Afterwards, a long H.I.T. cross transport with an integrated turning station takes the goods to the Oest surface gluing.

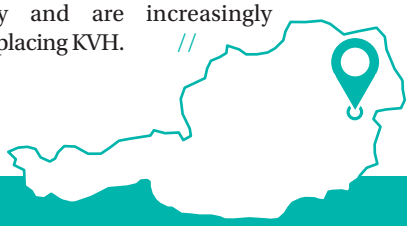
After truss formation, the glued and loose lamellas are brought to the Lignopress by H.I.T. which is pressing the wood from the top almost offset-free by means of side thrusts and press shoes. „The press force is considerably higher than in comparable systems. This is how we achieve reduced glue use", Anton explains. Just like the KVH, the cured duo beams are passing through the Ledinek Europlan at the lowest level. The maximum cross-sections that the new laminated timber factory can handle are 280 by 600 mm. This is also the dimension that the Europlan planer must take on.

Trimming several pieces at once

KVH as well as duo beams are passing through two conventional patching stations by H.I.T. where one employee deals with two sides of the wood. The cross-cut saw with collet for order picking from H.I.T. can process several pieces at the same time with its 600 mm of width and trims the laminated timber to the desired length. A stacking device makes packages or employees are assembling them by means of a vacuum lifter. Finished packages can subsequently be stretch-wrapped.

Two Europlan planing machines create clean surfaces for lamellas on the one hand and act as finish planers on the other hand

Kirnbauer feels well-equipped for the future with the new laminated timber plant. Especially duo beams in both visual and industrial quality – also in larger dimensions – are in high demand due to their form stability and are increasingly replacing KVH. //



KIRNBAUER HOLZINDUSTRIE

Location: Ternitz/AT

Managing director: Franz Kirnbauer

Premises: 85,000 m²

Employees: 38

Production: 45,000 m³/yr of glulam (old plant), 30,000 m³/yr KVH and duo beams (new plant)

Types of wood: 80 % spruce, 20 % pine

SUPPLIERS DUO/KVH PLANT

Mechanization, floor warehouse, order picking, press: H.I.T., Ettringen/DE

Master computer: Bidac, Kaltern/IT

Cross-cut saw, finger jointing and planing units: Ledinek, Maribor/SI

Glue application: Oest, Freudenstadt/DE

Adhesive: Henkel Engineered Wood, Sempach-Station/CH

A. BAUMGARTNER

Glue-laminated timber made of Siberian larch

A timber merchant becomes his own supplier and uses machines which have been tailored to his new business

It is unusual for a timber merchant to start his own production, but then, Albert Baumgartner is not known in the industry for his conventional style. In a few weeks, the Carinthian entrepreneur will start producing KVH and glulam in Sollenau in Lower Austria.

Günther Jauk, translated by Eva Guzely Günther Jauk

Nowadays, speed and flexibility are key factors for the success of any construction project. This is true not only for timber construction companies working on the construction site, but also for manufacturers. "The time span from order to delivery gets shorter and shorter. Also, there is a clear trend towards order picking", says Albert Baumgartner. The unconventional but very successful timber merchant delivers products primarily to clients in Vienna and its wider area.

> "The time from order to delivery is becoming shorter and shorter."
> *Albert Baumgartner*

Delivery times that he considered too long prompted Baumgartner to start his own production. After start-up in a few weeks, he wants to deliver solid structural wood (KVH) within two days and glulam within three days of ordering.

What distinguishes Baumgartner from other manufacturers is the choice of wood types. Apart from standard indigenous coniferous wood, Baumgartner focuses on Siberian larch. "Thanks to its mechanical and optical properties, Siberian larch is especially suitable for laminated timber, glulam beams and KVH products. When it comes to the indigenous larch, there are lacks in quality and availability", tells us the entrepreneur who is currently making an effort to obtain a certification from Holzforschung Austria for his product.

Baumgartner is one of the biggest importers of Siberian larch. On his production site, a sawmill formerly owned by Schweighofer/Stora Enso, on average 30,000 m³ of this wood type are stored. Baumgartner bought the 25-hectare-site in 2016.

Flexible production

After the decision for a combined production line for glulam and KVH had been made, the search for suitable machines began. "We wanted a line for as many products as possible without sacrificing throughput", explains Baumgartner. In the end, he opted for Slovene machine manufacturer Ledinek, specialised in glue-laminated timber, who designed a machine concept for KVH, duolam and triolam beams as well as glulam. In addition to that, non-laminated solid wood elements can be inserted in front of the planing machine. "We knew about the quality of Ledinek machines and lines. The company's experts found the perfect solution for us", says Baumgartner with regard to his decision to purchase.

> "Siberian larch is especially suitable for glulam and solid structural timber products."
> *Albert Baumgartner*

After quality evaluation, the raw laminations pass through the X-Cut cross cut saw and on to one of the two Eurozink finger-jointing machines. According to Ledinek, the maximum performance is six pieces per minute and the machine's output is 50,000 m³ of solid structural wood a year in a three-shift operation. Widths range from 75 to 330 mm and thicknesses from 20 to 170 mm. After milling and gluing, the elements, which are up to 16 metres long, are brought in the four-storey curing warehouse.

Once the PU-adhesive is completely cured, the wood enters the Superplan 400 planing line. Prior to this step, it is possible to use a band saw for the separation of the ele-

1

ments according to their respective length. Inside the planing machine, two horizontal shafts and four connectable vertical profiling units offer various possibilities in terms of woodworking. "For example, it is possible to produce finished block house planks or ceiling beams without changing tools", explains Felix Voglhofer, Key Account Manager at Ledinek.

20,000 m³ of glulam a year

After leaving the planing machine, KVH and glulam go their separate ways. If necessary, the solid structural wood is cut to a precise length and, depending on the client's wishes, single pieces or complete packages are wrapped in plastic foil. As to the glulam, the adhesive is applied on the laminations which are then transformed into glulam in the Maxipress. After curing in another warehouse, the wood undergoes cosmetic corrections if necessary and then enters the planing line once again. According to Ledinek, the glulam-line's production capacity is 15,000 to 20,000 m³ a year. Voglhofer is satisfied with the result: "Thanks to the generous and open spaces which Baumgartner left us in the planning phase, we were able to create a special machine layout in Sollenau."

Available in all dimensions

Baumgartner sees his warehouse as a competitive edge compared to other manufacturers. "In our air-conditioned halls, sufficient quantities of all relevant wood types, especially Siberian larch, are available in all raw dimensions, and they are dried and pre-sorted."

For the entrepreneur, the production site with its annual capacity of 50,000 m³ of KVH might only be the first step. Ledinek has designed the machines in such a way that by including a third finger-jointing machine, the annual capacity can be raised to 75,000 m³. Also, sufficient space has been left for an additional Rotoles planing machine for laminations.

Furthermore, the production site offers enough room for other production lines. "As soon as the machines are running, we are going to analyse which other products might be needed on the market. Further investments are quite possible", concludes Baumgartner.

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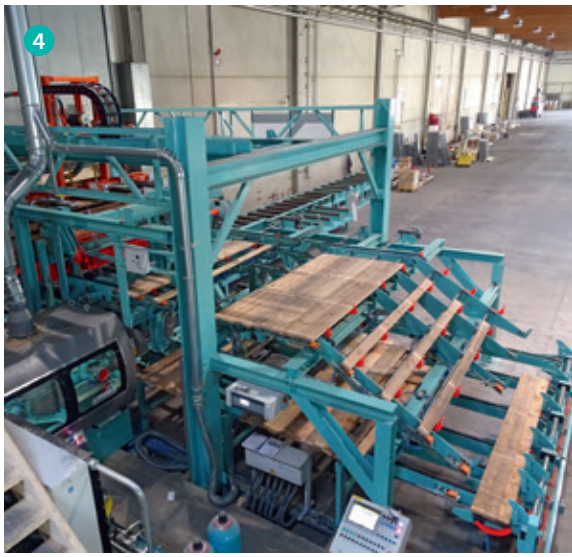


1. ***The Baumgartner team*** *as well as Ledinek's Key Accountant Manager Felix Voglhofer (second from right) and technician Bojan Tomazic (right) auf die Inbetriebnahme*
2. ***The combined production line for KVH*** *and glulam, complete with two Eurozink finger-jointing machines, has an annual production capacity of 50,000 m³ of KVH*
3. ***The Superplan 400 planing unit*** *for CLT and KVH*
4. ***Before finger jointing,*** *an X-Cut cross-cut-saw is cutting out flaws*
5. ***In Ledinek's Maxipress,*** *the laminations are made into glulam*

LEDINEK

New possibilities

Inauguration of the assembly and loading hall and the office building

Ledinek, based in Maribor/SI, is not an ordinary company. As Europe's only machine supplier, it can offer complete processing solutions, like CLT systems. It is thus not surprising that Ledinek's order books are full. In order to deliver machines and systems in time and to be able to accept new orders, the company's headquarters have been massively expanded. Timber-Online attended the festivities.

Gerd Ebner, translated by Eva Guzely Gerd Ebner (3), Ledinek (3)

For more than 20 years, I've been going to Maribor. You never know exactly what you will find at the Slovenian machine manufacturing company. During one of my first visits, the company proudly showed the plaque for the most innovative new product on a US trade fair. This was the Rotoles, a new planing machine, which refines and precisely calibrates surfaces rather than planing them in the traditional sense.

Long-term customer relationships

For Ledinek, a pioneering installation at Systemholz in Gaishorn symbolises the first steps in the field of finger-jointing. It speaks for itself that the former owner of Systemholz Heinz Dominici came all the way from South Africa to Maribor at the end of September in order to attend the festivities surrounding the inauguration.

Within few years, Ledinek extended its product range, offering not only planing and finger-jointing technology but also pressing technology in the form of the new X-Press. As a general contractor, this allowed the Slovenian company to take on the production of glulam and CLT for example. It goes without saying that the manufacturing of those machines and systems requires space. In the case of Ledinek, even more space is needed since its systems are not exactly small. Whenever the steel price goes up, it is very bad for Ledinek since the company needs a lot of it.

The mayor of Hoce explained how difficult it was to rezone the area where the new loading hall (1,100 m²), construction hall (1,700 m²) and the new office building (3 x 230 m²) were inaugurated on 28 September 2018. The company had to put up with a two-year delay.

Testing and delivering on time

The new facilities were built in order to reduce the wait time for its customers. "From now on, our installations will be completed on time more often. Finally we have the space to assemble and test everything", says head of sales Robert Mlinaric. His order book is full with international CLT projects. Hardly has the latest project started – Piveteaubois – when the company moves on to the next: Splitkon. The Norwegian newcomer is going to use two presses and a melamine adhesive.

Splitkon will be the biggest CLT installation for Ledinek. "The smallest economically viable CLT system we offer was ordered by Södra", adds Mlinaric. "The Swedish company will start producing 70,000 m³ per year and shift. After this test phase, another production line could follow."

> „Our motto is to never stand still."
>
> *The company's founder Pavel Ledinek*

> „The production site's expansion is an important milestone for us. Now, we can offer our customers a better service."
>
> *Managing director Gregor Ledinek*

Pressing technology soon on five continents

Ledinek's X-Press systems are being used in seven countries on four continents. If you add the systems in the order books, the Slovenian company boasts a total of 16 presses on five continents.

As a result, the inaugural festivities in Maribor were attended by a very diverse audience. Managing director Gregor Ledinek explained to his guests that the new halls represent milestones in the production site's 26-year history: "We have more space for manufacturing and we are able to do comprehensive test runs."

A private company as a sensation

Ledinek has never been an ordinary company and its founder Pavel Ledinek is a symbol for this. When he founded his business in 1986, it was quite the sensation since it was the first private company in the Communist world. Whoever manages to start a business in such an environment is capable of a lot more. What began as a small workshop has become one of the world's leading companies in the woodworking sector.

Ledinek's 380 employees also celebrated this milestone. One of the newest members of the company's team is Armin von Grebmer who supports international sales and is expected to bring expertise in an area which is especially crucial for complete systems, i.e. the interconnection between all system components.

Third generation at the ready

Ledinek is a family company. The celebrations were also an opportunity to meet the third generation of machine manufacturers. 20-year-old Andrej Ledinek studies Mechanical Engineering and Business Economics in Graz and could follow in the big footsteps of his predecessors one day. //

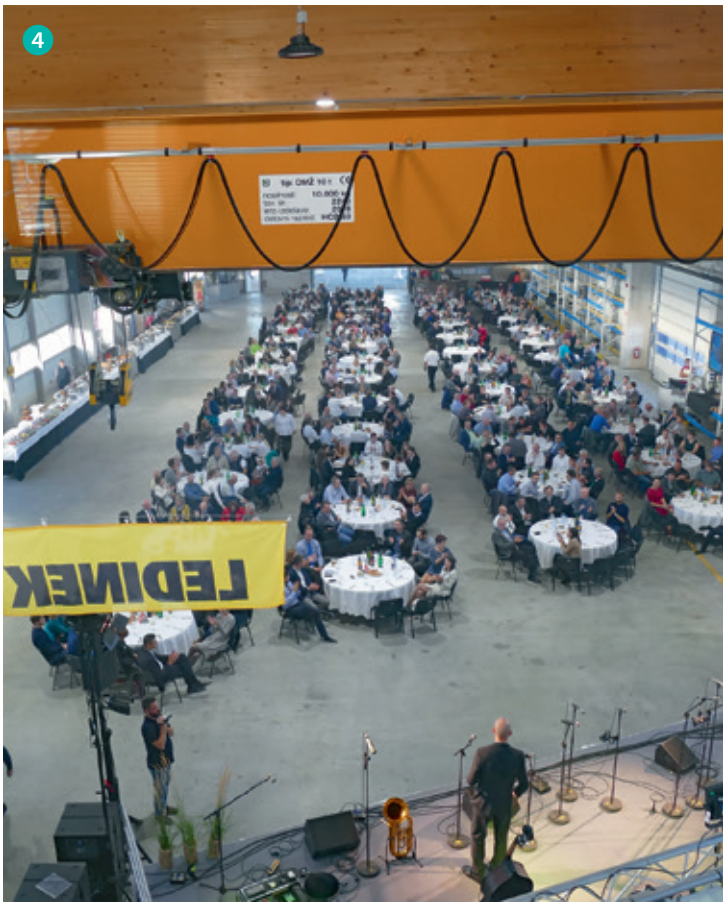
LEDINEK

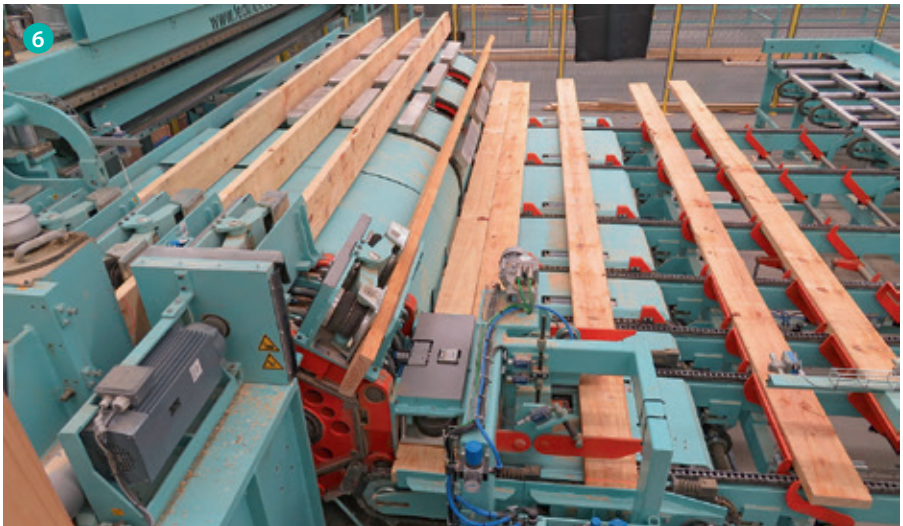
Established: 1967

Based in: Hoce near Maribor/SI

Managing directors: Gregor and Pavel Ledinek

Products: woodworking machines, patented Rotoles system, Stratoplan, Superplan, Superles, Europlan, Multiplan, Kontizink, rotation press, Eurozink, Flexipress, X-Press, X-Cut, complete solutions for the production of solid structural wood/glulam/CLT, engineering





1 ***A solemn moment:*** *Managing director Gregor Ledinek cuts the ribbon at the inauguration of the new 1,700 m²-assembly hall*

2 ***At the inauguration,*** *Pavel Ledinek told his guests about how everything started out as a small business and over the years became a 380-employee company*

3 ***Three generations of Ledinek:*** *Gregor, Pavel and Andrej (from left)*

4 ***The 1,700 m² big production hall offers lots of space:*** *On 28 September 2018, 500 people attended the inauguration; now, production has already started*

5 ***Bestseller:*** *The CLT press X-Press will soon be in use on five continents*

6 ***From now on,*** *complete systems can be assembled and tested in the new hall*

From the trade fair directly to the client: This Superles 1300 will be in use at Johann Pabst Holzindustrie

LEDINEK

Planing, finger-jointing, pressing …

Slovenian glue-laminated timber experts successfully presented themselves in Klagenfurt

At Ledinek's stand at the International Wood Fair in Klagenfurt you could see very satisfied faces. Business is going well and demand for Ledineks planing and glue-laminated timber systems remains high. Apart from newly or further developed solutions, the experts for complete solutions also introduced a new key team member to the visitors.

Günther Jauk, translated by Eva Guzely Günther Jauk

The centerpiece of Ledinek's stand in Klagenfurt was a Superles 1300 planing machine. At the end of the fair, this exhibit with the type designation 12V-4F-S25 will be transported directly to Johann Pabst Holzindustrie in Zeltweg. The massive and flexible machine will give the newest member of the Pabst product range, i.e. "Pabst CLT" (1.25 meter wide CLT elements), the desired profile.

Cross-laminated timber was the theme at Ledinek's stand. Apart from big CLT projects around the globe, the Slovenian company is continuously working to further develop its system components and to increase process safety. Ledinek representative Bernhard Fandl told visitors about the new developments in the section before the laying station, which will increase the system's stability, and this will in turn have a considerable effect on overall performance.

For the entire range of glue-laminated timber

Other than successful CLT projects in Japan, France, Australia and the US, Key Account Manager Felix Voglhofer told us about numerous systems and further developments for glulam and solid structural wood, for example a newly developed press for narrow side gluing. With this press, Ledinek paid particular attention to flexibility in the changing of lengths which should be possible without sacrificing the system's performance. The result – the first Unipress 16 with ten infeed points for 16-meter laminations – has been put into operation at Best Wood Schneider in Eberhardzell/DE a few weeks ago.

Competent new team member

For the first time, visitors of the International Wood Fair could meet Armin von Grebmer at Ledinek's stand. With 24 years of experience in the sector, von Grebmer will support the sales and product management departments, especially in the areas optimization and automation. The reasons why South Tyrolean von Grebmer chose to work for Ledinek sound understandable. "Ledinek has excellent engineers who are always interested in finding solutions quickly. With their innovative know how, they are the only suppliers of complete glulam and CLT systems in the market, and they are also present across the globe." //

Armin von Grebmer (second from left) with his new colleagues Bernhard Fandl, Gregor Ledinek and Felix Voglhofer (from left) in Klagenfurt

Concentrated expertise in glue-laminated timber

Slovenian systems specialists continue to evolve

If you put all of Ledinek's X-Press CLT presses in a row, they would add up to a length of more than 120 meters. If you also consider the machines and systems which have been ordered but not yet built, the row would be over 230 meters long. Apart from numerous projects and innovations on the CLT market, the Slovenian company also carries out some interesting projects in the glulam and solid structural wood sector.

Ledinek's sales representative Bernhard Fandl described orders as "very satisfactory" before the International Wood Fair in Klagenfurt. He refers not only to the high interest in CLT production lines, but also to numerous systems and further developments for glulam elements and solid structural wood.

Ledinek continuously makes an effort to expand its product range and adapt existing machines to market requirements. A newly developed press for narrow side gluing is a good example. With this press, Ledinek paid particular attention to flexibility in the changing of lengths which should be possible without sacrificing the system's performance. The result – the first Unipress 16 with ten infeed points for 16-meter laminations – has been put into operation at Best Wood Schneider in Eberhardzell/DE a few weeks ago.

Another exciting project is the development of a new generation of cross-cut saws for cutting out defects and knots. The X-Cut 400 is currently being tested in the company's headquarters in Maribor and prepared for different uses. "The first test results are very promising. The new model will be used before our high-performance Kontizink finger-jointing machine and will serve as a saw for crosswise layers as well", tell us Fandl.

As to planing, one of Ledinek's core competencies, the sales representative speaks about "a few replacement investments in the areas of glulam and solid structural wood" and about new systems which are being equipped.

Process safety as a decisive criterion

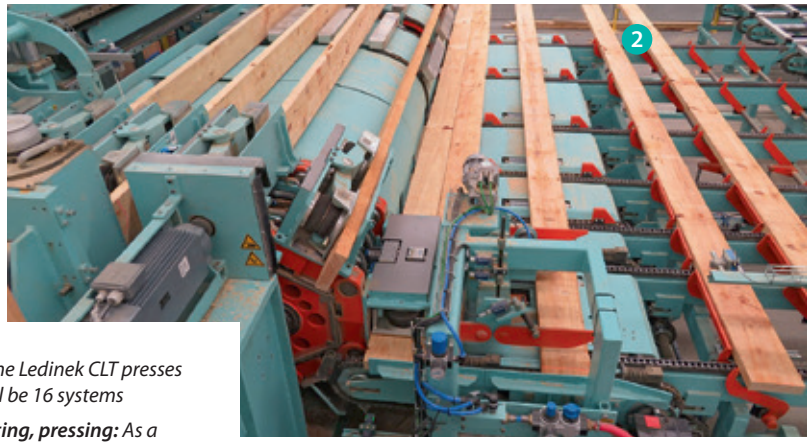
Other than the continuous further development of big system components, like the X-Press, Ledinek is also dedicated to process safety. "The laying station is without doubt the pace-setting component of every CLT production site. Thanks to one of our latest developments, process safety and stability of this crucial component will increase, which will have a considerable effect on the overall performance of the production lines", says Fandl with regard to the future.

Parallel to the further development of its production systems, Ledinek also keeps updating the X-Lam Manager, a management system for the production of CLT. The company also delivers specially tailored management systems for planing, solid structural wood and glulam producing systems as well as for administrative systems for planing tools.

Impressive track record

In the CLT sector, Ledinek already boasts nine installed X-Presses in seven countries on four different continents. If you add the machines and systems in the order books, you reach a total of 16 presses on five continents.

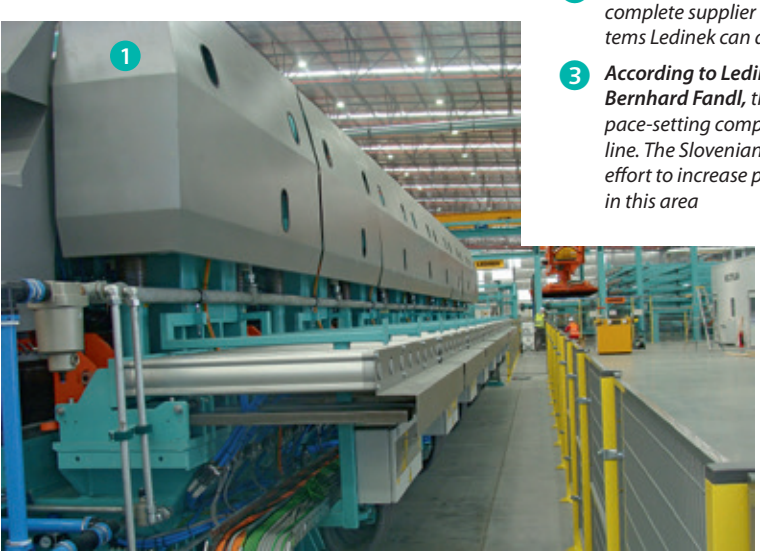
With most projects, the Slovenian company is not only the press manufacturer but the general contractor. "When it comes to complete projects, we can draw on our concentrated expertise and experience in all sections, like planing, finger-jointing or pressing. As the only complete supplier in the CLT sector, we will surely continue to expand this role in the coming years", confirms Fandl. //



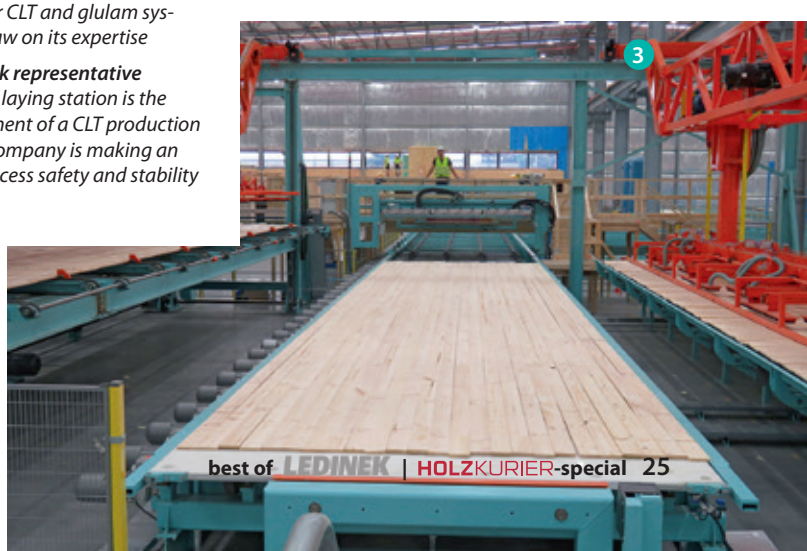
1 ***Across the globe,*** *nine Ledinek CLT presses are in use; soon it will be 16 systems*

2 ***Planing, finger-jointing, pressing:*** *As a complete supplier for CLT and glulam systems Ledinek can draw on its expertise*

3 ***According to Ledinek representative Bernhard Fandl,*** *the laying station is the pace-setting component of a CLT production line. The Slovenian company is making an effort to increase process safety and stability in this area*



Bildquelle: Ledinek



Hard to top

A great year for machine supplier thanks to cross-laminated timber

Machines and systems supplier Ledinek from Hoce/SI is convinced that 2017 is a year which will be hard to top. This year, cross-laminated timber has become a worldwide bestseller. Demand on the global market confirmed the trend of developing CLT products which meet the requirements of the residential construction sector. "We recognized the market requirements early enough and focused on CLT technology", proudly comments senior managing director Pavel Ledinek. "We receive requests for CLT systems from all over the world which indicates that timber constructions are on the advance on an international level", adds head of sales Robert Mlinaric. Numerous active projects are about to be finished. The CLT market will thus continue to grow considerably.

One-stop shop – CLT hype

Ledinek sees one clear trend: Investors increasingly opt for complete solutions provided by one supplier. For example, the Slovenian machine manufacturer's first complete CLT project (from the infeed of the raw laminations to the finished and polished CLT element which is cut with a CNC system) was put into operation in Latvia in 2015. Since then, more CLT systems and individual machines have been sold. For an Austrian client, Ledinek delivered the first complete sorting and planing line with the accompanying mechanization – from the formation of the packages to the bundling, including the transfer of package data to the warehouse management program.

Furthermore, a complete Ledinek system is currently being put into operation in Australia. The next one will soon be in use in Japan. Big, complete CLT production lines will follow in France, Norway and Sweden. Ledinek also delivers more X-Presses for the production of CLT to the US and Finland.

Many other projects

A lot is going on at Ledinek apart from the CLT hype. The various models of the new Multiplan are selling well. According to Ledinek, the Stratoplan VA, with its active floating spindles and wood-saving thickness-thickness planing system, also arouses interest among customers who want to save raw material. The centerpiece of every high-performance glue-laminated timber production line, however, is the finger-jointing machine. In this area, Ledinek set new standards with the Kontizink M/L. "Right now, no comparable system is available on the market", confirms Mlinaric. The Kontizink makes it possible to mill up to 150 single-pieces per minute with lengths from 0.5 to 4 meters, and is also equipped with a continuously working chain press with the patented Kontizink pressure buildup system. A flying high-performance cross-cut saw with vises on both sides and a continuous support of the fresh finger joints guarantees high quality and a precise cutting of the desired laminations. The new Kontizink generation is available as model M for panel widths of up to 160 mm and as model L for widths of up to 250 mm. Ledinek builds both machines with vertical and horizontal finger-jointing. The performance reaches, in gradations, up to 180 meters per minute.

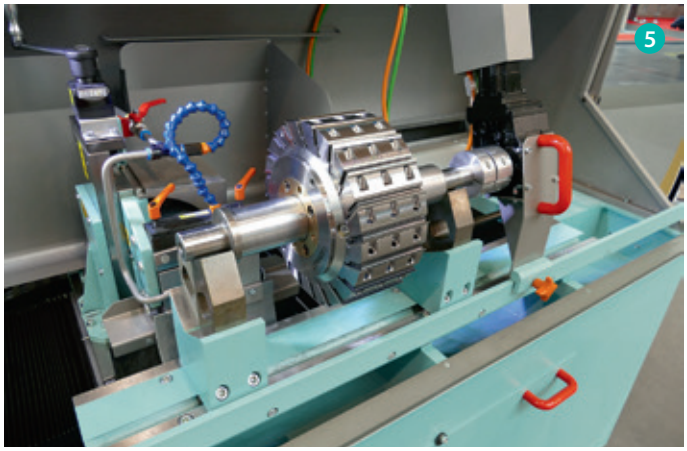
Prototype put into operation successfully

This year, Ledinek was also very active on the German market. Again, the Slovenian company delivered a few systems for the production of special glulam and CLT construction elements. The system at Schneider Holzwerk in Eberhardzell is being put into operation. "Here, we were able to set new standards with the prototype of a continuously working cold edge gluing machine", explains Mlinaric. The Unipress 16 is a novelty on the market. It can press up to 20 boards per minute in continuous through-feed. The result is an endless glue-laminated panel which can be cut to the desired width after leaving the machine, thereby reducing waste to a minimum during the production of CLT ceiling elements. The Unipress's design allows for an easy and loss-free change of lengths according to the requirements of the following production steps. At Schneider Holzwerke, a Kontizink M with a production capacity of 180 meters per minute is being put into operation as well.

Other projects are in the process of being delivered. Examples listed by Mlinaric include the deliveries to Schmelter in the Sauerland region and to Asta Holzwerk in Ziemetshausen, a new major customer of Ledinek.

"Interest in our globally patented Rotoles machines is growing as well", says Mlinaric with delight. Ledinek also sold a Rotoplast 1300 D to India.

Following the market expansion and the continuous development, Ledinek had to opt for a new investment. Next to the existing production sites in Hoce, a new modern development and production hall with a roof made of glulam elements is being built. These elements are produced by Hasslacher with a Ledinek system. "At the time of the inauguration of the new hall we also celebrate 50 years of machine construction and the 25-year anniversary of Ledinek Engineering's foundation", says managing director Gregor Ledinek. //



1 ***Kontizink L:*** *vertical finger-jointing with continuous single-piece milling*
2 ***Installation*** *of a Ledinek Stratoplan planing machine*
3 ***Ledinek*** *exhibited this Rotoles 400 D-S at the Ligna fair*
4 ***Ledinek*** *developed the X-Press for the production of CLT*
5 ***The fully automatic GML*** *grinding machine for tools*
6 ***Chain press*** *with the patented Kontizink pressure buildup system*
7 ***High-performance stacking machine*** *in a sorting and planing line*

LEDINEK

Founded in: 1908

Location: Hoce bei Maribor/SI

Managing Director: Gregor Ledinek

Products: woodworking machines, patented Rotoles system, Stratoplan, Superplan, Superles, Europlan, Multiplan, Kontizink, rotation press, Eurozink, Flexipress, X-Press, X-Cut, complete solutions for the production of solid structural wood/ glulam/CLT, engineering

Bildquelle: Ledinek

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