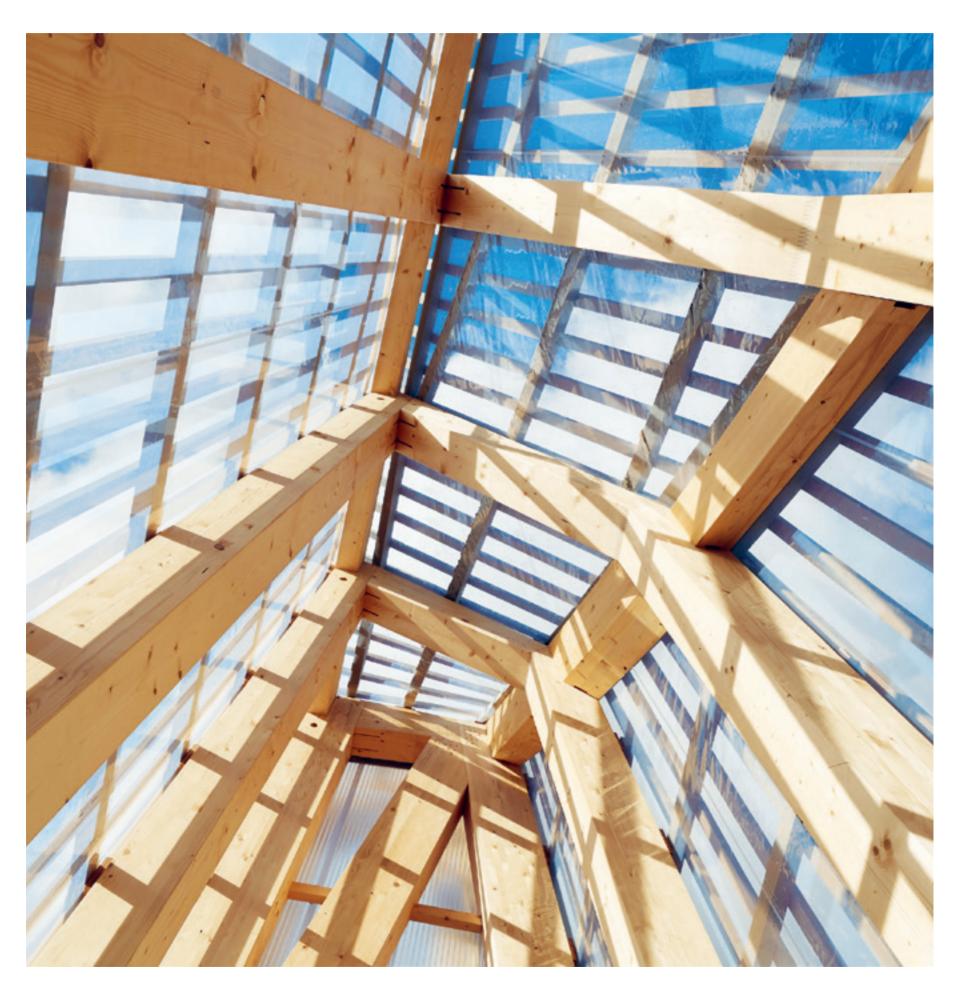
Nº11





Free Form//Underwater wood construction in South Korea
Modular constructions//A pilot project for the school of tomorrow
Event construction//Zurich E-Prix banks on sustainability
Jobs in timber construction//Five specialists and their career paths

02/EDITORIAL



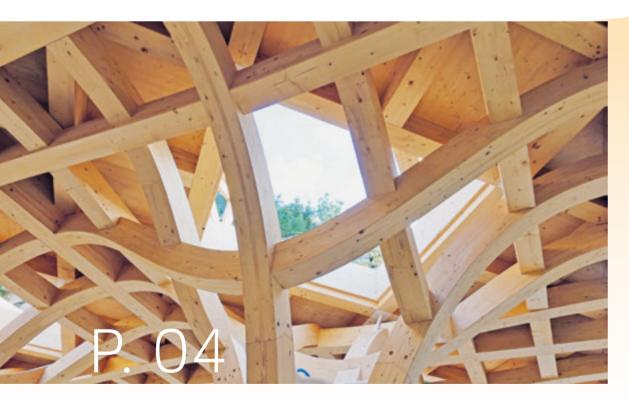
Dear Customers, Business Partners and Friends of Timber Construction

Timber construction isn't a trend - it's a key aspect of sustainable development. The world's most renowned architects have been working with wood for a long time now and are bringing it back to urban centres. Modern technologies and building processes in timber construction are as future oriented as the material itself. They enable quick and accurate construction, facilitate work on site with a high level of prefabrication and open up new prospects for clients, architects and planners.

Over the past year, we have once again been able to create extraordinary and spectacular timber constructions - in places like the UK and South Korea and, for the most part, in Switzerland. Incidentally, like our Austrian neighbours, we Swiss are leaders in timber construction. Visiting groups from all over the world attest to this time and again. On the following pages, you can see for yourself why, 143 years on, we're still fascinated with wood - and Swiss wood in particular.

We look forward to moving into the future with you, our valued customers and partners. It's about making construction projects happen. But it's also about working together to develop digital tools in planning and execution processes. Our expertise, our reliable services and our committed, skilled employees are what is needed to make this happen. Just like the mutual trust and equal partnership with you, for which we would like to offer our warmest thanks.

11/Mmmm Katharina Lehmann



Major Free Form project

Yeoju, part two: Grand Hall, Learning and Recreation Centre. apartment buildings

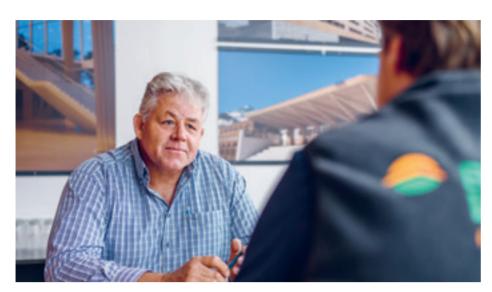
Free Form challenge

What actually is parametric planning?



GC project

GC project = Blumer-Lehmann AG was the general contractor for these projects



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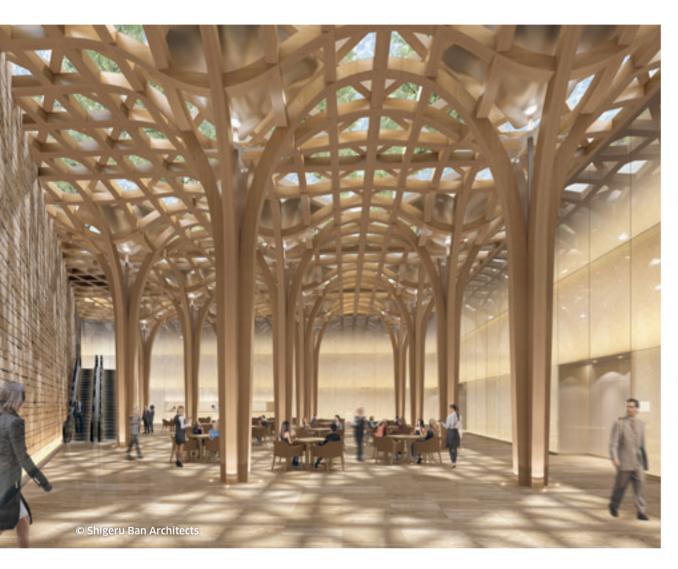
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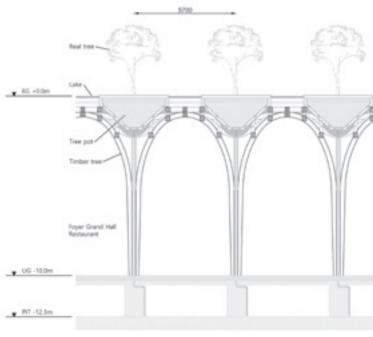
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4/Free Form

Major project in South Korea Our Free Form project expertise





A few things have changed in the ten years since our installation team flew to Asia for the first time. In 2018, our destination was once again the 'Haesley Nine Bridges' golf club in Yeoju, South Korea. Telecommunications haven't just improved reachability and opportunities for organisation and orientation. Our experience in digital planning and producing Free Form constructions, as well as the technical possibilities in production, have developed considerably.



From September 2018 to March 2019, the Blumer Lehmann team is setting up six buildings in addition to the existing clubhouse. They include the Grand Hall, an underground foyer and restaurant with 9 m high pillars in a Free Form construction, the three Condo A apartment buildings, a Learning Centre and a Recreation Centre. All additional buildings were once again designed by star Japanese architect Shigeru Ban. The Swiss company Création Holz acted as building consultant. Along with planning partners Design-to-Production and SJB Kempter Fitze, Blumer Lehmann is in charge of

all conceptual and wood construction planning, production and installation.

Free Form from a different angle

You might call the view from the Grand Hall up to the lake with trees on the glass roof spectacular. From outside, 22 large potted plants decorate the construction. Sixteen stand in a 10 cm deep pool of water. In the hall, 22 Free Form wooden pillars hold up the support structure of the glass roof. The heavy load of the roof and the water are the reasons behind the design of the Free Form cross-section, defining the struc-

tural conditions of the support structure. Just like in the existing clubhouse, the natural wood material makes an overwhelming emotional impact on visitors to the underground space.

Apartments produced on site

Joinery, cutting to size and finishing for the floor and ceiling elements in the three apartment buildings were carried out at our Gossau production facility. Due to the large quantity of material, the elements were put together on site in a tent. This occupied four of our team, while another four took charge of installation.





Planning was based on the 3D implementation model. Our wood construction planning team was responsible for drawing up the detailed pre-installation and installation plans and production data. One striking aspect of the building is the six double roof windows with a Free Form design. Connecting the wood construction to the many glass frontages was a challenging aspect of planning.

Step-by-step production in Switzerland

The two structures being built in early 2019 – the Learning Centre and Recreation Centre – involve overhanging, oblique timber roof constructions. The two roofs are placed on a pure steel construction on one side and a steel and concrete construction on the other. 'This was a little less technically demanding in planning terms than the other buildings,' says Jan Hempel from the planning team, who often deals with complex Free Form geometries. The Learning Centre is designed to be a place of concentration, while the Recreation Centre is intended as a place where people can relax with a drink at the bar or in the fitness centre when their work is done.

A team with plenty of expertise

With experience from other construction projects around the globe, our team was practically able to approach the project as a routine job. At the beginning of the planning stage, we brought in our trusted partners Design-to-Production and SJB Kempter Fitze to help. The principle of parameterisation, or simplifying

Free Form construction with constructive rules, was once again the basis for the detail planning and production of the Grand Hall's curved trees. The dimensions of the components were adapted to the dimensions of the freight containers from the outset. The loading plans for the individual containers were very different, and different people were responsible for planning loading for each part of the project. The external haulier determined the freight route to South Korea via Antwerp. Together with our internal export specialist Willem van Zwieten, they were also responsible for producing the



// Blumer Lehmann worldwide

- We have years of experience in the planning and implementation of wood construction projects worldwide.
- Our installation teams are always deployed on location for all projects abroad, with local assistance where necessary.
- Components logistics, including the necessary customs procedures, is handled by our experienced specialists

www.blumer-lehmann.ch

freight documentation. The containers took

around 60 days to get from Gossau to Yeoju.

6/Free Form

Inside Korea



The Blumer Lehmann team on arrival in South Korea.







As well as culinary experiments, focused work is the main element of the team's daily life on site in South Korea.

Under the supervision of our site manager, Simon Huber, four to eight people from Blumer Lehmann will be working in South Korea from September 2018 to spring 2019. Project managers for the entire project and its different aspects will travel there temporarily when necessary and support the teams with planning expertise. Mister Jo, the local client's representative, will act as a helpful link with local workers on site. Otherwise, non-verbal communication may need to come into play at times. After all, even a simple undertaking like reserving a crane can become a challenge. However, according to Simon Huber: 'Essentially, the atmosphere on a building site in South Korea isn't much different to one in Switzerland. There's a very friendly atmosphere. Sometimes we also get given typical coffee drinks from a can. We return the favour with chocolate.'

Korean-style delicacies

Even with Google Translate, ordering in a restaurant in Korean is still a challenge. This means a 'surprise' menu is a fixture of the team's diet, which has one or two of them dreaming of Bratwurst sausage and other Swiss delicacies now and then.

A fascination with wood, even in their free time

On building sites abroad, members of the installation team have little free time. In South Korea, the working week is from Monday to Saturday. But a little sightseeing is definitely a must. This meant a visit to the roller coaster at the Everland Resort, also built by Blumer Lehmann in 2018, was among the destinations for a day out, as well as a visit to the demilitarised zone between North and South Korea.



The stamp for crossing into the demilitarised zone.

12/2018

Lush rooftop gardens for Maggie's Centre in Leeds



In its design for the Maggie's Centre in the British city of Leeds, the architectural concept from Heatherwick Studio London looks to the therapeutic effect of plants on visitors. Timber construction work on the architecturally unique structure, which is intended to serve as a place of encounter and support for cancer patients and their loved ones, began in 2018. As the project lead for the planning, engineering and installation of the timber construction elements, we are building three pavilions with lush rooftop gardens.

Three gently rounded pavilions of varying heights of three, six and ten metres together comprise the centre. On completion, gardens will be planted atop the sweeping roofs of the three pavilions. Gradually, the 25 by 19 m roof area will transform into a lush garden with trees and shrubs. One consequence of the gardens is high anchorage forces for the design of the structure. However, it also means that the three roofs will have to accommodate layers of soil and humus up to 80 cm thick to provide an adequate foothold for the roots of the plants. Large windows will allow plentiful natural light in the interior, the entire building will benefit from high-quality thermal insulation and the

timber material ensures that the building will feel comfortable and cosy.

Tricky logistics

The construction material plays a special role in this innovative construction project. The architects from Heatherwick Studio opted for a mix of light spruce and dark beech, which will be combined with the traditional lime plaster that is widely used in the region. The challenge for our team was not with the construction material, however, but once again with the logistics. The trucks delivered the components in England according to a precise schedule. They had to be unloaded quickly and carefully as it was absolutely imperative that the entrance to St. James's University Hospital, which is also used by ambulances, not be blocked by a lorry or crane at any time. The material supplies and concentration of people were not only precisely scheduled, but also continuously recorded and evaluated by the general contractor. The aim of these statistics was to optimise the approach and thus enhance the logistics.

Wellness architecture

The Maggie's Centres offer cancer patients and their families a place of refuge and emotional



support during the illness. The institution now includes more than 20 locations in the United Kingdom and Hong Kong, designed by the likes of Zaha Hadid, Frank Gehry, Foster + Partners (the Manchester location, also implemented by Blumer Lehmann) and now, in Leeds, Heatherwick Studio. The founder Margaret 'Maggie' Keswick Jencks, herself a cancer patient, believes in the power of architecture and wood as a material to improve the well-being of patients. From mid-2019, the Maggie's Centre in Leeds will complement the medical services of the nearby St. James's University Hospital with its emotional and social support.

8/Free Form

Complexity with parametric planning A central production interface



What might seem impossible to build can be made a reality thanks to parametric planning. Flag-ship Free Form projects such as the Cambridge Mosque, the Maggie's Centre in Leeds or the Grand Hall in Yeoju demonstrate the dramatic range of shapes modern wood construction can take. Architects are also increasingly discovering Free Form for smaller projects.

'You sit in the office and you think: the components are being delivered in Cambridge today. Please don't let the phone ring.' Although Kai Strehlke, in charge of digital CAD/CAM processes at Blumer Lehmann, exudes calm, you can understand his thinking. After all, the demanding Free Form construction of Cambridge Mosque offered up some tricky problems for him and his programming and production team. Such as the 30 stylised trees. 'All the same,' you might think, if you look at the rendering. Yet some of the wooden beams connect with concrete, some with wood and others connect to nothing at all. They are also double curved and cannot be placed on a flat surface for processing.

Parametric from planning to production

So how did the project team manage to plan these similar yet different elements efficiently and accurately? By developing a type of modular system with 2,746 individual components in 145 varieties, they solved the challenging tasks of production, logistics and installation. To do this, the project team took advantage of the benefits of parametric planning. If the construction is accurately recorded in 3D and the building geometry follows certain rules, the construction elements are virtually put into in the Free Form space in the plan. Parameters are used to define elements, nodes and connections. Parametric planning of the Cambridge Mosque made it possible to organise the elements into 145 different types based on shape, size and connection. The parametric data efficiently and precisely controlled the production machinery directly and produced each component in the required design and quantity.

Parametric planning thus enables complex construction, virtually flawless production and flexible planning. 'We're not quite so flexible that we could change the building on the last

day at the touch of a button,' laughs Kai. 'But changes are actually easier to implement. When we change the basic shape, all parametrised details and resulting information adjusts automatically.'

The most economically viable means of production

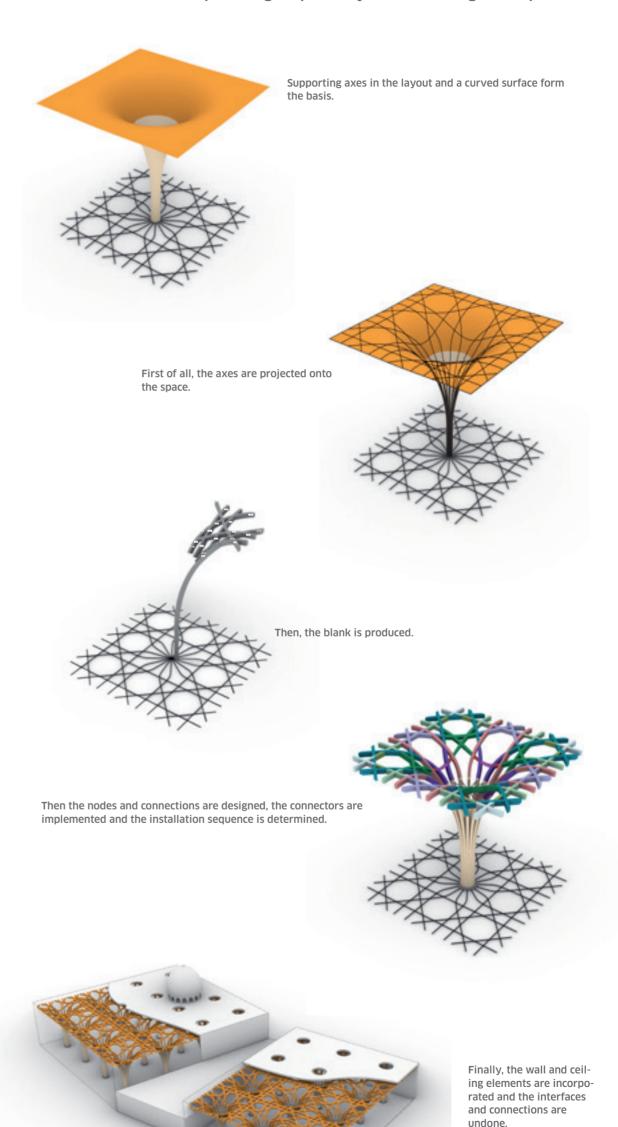
The effort of parametrisation pays off, particularly for large, complex Free Form constructions. Our promise is offering high quality while finding the most financially viable and efficient way for each project. Optimising construction and engineering is another major step in this direction. We are best equipped to take this path with the traditional carpentry expertise and knowledge of planning and production of every single team member and our technical set-up. Blumer Lehmann created a manually produced Free Form project only recently. 'Even that went without a hitch.'

Mock-ups offer certainty

'For Free Form projects, it's crucially important to work with the producers and the installation specialists early on', recommends Kai Strehlke. 'And testing and developing the idea with the client and manufacturer using a mock-up early on in the design phase.' That provides the architects, designers and carpenter with important insights into the construction and its impact, production, installation, logistics, quality and costs. Or, to sum it up in a word: certainty.

Kai knows what he's talking about. As a qualified architect, he is very familiar with the needs and concerns of the customer, as well as those of the planning and production side. In CAD/CAM production, his team brings together the perspectives of clients and producers, develops the production processes and produces the right solution for every project. By the way, when the wood delivery arrived in Cambridge, no telephones rang to disturb the team at work on Bischofszellerstrasse in Gossau. 'That's when you know it's working,' says Kai Strehlke. For each and every single one of the 2,746 elements.

Parametric planning inspired by the Cambridge Mosque



10 /Free Form

Object of desire in Val Lumnezia A one-stop shop for renovation and Free Form

Casa Mundaun in Val Lumnezia is intended as a place of retreat and well-being. After the conversion, the former restaurant in the heart of the village will be home to five luxurious suites. The new building, which has a Free Form design, houses the restaurant, the attached show kitchen, designed to meet the toughest culinary requirements, and the wellness and fitness area. The entire complex will also have a basement level for an underground car park. In the structural restoration of the existing building, the client prioritised the preservation and, where needed, the replacement of the original building material. Accordingly, the façade and the roof turret are clad with specially produced larch wood shingles. For a year, different configurations of our team have been working on site, contributing their full array of

carpentry expertise from traditional handicraft to Free Form construction. According to the client, this combination of old and new is deliberately intended to become part of the building's history in future.







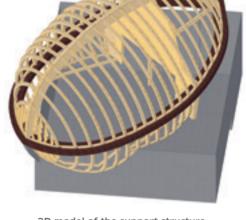
Local nutshells are worked into the specially made flooring, GIOMOFLEX® naturo by Uniquefloor.





Frümsen, the Rhine Valley's 'nut village', is known for its different varieties of walnuts. With that in mind, the extraordinary shape of the waiting room for the local cable car's valley station waiting room was not chosen by accident. Sepp Steiger, owner of the company Frei Holzbau and president of the canton of St. Gallen's association of master carpenters, brought various planners and timber construction spe-

cialists on board as contractors to help implement the project. A 3D scan of a real walnut was used as the starting point for the geometry. The wood construction planner then drew on the scan data. Our CAD/CAM specialists were in charge of drawing up the machine data. Our five-axle CNC machine was used for production. Based on a modular design principle, the Frei Holzbau team then put together on site



3D model of the support structure.

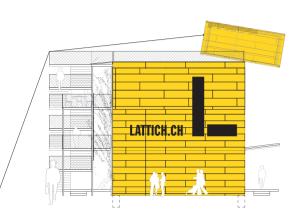
around 700 spruce components and the inner shell of the nut using solid wood panels.

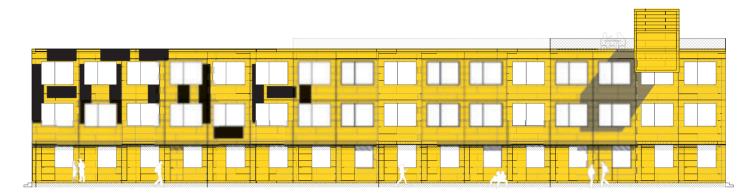
Around 93 m³ of wood was used, 80% of which came from local forests. Fun fact: this quantity will regrow in the Werdenberg-Rhine Valley region in one day.

12/2018

MODULAR CONSTRUCTION/11

New 'Lattich' development in St. Gallen A meeting place with urban flair GC project





The site of the former freight depot in St. Gallen will soon be home to affordable workspaces for the creative industry, made from 45 wooden modules. The compact workspaces are the ideal place for working in a vibrant and inspiring environment. We are planning and creating the modular construction in the temporary Lattich development. We are also part of the association funding the project.

Together with the Lattich Association, we received the building permit in autumn 2018. Work began on the freight depot site in November. Small businesses that would like to set up their offices, studios, practice spaces or workshops in one or more of the 45 wood modules have been able to apply since October. The architectural concept was created by the construction firm in situ AG. The artistic façade was designed by Marcus Gossolt, one of the project's initiators. Blumer Lehmann is in charge of timber construction planning and implementing the modular construction. Richi Jussel, CEO of Blumer-Lehmann AG, was excited about the idea from the outset and played a considerable role in developing the project: 'Young people should have space to bring their visions to life and to share knowledge and expertise. I hope this will lead to more creative young people staying in St. Gallen.'

Running your own business on 27.6 m²

Small businesses in industries such as craft, design, communications and architecture can lease just under 30 m² of workspace with heating, electricity and internet connections. All for a price that's also affordable for start-ups and the self-employed. There's also space for a food outlet in the modular construction. An arcade with stairs and a lift opens up the workspaces from outside and makes it easier for people to meet.

Efficient production and quick installation

The wood modules will be prefabricated at our plant by late 2018. This is where they are kitted out according to the defined construction standard, with pipes for heating and plumbing, insulation, electrical and internet connections. They will then be built and installed on site based on a modular principle in early 2019.

Modules outlast temporary use

The modular construction highlights the temporary nature of the complex and indicates both mobility and potential for development. After all, it is already clear that the modules will have a new life as a work or living space in 10 to 15 years, long after they have been used in the Lattich development. A major advantage of the modular construction is that it allows for precise costing and scheduling. Like on the Lattich site, modular constructions are often con-

First floor floorplan: your own business on just under 30 m² with heating, electricity and internet at an affordable price.

sidered for temporary buildings. But this has not been their only purpose for a long time. They are ideal for various uses and constructions that need to meet changing conditions quickly and easily, such as temporary offices, hotel accommodation, school expansions, accommodation for asylum seekers, as well as longer-term uses such as annex buildings for sports halls, single houses, microapartments or accommodation for senior citizens.



//Richard Jussel
CEO, Blumer-Lehmann AG

'I FIRMLY BELIEVE THAT THERE IS GOOD REASON TO USE THE MODULAR APPROACH NOT JUST FOR TEMPORARY BUILDINGS. ADVANTAGES SUCH AS CERTAINTY REGARDING COSTS AND SCHEDULING AND SHORT INSTALLA-TION TIMES ON SITE CAN ALSO BENEFIT PERMANENT BUILDINGS.'

12 / MODULAR CONSTRUCTION

Building Information Modelling (BIM) The future of construction



They see major advantages for investors, clients, architects and companies involved in construction when all project stakeholders work together on the 3D planned model: Richard Jussel, CEO of Blumer-Lehmann AG and Adi Grüninger, responsible for digital construction processes at Blumer Lehmann.

The issue of BIM and the digitisation of building processes will change the industry forever. Established interfaces disappear, unnecessary aspects are removed and productivity is improved. With wide-ranging experience of projects planned using BIM and a network of businesses with the necessary expertise, Blumer Lehmann wishes to increase process, scheduling and cost reliability in construction projects for architects and investors. An organised digital platform enables the exchange of data between stakeholders and allows the process to be monitored from the idea to completion of the building and beyond.

If you Google the term 'BIM', around 75,700,000 results appear within 0.45 seconds. Headlines like 'BIM is the future' and 'Mistakes and misconceptions about BIM' show that this is a hot topic in the construction industry and one which causes some controversy. Richard Jussel, CEO of Blumer-Lehmann AG, describes BIM as a path of trust. 'Despite the high level of mechanisation and other work tools, you need to speak to each other to understand each other. More than ever before.' This is because the BIM method requires all companies involved in the project to work together on the same digital 3D

model in a timely, simultaneous, coordinated and structured way and to interact with each other - ideally at regular meetings or over the phone. All project stakeholders prepare their data so it is available to everyone on the same platform throughout the entire planning and implementation of the project. A property developed in this way has therefore already been planned, monitored and confirmed by all sides in the 3D model. A task system directly linked to the 3D data helps with this. Queries are sent directly to the planning partner. Decisions, changes and requests are transparent and can be traced. Investors, clients and architects can thus count on a high level of process certainty and construction quality and can gain an insight into the planned property at any time. This results in fewer mistakes, the costs and schedule can be planned precisely and the points of contact are clear.

Expertise, experience and network

Thanks to major projects that we have already completed using the BIM process, we at Blumer Lehmann are experienced in joined-up digital planning. The prefabrication principle of timber construction also suits the basic concept behind BIM. We already use 3D data from planning to

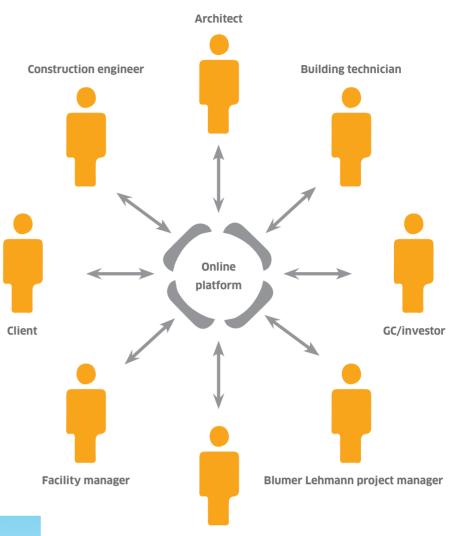
control the production machinery. And we have an extensive network of planning specialists, subcontractors and suppliers with the necessary knowledge. We want to provide architects and investors with this experience and network during the construction process,' explains Adi Grüninger, responsible for digital construction processes at Blumer Lehmann, 'so they can monitor and agree to all additional information over the course of the project until it is completed. After the actual design planning phase is over, they can hand over responsibility for implementation - for the entire project or one 'group of works'. As an experienced partner in the implementation process, we are therefore able to give our customers a sense of security and the mental space for new ideas and designs.'

Learning from experience

The benefits of the BIM method are highly persuasive. Projects that explicitly require BIM process for their implementation are already being publicly tendered. Yet there are still reservations in many quarters regarding this planning method. 'The new way of working also involves risks,' says Richard Jussel. 'Every company needs to set out on its own and learn

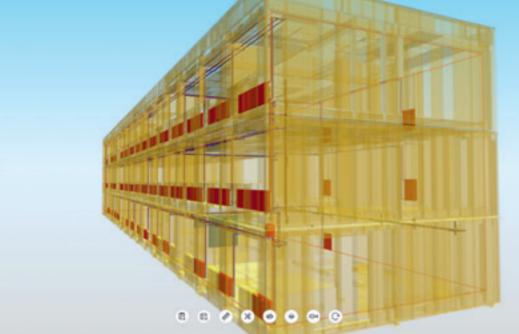


Adi Grüninger: 'As a partner with experience in projects planned using BIM, we give our clients a sense of security and mental space for new ideas and designs.'



Modeller

On the BIM platform, all project stakeholders work together on the same digital 3D model in a simultaneous, coordinated and structured way and are in regular contact with each another from the outset. Their data is available to everyone on the joint platform throughout the entire planning and implementation stages.



The project stakeholders work together to develop a 3D model of the property. Decisions, changes and requests are transparent and can be traced at all times.

from its own experience. The make-up of the team is an important factor for success. This is selected as early as the planning phase. Once the process starts, all partners are dependent on each other. Every project stakeholder must follow the process and make contributions. It's also important that all partners acquire the expertise for this interactive, digital approach in 3D. At the end of the process, the production machinery is controlled using planning data and, after construction, the planning data goes from a target to a built reality.'

BIM ensures transparency and reliability

In order for us at Blumer Lehmann to be able to take charge of and manage BIM processes, we need to be involved in planning at an early stage. As BIM process coordinator and implementation team for a project or group of works, we take on various tasks that offer the client added transparency, increased cost and schedule security and a structured working approach. And our experience shows: this process results in a more efficient workflow and fewer mistakes during both the planning phase and implementation.

// The benefits for our customers and clients:

- Advice on implementing construction projects using the BIM process
- Cost calculation for individual trades based on the architect's planning data (IFC format)
- Use of the BIM platform as a tool for shaping the BIM process
- Strong network of BIM-ready, owner-operated subcontractors and subproducers
- Coordination of different subcontractors in the BIM process
- Use of digital BIM planning data for construction management and installation

14/MODULAR CONSTRUCTION

The flying classroom DFK 1.0 Modular construction for modern school concepts





The overhang of the roof structure is identical on all sides of the building. Steel rods connect it to an arcade leading around the building. The roof overhang on all sides is also used as a sunshade, making it possible to dispense with other shading elements.

They're planning the school of tomorrow. Together with Blumer Lehmann, architects from the building management department at the district office of Tempelhof-Schöneberg in Berlin are working on a new type of mobile schoolhouse that meets the requirements of a high-quality temporary school. On a visit to Erlenhof, the Berlin delegation examined the pilot project modules that are under way.

'Seeing our modules in the flesh is very pleasing. The colours in the colour scheme work well together,' says architect Stefan Mittermaier. 'The quality of the finish is very good,' adds Andreas Spieß, the building management team's head of design. Our guests from the Tempelhof-Schöneberg district office in Berlin are satisfied. Their school project was designed in the internal planning department and two identical versions are being built at different locations in the Tempelhof-Schöneberg district. Blumer-Lehmann AG was awarded the contract as general contractor in the public tender.

New modular construction concept for a temporary school building

'It's a pilot project for both sides,' says Andreas Spieß, adding: 'If the result of the simplified single-storey pilot is satisfactory, it'll be time to move on to the next stage of the "flying classroom", DFK 2.0.' It is designed to allow for different, even narrower building shapes, multiple storeys and an individual room layout that per-

mits the new teaching classroom concepts of the state of Berlin. These so-called 'cluster schools' have a more open layout than traditional schoolhouses. Compartments replace classrooms and corridors and are intended to promote a new, open type of learning in the building, with spaces to meet and move as well as open spaces. This represents a challenge for the planning and project team, as supports and











frameworks are used as load-bearing features rather than walls. On the other hand, this 'school without corridors' doesn't just benefit teaching staff and students. It also has a positive impact on production costs and simplifies the production process.

Meeting the school's needs

The mobile schoolhouses are urgently needed in the Berlin district of Tempelhof-Schöneberg to house a growing number of students. However, the planners would prefer not to approach the need for school space with conventional buildings but meet the needs of the school of today. The spaces should enable inclusive teaching and intensive collaboration between educators and support learning processes in learning communities. It should also help teaching staff and students identify with 'their school' through its functionality and aesthetic.

Skill, price and sustainability

It was clear that a timber construction was the right choice from the outset. The clients developed functional performance specifications and a room layout as a basis for the DFK 1.0 tender. The re-usability and aesthetic of the modular construction were key criteria for the clients, greatly reducing the number of bidders. After all, it was no mere standard modular construction that was required but individual pre-

liminary planning. And as Migga Hug, responsible for GC projects at Blumer Lehmann, puts it: 'The fact that, as a Swiss company, we could still compete in terms of price astounded our clients. Ultimately, we were best placed to meet the planners' complex requirements and were awarded the contract.'

Long-distance collaboration

It was relatively easy to bridge the 1,000-kilometre gap between Berlin and Gossau during the planning phase through regular telephone conferences. However, the project stakeholders faced challenges in the shape of laws and standards that differ in each country but were key to planning. Installation work at Schulenburgring in the Tempelhof-Schöneberg district will be completed this year, shortly before Christmas. In late January 2019, the schoolhouse on Konradinstrasse will be ready for use. Six large and two smaller classrooms, side rooms for teachers, a small kitchen, a filing cupboard, a technical room and toilets are housed in a single-storey modular construction with a larch wood façade.

16 / MODULAR CONSTRUCTION

Züri-Modular (ZM): a model of success Latest generation in Minergie Eco standard



The latest addition to Züri-Modular's school buildings in Zurich can be found in Hürstholz and Allenmoos. Over 50 have been built since the first Züri-Modular pavilion in the north of Zurich in 1998. 'First aid in an emergency' was the headline in the Swiss newspaper NZZ. The buildings' main benefit: due to a shorter approval process, a high level of prefabrication and short construction times, a relatively flexible approach can be taken to changing student numbers.

The Züri-Modular was designed and has been developed ever since by Bauart Architects and Planners. The current version, ZM10, meets the Minergie Eco standard. Depending on the location and requirements, the school pavilions remain in the same location for 10 to 15 years before being set up again on a different site. As GC, Blumer Lehmann is in charge of construction from the concrete foundations up.



Uetikon am See cantonal school A pop-up high school for a decade

The modular timber construction of the temporary schoolhouse for the cantonal school in Uetikon am See immediately catches the eye. It is designed for ten years of use and to offer both students and teachers an ideal learning and working atmosphere throughout that time. Once the school has moved to its permanent location, the modules can be re-used in a different location for at least another 20 years. As GC, we managed this project from the concrete foundations up. The client was the canton of Zurich. ARGE B.E.R.G. Architekten / Schlatter Bauleitungen were responsible for the building's architecture. The temporary development has two three-storey buildings connected by a



wooden passageway. These were designed by the construction firm in situ from Zurich. There are around 30 classrooms with space for up to 500 students on the three levels. The develop-



ment also includes ten specialist, preparation and instrument rooms and a laboratory, as well as an eating and leisure space and several administrative spaces.

Boudry school extension



Convertible modular construction for generations to come

You could say that Boudry is booming. In recent years, the little town in the canton of Neuchâtel has seen its population grow massively and the trend is continuing. Additional school space was urgently needed. Flexibility, rapid implementation, comparatively low costs – these benefits of modular timber construction won over the Boudry construction managers. They chose an L-shaped school building consisting of 12 large and seven smaller modules

and complying with the Minergie P standard. For several months now, children aged from four to 12 have been learning, playing and dining in the new extension with its comfortable indoor climate and strikingly colourful façade. Our planning team and the clients were even one step ahead. The modular building is designed to easily allow additional storeys.



EVENT CONSTRUCTION/17



Sustainable timber construction on the home straight

The Julius Bär Zurich E-Prix combines the topic of mobility with innovation and sustainability, captivating viewers of all ages. We combined these very aspects in the construction of three event constructions for this occasion. And even achieved a track record - thanks to the top performance of our production and installation team.

Managed by event organisers Swiss E-Prix Operations AG, the completely electric Formula E racing cars sped through the centre of Zurich for the first time in June. And finished up by zooming to their destination beneath the feet and excited gazes of viewers in the E-Cube building. The two-storey wooden event construction, boasting a restaurant, lounge and roof terrace, spanned the finish line. It allowed visitors to experience the sustainable racing spectacle up close and personal in a 22 by 20 m hospitality space.

Every move of every crane planned

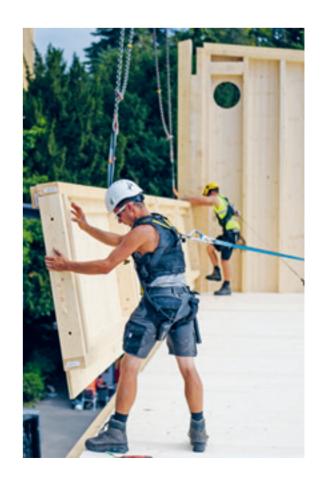
As well as the E-Cube at the finish line and a technical and catering building, we built the two-storey pit lane with hospitality and 11 pits for 44 racing cars. All three buildings were prefabricated from timber elements in our production facility in Gossau. Practically all that had

to be done on site was assemble and screw them together. Martin Bender, responsible for international project sales at Blumer Lehmann, even speaks of a track record: '160 m in 60 hours! We installed the two-storey garage building, exactly 158.5 m long and 10 m wide, in a 24-hour shift pattern in under three days. To meet this scheduling specification, we planned every single move of every crane and didn't even allow ourselves 15 minutes' delay.'

Inner-city traffic and limited storage options demanded this precise schedule for installation. All planning, production, installation and logistics workflows were therefore planned down to the minute. In the event that a lift or a crane went out of service, the back-up plan set out replacement measures for every step of construction. 'We were able to rely on the Blumer Lehmann team completely, and we're delighted with their skilled work,' confirms Pascal Derron, founder and CEO of Swiss E-Prix Operations AG.

Sustainability on the entire route

The entire concept of the Julius Bär Zurich E-Prix is geared towards a CO₂-neutral environmental footprint. This is naturally an ideal fit for our prefabricated and reusable wooden elements. As early as the design stage, the planning team also made sure to use as little wear material as possible.



18 /LIVING

A common 'sense' construction An architectural concept with real feeling







© Scheibler & Villard

The wood construction visually enriches the existing building's construction.

People who can see and hear very little or nothing at all are guided by their sense of taste and smell and the perception of vibrations. The 'Farfalla' project by Scheibler & Villard Architekten for the new school building and accommodation for the 'Tanne' Swiss Centre of Competence for the Deafblind was based entirely on the needs of its future occupants. It combines wood and concrete construction, green and red tones as well as indoors and outdoors to help them get around.



Concrete core with attached wooden volumes.

The specific needs of infants, children, young people and adults born with hearing and visual impairments and other (sensory) impairments are crucial to the new development for the Swiss Centre of Competence for the Deafblind in Albis. Accordingly, the concrete stairwell feels completely different in the structure and temperature of its surface and smells completely different from the wooden school and living spaces. The colour red for living and green for school also help guide the way. The separation of living and school areas over two buildings that are only connected on the ground floor creates a journey to school or work. This allows the occupants to experience a clear separation between their home and their day-to-day occupation, even if only briefly. For a moment, they can sense, for example, if it might be raining outside. 'Perceiving and being guided by as many senses as possible is key to the design,' says Sylvain Villard from Scheibler & Villard Architekten. 'The materials, the construction, the design - everything is part of this basic idea.'

Masters of several trades

Blumer-Lehmann AG was awarded the contract for the new school building and accommodation because we had a great deal to contribute to the project – as well as a competitive quote. Structure, timber construction, façade construction, interior construction – and the fact that we were able to offer not just one but several different trades was another reason for the granting of the contract. The wide-ranging technical expertise of our timber construction specialists was also a convincing argument in this public tender. Sylvain Villard describes

Requires less grey energy than concrete and steel

// Multi-storey timber construction -

forward-looking advantages

- Saves CO₂
- Ensures high, regional value creation and many jobs
- Creates a healthy, natural room climate and a comfortable living environment
- Offers unlimited design options
- Is economical and low maintenance
- Offers clients significant process and cost reliability

what followed over the course of the project as constructive collaboration. 'The concrete core and attached volumes of timber come together in the building to form a coherent, hybrid whole. Both constructions are equally important and required constant coordination between all project stakeholders. In fire protection, for instance, or minimising acoustic or visual disruptions because people with visual and hearing impairments may react to these much more sensitively.'



Images: Scheibler & Villard



Learning and living in a comfortable atmosphere: to help guide the way, the learning spaces are in green tones and the living spaces in red.



A living environment created by wood

For Sylvain Villard, the advantages of timber construction are partly in implementation as the timber and concrete construction project teams can work simultaneously thanks to the prefabrication of the wooden features, thus saving time. But the concept of sustainability also played an important role, even when the project was just an idea. Above all, however, the children, young people and adults will react positively to the living environment created by

wood. The architect is firmly convinced of this. 'They love to touch the wooden material. We think that they will feel particularly good in a living environment made of wood.'

Enriching in many senses

The floors have already been cast, the roof has been put up and the pipes have been laid. The building shell of the 'Tanne' is complete and the new building will be ready for use in spring 2019. According to Sylvain Villard, he learned a

great deal from the complex project himself. He describes the work with Blumer-Lehmann AG as enriching. The new development will also have an enriching effect for the clients, the Swiss Centre of Competence for the Deafblind. The wooden construction enhances the brick structure of the previous building and creates a diverse array of materials and designs on site, opening up new opportunities for contrasting perceptions of living and learning spaces.

20 / [] \]

Apartment building with commercial and living spaces A massive achievement in Engelburg

It took four years from the request for a quotation to the completion of the apartment building in the centre of Engelburg. The lengthy approval procedure and the laborious digging process delayed the start of the project to May 2017. Our project and planning team had a few hurdles to overcome and demonstrated its flexibility on several occasions. For example, the topping-out date was postponed at short notice. At this point, the wooden construction of three of the four storeys had already been produced and had to be stored for six months.

There is, however, no trace of this in the modern building with commercial spaces on the basement floor and eight apartments on the levels above. The 'mountain' stands out proudly in the centre of Engelburg. The architect, Linus Mäder from inform architekten, was inspired by the Alpstein massif. The silhouette of the Säntis mountain chain in particular was the architect's inspiration for the geometry of the building with its unique roof shape. The colour grey was consciously chosen for the new development to recall the craggy rocks. The green

windowsills and shutters are inspired by the lush Alpstein meadow. The roof, with its 15 different surfaces, three windows and numerous ridges, gives the building its unique shape. No less than 22 roof windows in the top-floor apartments ensure plenty of light and panoramic views. The apartments' large cantilever balconies, at up to 95 m² per storey, also offer a magnificent view of the Alpstein. This type of

'terrace' balcony was created from overhanging Lignatur elements thanks to the special roof construction.





Schlösslipark St. Gallen Urban living close to nature

A modern development of high-quality apartment buildings in a sunny location is taking shape in Schlösslipark, in the Haggen district of St. Gallen. It blends harmoniously into the existing neighbourhood. The apartment buildings are turned slightly and at an angle to each other. This gives the development a certain lightness of touch. The development is home to sixty ultra-modern and bright rental apartments in five buildings with four storeys each. Each apartment has a terrace, a balcony or a garden seating area. The ground floor of Building 1 is intended for commercial use. The buildings will be ready for use in autumn 2019. Planned by Holzer Kobler Architekturen from Zurich, the buildings are made from a hybrid of wood and concrete. We are in charge of planning and production of the wall elements, façade cladding and balcony railings. The walls, built using the element construction method, are encased in a



vertical pre-aged spruce formwork. Floor-to-ceiling windows are built into the wall elements in our Erlenhof production facility.

The elements are then supplied to the building site and placed in the right position between the solid construction and the scaffolding using a crane. This process guarantees swift installation. The balcony railings and dividing walls,

made from vertical wooden slats, create the necessary privacy while allowing a view of the leafy surroundings – for urban living close to nature.

For more information on the project, visit www.schloesslipark.sg

12/2018





A family home in Oberbüren Out of the woods



Bruno Brülisauer works with wood every single day. As a forklift driver and crane operator at Lehmann Holzwerk AG, he reliably transports the raw material to and from the Erlenhof site. It seems as if Bruno couldn't get enough, even in his personal life. He and his wife had always dreamed of living in a building made of timber. Finally, in spring 2018, his wife's parents' house in Oberbüren gave way to a two-storey timber construction. The two storeys are linked by a wooden staircase. And in the living room, the structured wooden ceiling 'Säntis', a Leh-

mann Holzwerk product, fulfils its decorative purpose. Since the scaffolding was removed, the natural larch façade appears in all its majesty. It's a very natural fit with the surroundings. Bruno and his wife placed a great deal of trust in their colleagues from Blumer-Lehmann AG for their building project. They were particularly delighted to be able to supervise the project from start to finish – from planning and building application to construction and completion.

America meets Lake Zurich The wooden White House

It isn't the White House in Washington DC we're talking about here – it's the wooden white house on the gentle slope in the little rural spot Au near Wädenswil. Inspired by the American style of wooden house, the architect Linus Mäder from inform architekten designed this detached house. We were able to assist with the project early on and contribute to the dimensioning, choice of materials and tender in the preliminary project stage.

The angular layout of the three-storey house is due to the unconventional shape of the plot.

This allows the building with the white wooden

façade to fit the site. Inside, the wooden theme continues: the ceilings are made from white-painted three-layer panels and the centrepiece of the ground floor is an extraordinary wooden staircase that also acts as shelving and a guardrail. Timber was also used for both balconies and the roof terrace in the form of thermal ash – which happened to be supplied by Lehmann Holzwerk AG. The view of Lake Zurich is stunning – and the owner of the house can enjoy it from right here.





An apartment building replaces a former barn Two generations under one roof

In January 2017, Martin Eggenberger, a project manager at Blumer-Lehmann AG, began planning his new home from the ground up. It was important to him that he could contribute a lot to his own private new build, particularly in the planning phase. To move ahead quickly with construction, he also commissioned an architecture firm for the site management, tendering and collection of quotations. As a client, he took the lead now and then and spurred the building project on with his many years of professional experience. Joining forces meant that his own home could be created more quickly. His work colleagues mostly handled the construction of the high-quality wooden building.

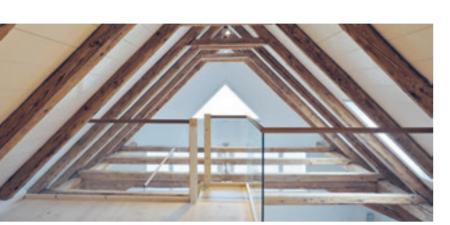
But his family also made major contributions to the construction project. The result is a three-storey apartment building with a concrete basement and stairwell. The timber framework construction built on top houses five apartments; for his parents, for his own use and to let. The new development with the pre-aged pine façade is close to the agricultural zone and is situated where his grandparents' old barn once stood.



22 /CONVERSIONS // RENOVATIONS

Professional construction support for new and converted buildings

All under one roof





More and more properties are becoming outdated and are in need of renovation or complete conversion. Even the building shell often no longer complies with current construction standards for energy efficiency. Through a conversions or renovation, existing properties can be brought up to date with regard to energy consumption. Furthermore, modernisation through timber construction is sustainable,

whether for a detached house or an apartment block, an individual property or a major

At the beginning of a renovation project, the property's energy efficiency (building shell, heating system) is recorded. This helps identify weak points and can be used to plan suitable measures and come up with specific energy saving options.



'AS CARPENTERS, WE'RE EXPERTS IN BUILDING SHELLS. THIS IS WHERE THE BIGGEST POTENTIAL FOR ENERGY SAVINGS CAN BE FOUND.'

Qualified energy consultant at Blumer-Lehmann AG

// Our services

- Complete recording of the building
- Feasibility studies
- Handling funding proposals
- Coordinating energy certifications
- Component calculations
- Proposals for renovation
- Implementation planning
- Building applications for conversions and new builds
- Construction management for conversions and new builds
- Production and installation of timber construction

Planning with energy

Based on the survey, our clients receive a specific proposal for measures and their associated costs. The associated feasibility study shows which additional costs result from conversion and later upkeep and to what extent the recommended investments are worthwhile. If necessary, our specialist takes care of all funding proposals and the necessary energy certifications for all cantonal and communal authorities, thus taking the load off the clients.

Supervising and implementing construction

Once the detail planning has been produced, quotations are collected from construction firms. Our project manager will take on all processing and coordination with third parties if preferred. For maximum energy-saving potential, it's not only professional planning that is crucial. Professional implementation is also key. As experts in timber construction, we have a great deal of experience - in planning, implementing and managing new and converted projects of all sizes.



A celebration for Minergie

A celebration for Minergie

A standard for comfort, efficiency and conservation of value

In 2018, Minergie, the Swiss standard for comfort, efficiency and conservation of value, is celebrating its 20th anniversary. Around one million people are already living, working, learning or spending their leisure time in Minergie buildings. Over 46,000 buildings in Switzerland are now certified with the Minergie label. A total of 50 billion kilowatt hours of energy and 10 million tons of CO₂ have been saved since 1998 due to buildings being con-

structed to the Minergie standard rather than the statutory minimum requirement. This is akin to the energy consumption of the city of Lucerne in the same period.

Blumer Lehmann was one of the first timber construction companies to use the Minergie standard. We are delighted that we have been able to make our contribution to actively protecting the climate and we will, of course, continue to do so.



Additional storeys for electrical training school Teaching and learning on two new storeys

At first glance, it's hard to spot the timber construction behind the electrical training school. It's equally hard to tell that the building has been expanded by two additional storeys. It is a hybrid construction in the form of a steel skeleton with wall and roof elements in wood. This is partly because the city of St. Gallen required that the building be expanded with the same visual appearance – with a plaster façade and the original style of windows. Inside, however, you can really see and feel the wood. The ceilings in the new classrooms are made from Lignatur elements. Despite the stringent requirements for fire and noise protection, we

were able to leave the wooden ceilings visible and equip them with integrated noise absorption. The ceilings therefore make a major contribution to good spatial acoustics. Thanks to adaptations to the fire protection regulations in 2015, it was also possible to use timber construction to extend the staircase. We prepared the floor and staircase elements in the factory and brought them straight into the building. Installation was correspondingly swift. We worked very closely with the specialist planning team with regard to the fire and noise protection requirements. This intensive planning ultimately made for a smooth construction



process on our side. Now, there's nothing to stand in the way of teaching and learning in comfortable surroundings.



Romanshorn granary conversion Careful handling of historic heritage

The historic granary in Romanshorn offers a great deal of space at over 9,000 m². New life was breathed into the former warehouse this year. The building, erected in 1870/1871 by the Nordostbahn railway company, was used to store food and commercial goods of all kinds. However, the large storehouses became less and less important and were ultimately given up. This project will breathe new life into them. It consists of an extraordinary space for living, exhibitions and leisure – in historic surroundings right by the lake.

A key priority for the Kornhaus Romanshorn AG client, Dr Peter Schnückel, is careful handling of the historic building material. The conversion therefore requires not only solid knowledge of timber construction but a certain degree of sensitivity in its execution. We are upgrading the building's old timber constructions, taking principles of conservation into account. Plans are in place for this impressive testament to the past to appear in its modern guise in spring 2020.

'House of Herbs' in the Weisstannen valley A new look for proven expertise

Only handmade products are sold in the Alten Post museum shop in the Weisstannen valley – made from fresh herbs from the herb garden and growing wild on site. The herbs are dried in the new 'Chrüterhüsli' or 'House of Herbs' that offers an ideal indoor climate for drying the precious herbs. They are used to make high-quality products such as teas, vinegar, syrup, soaps and much more. The small block house made from solid construction wood was planned by Blumer-Lehmann AG using a historic building method. The wood was then cut at

our Erlenhof site and the components were prefabricated and made in our production facility before being sent to the Weisstannen valley. There, volunteers put together the 'construction kit' with the traditional craft of the carpenter – by hand and in their own time. And that's not all: the neat little house isn't just functional – it also blends in wonderfully with the surroundings.



24 /INDUSTRY // COMMERCE



New Landi branch in Gossau A timber construction for our neighbours

Joy and relief were on the faces of all those present in September 2017 when the ground was broken for the new Landi branch in Gossau. At the beginning of the planning phase, over 10 years ago, there were no plans for a new building. The intention was to convert the existing building on Bischofszellerstrasse. However, for a variety of reasons, the project was postponed time and again. Ultimately, the client opted for a new build, which we were given the opportunity to plan, coordinate and implement as part of a joint GC contract. The result is a building with architecture that's unusual for Landi.

The 'Landverband' association bought the property on Bischofszellerstrasse back in 2006. Until 2015, the plan was to convert the existing building – the former Lehmann timber market – and use it as the new Landi in Gossau. The building materials from 1986 had a good 30 years left in them. Yet the building had two storeys, was angular and had insufficient height. Accordingly, the LV St. Gallen decided on a new building. Renovation would only have been slightly more affordable.

Tools downed for the onset of winter

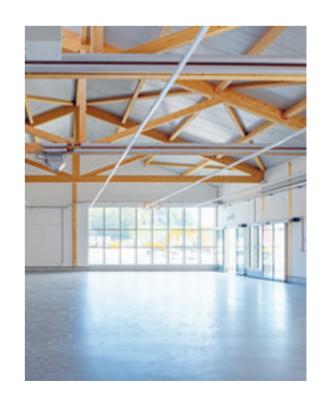
The building permit was issued in autumn 2017. It was with mixed feelings that our senior boss Leonard Lehmann followed the demo-

lition of the former timber market three months later. He had, after all, been the client for that building in 1986. Right at the beginning of the building works, the former basement was turned into an extinguishing water reservoir. In the event of a fire, this prevents contamination of the adjoining stream, which had to be restored to its natural condition by law. The initial construction phase was then interrupted again for three weeks due to the onset of winter. The rest of the construction period continued without incident. Around a year after ground was broken, the topping-out ceremony took place in September 2018.

Façade with a 3D Landi logo

The result is a single-storey timber construction with three gable roofs and a wooden façade made from pre-aged rough-cut spruce slats. A dyed wind paper behind the vertical slats creates a green shimmer effect. Another striking feature is the 3D Landi logo that we have integrated into the façade's formwork. To create this, milled all the façade elements on our CNC machine. As general contractor, we were responsible for the building shell, including the roof, façade, doors, gateways and windows. We planned, coordinated and supported the remaining implementation work in accordance with the construction management brief, such as ordinary construction work, interior

construction and building technology, The new Landi on Bischofszellerstrasse, at 1,760 m², is four times bigger than the previous building on Bahnhofstrasse. This allows for a much better presentation of the store's wide product range to customers. And with around 60 parking spaces, there's no longer anything to stand in the way of convenient shopping trip to Landi as of December 2018.







GC project

New production facility for Bio-Beck Lehmann An entrepreneur's bold expansion

In order for Bio-Beck Lehmann to keep its promise of 'Producing fine products, day after day', expansion was required. After all, the company run by Anna Lehmann, who is the second generation to take charge of the business, has grown dramatically in recent years and the lack of space was becoming increasingly noticeable.

The client involved us from the very beginning in her plans to build a new production facility. Our architect Vinogithan Premakumaran produced a draft design based on her ideas. We were then awarded the contract for detail planning, the tendering of all trades, the awarding of contracts to subcontractors, site management and implementation of the timber construction. Communication with the client was very cooperative and pleasant. Anna Lehmann, herself a trained draughtswoman, contributed her knowledge and vision to the project and kept an eye on the details throughout the en-

tire implementation stage. The result is a replacement building with a concrete basement level and three additional storeys constructed from wood. The ground floor of the new building houses production, packing and the retail unit. Offices, comfortable washing facilities with cloakrooms for staff and a spacious staffroom with a kitchen are upstairs. A stylish wooden staircase offers direct access from the idyllic organic garden to the upper floors. The topping-out ceremony took place in late August 2018 and production could be moved into the finished building at the end of October 2018. Andreas Lehmann, founder of Bio-Beck Lehmann and a pioneer in the production of organic baked goods, laid the foundation for today's company together with his wife in 1976. The business has adhered to the philosophy of organic production and now, more than ever, all bakery, patisserie and confectionery products are organically certified.

New lion's den for Walter Zoo A classroom in the lion's den

The lions are back at the Abenteuerland Walter Zoo in Gossau. With the construction of the lion's den designed by Huser Schnell Architekten, they are now housed in spacious outdoor and indoor facilities. It wasn't just the lions who got a new building: above the feline predators' indoor facility, a lodge has been built for various uses. We worked out the details for the wooden construction in close collaboration with the client, the Federer family. The focus the building's functionality. A kiosk, a comfortable viewing terrace in larch wood and a storeroom were built. As well as the lion enclosure. the construction also has space for the zoo school. This comfortable classroom is available as an extracurricular space for learning. This allows class visits and other curious groups to move their lessons to the Walter Zoo for a few hours or days.







26/INDUSTRY//AGRICULTURE

Agricultural centre, Salez Low-tech building with strategy

The low-tech concept for a building with minimal technology was not initially on the agenda of the competition for the expansion of the Salez agricultural school. It was the St. Gallen Building Department, under the supervision of Werner Binotto, that first saw the potential for creating a low-tech building in architect Andy Senn's winning project. As it turned out, the high-ceilinged spaces, the clear building grid and the shading of the façade by balconies offered the ideal conditions for avoiding building technology and saving on energy and maintenance costs. Accordingly, the project stakeholders reduced the technical facilities in the overall planning process and used aspects of architecture to create the required level of comfort.

For example, there is absolutely no ventilation system in the building. Instead, budding farmers regulate the indoor climate in their classrooms themselves through regular cross-ventilation. The users therefore have to take more responsibility for the climate in the room. The wooden construction also contributes to the ambience of the room. We were in charge of the detail planning and implementation of the building shell as well as the production and installation of the wall elements and support structure using oak, spruce and pine wood. The new building meets the requirements of the 2000-watt society with its energy-saving lowtech concept, the sustainable timber construction, the wood-chip heating system and solar energy production.



The cross-ventilation is a key element in ensuring comfort.

Laying henhouse for the hosberg founding family Organic eggs from the Zurich Oberland

For many years, we have worked closely with the Reinhard family, the founding family of hosberg AG. So it gave us great pleasure to help create the new building for their own organic laying henhouse in Rüti in the canton of Zurich. We developed the henhouse concept with Alfred Reinhard, the company's founder, over 25 years ago. Thanks to constant development, hosberg AG's partner businesses can now benefit from a fully developed concept that offers the ideal conditions for keeping animals. Incidentally, all we needed was six weeks for

the planning, production and installation of the building.





Chicken feeding hall for partner Globogal AG Installed in record time



The chicken feeding hall in Kallnach was built in five days. This was in spite of considerable dimensions of 67 m in length and 25 m in width and a usable space of 1,200 m². The covering is made from sandwich panels and clad with a pressure-treated formwork in spruce. Our partner Globogal AG planned and implemented the custom-made concept for the barn equipment.

// Blumer-Lehmann AG services for barn construction:

- Timber construction project planning
- Timber construction detail planning
- Production at the plant
- On-site installation
- Coordination with stall equipment provider Globogal AG or others

Blumer-Lehmann AG Compelling precision

We develop the right wood construction solution for your project

Resource efficient, economically viable, eco-friendly: these are just a few of the benefits of wood construction that are sure to win over clients, investors and architects. Thanks to our many years of experience, we are the right partner to help make your visions in timber a reality.





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// Our services:

- -Timber construction engineering
- Production and installation of timber construction
- Project management and technical planning of timber construction
- -Conversions and energy-related renovations
- -Coordination of all product stakeholders as GC or JC
- -Overall project management of international projects including production and logistics



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28 /SILO SYSTEM CONSTRUCTION

General waste disposal facility A challenging planning project in Ulm

A warehouse for 4,000 tonnes of salt, 150 tonnes of gravel and 12 vehicles, a brine mixing facility with two storage tanks, a salt silo with a capacity of 200 m³ and a fully automated modular conveyor system for loading – these are just a few of the impressive stats for the city of Ulm's new general waste disposal facility. In November 2017, BL Silobau AG received the contract for the works as the sub-contractor of a German master builder who entrusted us with the entire planning and implementation process. The construction project was implemented from January to May 2018.

'At 55 m long and 20.5 m wide, this is one of the biggest salt and gravel warehouses we have ever produced,' says Andreas Grabher, project manager at BL Silobau AG. 'All in all, it was a technically demanding project. As well as the requirements for silo and brine technology, specific fire safety provisions, a complex structure and additional circumstances such as the adjoining tram works had an impact on planning.' Incidentally, the dividing walls in the storage space are designed in such a way that they can be moved based on the amount being stored.

Salt isn't just salt

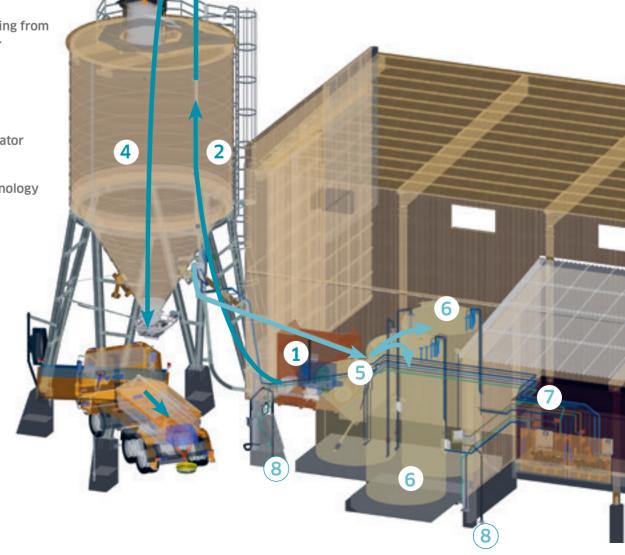
In a harsh winter, the 200 m³ is used up within an estimated two days. The conveyor system attached to the silo is therefore used to top up the salt from the warehouse where necessary. And salt isn't just salt. Depending on weather conditions, the moisture and, consequently, the weight of the salt can vary, That's when the variable rotary control comes into play. It works with the pressure sensors to automatically regulate the speed at which the salt is conveyed. This process is monitored by a remote-controlled maintenance portal. 'Thanks to

our rotary control, we can supply up to a third more salt in comparison to the previous model. Blockages in the pipe system, which sometimes occurred previously, are no longer possible,' explains Andi Grabher. The general facility is also equipped with a fully automated brine generator (8,000 l/h), which directly procures the salt from the silo and fills two brine storage tanks with a volume of 40,000 l each. Multiple vehicles can be loaded at once from two brine extraction points. An integrated measuring and weighing system records all extractions of salt and brine and assigns them to each vehicle.

Andi Grabher concludes: 'I'm happy with how the project went. Thanks to the smooth cooperation with our client, you could barely feel the physical distance and I was only on site in Ulm a few times.'

- 1 Conveyor system for loading from the hall with wheel loader
- 2 Conveyor line
- 3 Filter system for exhaust
- 4 Salt silo
- 5 Salt rinsing in brine generator
- 6 Brine storage tank
- 7 Pumping and control technology
- 8 Brine extraction







Uitikon works yard Architecturally and aesthetically ambitious

This joint project between BL Silobau AG and Blumer-Lehmann AG in Uitikon in the canton of Zurich is proof that a works yard can also catch the eye. We worked together to create a starshaped timber construction with a built-in spreading salt silo, a cold and warm warehouse, a washing hall, an open hall and a two-storey operations building. The in-built modular silo has a capacity of 100 m³. Another feature of the silo technology is the mobile return conveyor for transporting the residual salt inside the silo. The architecture and structure of the building were already described in a comprehensive listing when the contact was awarded. This also included the plans of S2 Stucky Schneebeli Architekten's planning team to clad the building and silo fully in a rough-cut rhom-

boid formwork in larch wood and to equip the silo construction with a wooden substructure. It was not clear from the outset that the works yard should be a joint project between BL Silobau and Blumer-Lehmann AG. However. in hindsight, it seems logical. This allowed the planning team and the client to benefit from our significant internal expertise in timber construction and rapid channels of communication. The challenge in planning was the facility's layout. The 12 m long slats used for the roof elements were specially made for the construction. The 17.5 m long single-piece roof elements are also a special feature. The facility was opened in September 2018 and the silo system is already preparing for its first winter



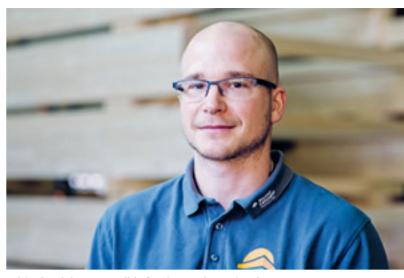
www.blumer-lehmann.ch/silo

30/SILO SYSTEM CONSTRUCTION

In conversation with Erich Eisenlohr

What exactly is your role, Erich?

Together with my team, I conduct inspections and maintenance work on silo and brine facilities and conveyor systems. Our patch covers all of Switzerland, Austria and Germany and extends into other European countries. We inspect and maintain facilities that come from our workshop as well as external facilities. Every year, our team of eight works on many different properties.



Erich Eisenlohr, responsible for the service and maintenance team at BL Silobau AG, describes his work routine.

How often does a silo need to be maintained?

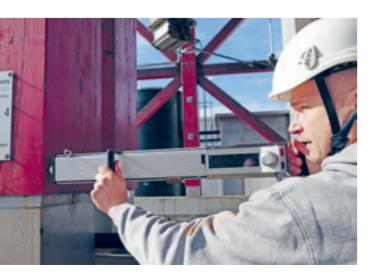
There are no general rules. It really depends on the location and the construction of the silo. We recommend that our customers have an initial service carried out five years after commissioning. For a ten-year silo, it makes more sense to inspect this more regularly, around every one to three years. Our work involves conducting an inspection on site. This involves different measurements, like the resistance of the wood or moisture. Our customer then receives an evaluation report. If necessary, we then put together a quote for the required maintenance work and perform the repairs.

Are you often out and about, then?

I would say that my job is around 50% office work and 50% on-site work with customers. I like this combination. I've been working at BL Silobau AG since 2006 and I find my work very varied. Spring is high season. Silo and brine facilities are in particular need of care after a tough winter. Depending on the situation, we go out as a team or on our own.

How has your work changed in recent years? And the requirements for your team?

The work has become more demanding in the sense that more data is recorded. At the end of the day, the silo constructions are also becoming increasingly complex. Thanks to our many years of experience, we are constantly developing our products and learning from our work in service and maintenance.



What are the day-to-day challenges of your job?

They are quite varied. The trickiest situation is when I need to convince a customer that the silo has reached the end of its shelf life and needs to be replaced.

And what do you particularly enjoy about your job?

I like working with the team. We get along really well with each other.

BL Silobau AG Fascinating capacities

Complete solutions for winter road services

Wood is ideal for the storage of salt. For over 30 years, we have offered complete individual solutions for winter road services throughout Europe. From planning to installation.

// Our complete solutions for winter road services:

- -Silo facilities for salt, gravel, sand and other spreading materials
- -Individually planned facilities
- -Salt storage depots
- -High-performance conveyor systems
- -Brine tanks and generators
- -State-of-the-art control, measurement and weighing technology

// Our service and maintenance for silo and brine facilities:

- -Comprehensive checks and maintenance for silo and brine systems from all manufacturers
- -Creation of measurement logs and detailed overall reports
- -Analysis of the condition of the facilities
- Development of renovation concepts
- -Conversion, renovation, expansion and renewal of facilities of all types





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32 /LEHMANN GROUP

Jobs in timber construction A wide variety of fields

Many, but not all, of our employees have devoted themselves to timber from the beginning of their careers. The different paths taken by Vinogithan, Markus, Valentin, Sascha and Cyrill each represent the opportunities for further training and development, career changes, specialisation or 'on-the-job' development at the Lehmann Group. And their enthusiasm for the range of tasks they perform.



Vinogithan
Premakumaran,
Modular construction
planning I GC projects,
Blumer-Lehmann AG

'I'm drawing the first 3D design.'

For Vinogithan Premakumaran and wood, it wasn't love at first sight. 'I actually prefer concrete and steel.' He gained experience in planning timber constructions as an apprentice draughtsman, during his studies at Zurich University of Applied Sciences and as an architect at Bollhalder Eberle Architektur. For him personally, a sense of well-being previously came from working with cool, thick walls. 'I would never have thought that my office in the modular construction department, surrounded by wooden walls, could be so pleasant.' Another thing that impresses him about his work: 'First of all, you have the logs from the forest, and at the end, you've got the house. At Erlenhof, you can see the entire wood processing cycle.'

Since Vinoth has joined us, he has been in charge of planning GC projects at Blumer-Lehmann AG together with his manager. 'That means talking to clients and construction managers, instructing draughtsmen and -women, assigning individual project tasks and assessing progress in construction. I'm a one-stop-shop where everything comes together.' Thanks to his to-do list and communication with the team, he can keep an eye on no less than 25 projects at a time. Vinoth saves lots of time down the line in the project workflow by creating a 3D drawing of the preliminary project in CAD. 'That makes me much quicker. The dimensions are recorded. You can monitor the design and use it for the building application. It also helps the client get a good understanding of their project.' This means that planning the entire project in 3D on a BIM platform together with all project stakeholders is a logical next step for him.



Markus Louis, Site Director, Blumer-Lehmann AG

'Nobody stands still here!'

'I walk through the world with my eyes open and take in what I see.' Markus Louis, Site Director at Blumer-Lehmann AG, actively observes what's happening around him and draws conclusions. He combines existing knowledge with new information, problems with experiences. 'That helps me find a solution quickly,' he says. 'That's what's fun about my work.' This quality is just part of what has driven him in his 16 years at Blumer Lehmann. He seeks out contact with people and picks up on their personal needs. And he knows what's required for good teamwork. Today, he's responsible for 45 assembly staff – mostly carpenters. 'My goal is a happy employee who stays for a long time,' he says.

Marcus – himself a trained carpenter who has also qualified as a foreman – emphasises the difficulty of finding well-trained, skilled staff time and again. For him, what makes a timber construction specialist stand out is professional skill, personal flexibility and plenty of passion. 'Our business is constantly developing. The projects change, the timber construction industry, the methods, the production technology … Here at Erlenhof, nobody stands still. Anyone who wants to can progress.'

He personally finds change exciting and has taken the opportunities to develop himself. Each of his responsibilities has helped him progress professionally and personally: taking charge of the assembly storeroom and the entire vehicle fleet, waste disposal at Erlenhof and the role of installation safety officer. Recently, he has been taking on new strategic responsibilities as a new member of the Executive Board at Blumer-Lehmann AG.

12/2018 www.lehmann-gruppe.ch

Cyrill Bucher, Intern BSc Woodworking, University of Applied Sciences, Biel

'The combination of studying and working with wood is the best path for me.'

Writing specifications, talking to tractor mechanics, identifying suppliers, testing tractors, visiting potential platform trailers, detail planning for resources, developing investment applications for the board. All in close collaboration with colleagues from production and logistics. As an intern at Blumer-Lehmann AG, Cyrill Bucher is a



In his nine-month internship, Cyrill is combining his timber-related expertise from his joinery apprenticeship with the theory from his first few years at university to perform his wide-ranging duties. As he is optimising internal processes, he identifies needs, assesses workflows, develops recommendations and ultimately hits upon the solution as a 'catalyst'. Cyrill knows the business and the people who work here. And he enjoys performing these tasks in a team and taking responsibility.

If he could, Cyrill would choose the same career path today all over again. Well, almost the same: 'Today, I might do carpentry instead of joinery.' In any case, a profession working with wood and then a degree on top. 'It's the best path if you have a professional aim like I do and aren't afraid of hard work. I can well imagine moving into the field of production engineering and digitisation.'



Sascha Aerne, Project Manager, BL Silobau AG

'There's no textbook for silo construction'

'Complex and architecturally challenging' is how Sascha Aerne describes development in silo construction. 'Sometimes, I'd almost like a standard silo project now and then,' he laughs. Yet whether it's app-controlled, fully integrated silo facilities with sophisticated architecture and lots of electronics or a mechanical silo tank: 'The challenge lies in planning the exact system the customer needs.'

Sascha Aerne chose the carpentry apprenticeship at Blumer-Lehmann AG back in the day because he likes to construct, build and create. Later, he acquired experience on building sites all over Switzerland. He could never have imagined himself working in an office. Yet, several years ago, he swapped his work in assembly for a structured day-to-day in the office at BL Silobau AG. He has now been planning and implementing silo facilities as a project manager for eight years - in the office and in 3D on his computer. The role still fascinates him because: 'We are constantly looking for new applications and expanding our remit'. He often draws on his knowledge from his training as a technical apprentice as well as his skill as a carpenter and his practical experience. 'I'd like to specialise in structural analysis,' says Sascha, 'but the theory of how to build a silo can't be found in any textbook. We have developed the knowledge with every single project and it is constantly growing."



Valentin Niedermann, Head of Technology and Processes, Lehmann Holzwerk AG

'Wood is a new material for me'

Although he's only been at Lehmann Holzwerk for a short time, Valentin Niedermann already knows many of his colleagues at Erlenhof by name. An induction period? With his duties, that takes care of itself. The qualified multi-purpose mechanic, who is also a trained project manager with an advances studies qualification in business management, is in charge of technology and processes at Erlenhof and is responsible for the planned expansion of capacity in all areas of the business, i.e. for the entire Lehmann Group. Not an easy task, but an area that Valentin knows well. Just working with wood is new to him. 'Although I really always preferred wood, I previously worked in metalworking and mechanical engineering,' he says. Here at Erlenhof, it's this experience as a project manager, his quick mind and ability to draw conclusions that really count. Yet Valentin could also imagine expanding his knowledge of wood at some stage. 'Currently, it isn't top priority for my role. But knowing the material and its possibilities better and expanding my own horizons as a result is something I'm very interested in.'

When he speaks to various people about the interests, processes and concerns of the different divisions of Lehmann Group, he is already dealing with 'wood culture' on a daily basis. He describes the way people deal with each other as 'pragmatic, which makes it very different from other industries. A bit more homely.'

www.lehmann-gruppe.ch

34/LEHMANN WOOD PROCESSING

Naturally Swiss wood! A profile of Urban Jung, CEO Lehmann Holzwerk AG





Urban Jung inspects the quality of cut timber products

Urban Jung is fascinated by the holistic processing of local wood. As CEO of Lehmann Holzwerk AG, he is responsible for the sustainable timber cycle at Erlenhof, from log processing and waste wood products to energy production. He has clear ideas and urgent demands when it comes to the Swiss wood label, and a vision that's coming ever closer.

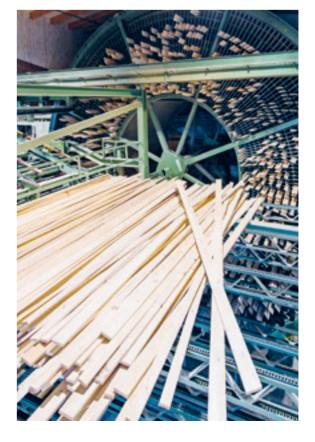
At the moment, major changes lie ahead at Erlenhof. Urban, what does the planned expansion in capacity mean for Lehmann Holzwerk AG?

We are expanding our existing facilities, the sawmill and planing mill, with a sorting facility and a finger-jointing mill. In pellet production, we need to expand our wood shavings drying facility and our pellet press so that the additional quantities of waste wood at Erlenhof can

be reused. This has an impact on the production of process heat, which we also need to expand. All in all, the investment means that we can massively increase our productivity in the production of sawn timber, pellets, bark briquettes, small animal litter and heat energy. At the same time, the new facilities are boosting automation so that our production can continue to be competitive and economically viable. These measures will also boost our internal value creation.

Could you say that this investment is necessary due to the increasing need for different timber products?

Absolutely. Wood construction is enjoying a global boom. Large-volume, multi-storey buildings are increasingly being built from wood. We see that here in the sawmill and planing mill as



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wood consumption increases. We've been permanently at full capacity for a year and a half. It's a similar situation for wood pellets. In the past four years, production has increased by 20% and we're expecting a further increase. These trends confirm that it is right and worthwhile that we handle the entire timber life cycle, from log processing to building and silo construction, here at Erlenhof. Concentrated expertise, joint development, intensive collaboration, rapid communication – these are key advantages we cherish and want to continue to expand in the long term.

What role does Swiss wood play in these future plans?

As ever, Swiss wood is our mainstay and will remain so. However, we are constantly forced to compete with abroad. That's our benchmark. 'Swiss wood' needs to establish itself as its own standard worldwide and the price for Swiss wood needs to be able to keep up with foreign wood. That's the only way we can remain competitive.

Erlenhof wood is already FSC certified. Why is the Swiss wood label still so important?

Our wood comes from sustainable forestry in an area of around 80 kilometres surrounding Erlenhof. This means it meets the high standard of the Swiss wood label. It also stands out because of short transport routes. In environmental terms, that constitutes a major difference from the FSC certification, which only means that the raw material comes from monitored, sustainable forestry. The FSC doesn't indicate anything about the country of origin and the corresponding production standards. Nor does it indicate anything about the transport routes covered and the associated CO₂ emissions. Nev-

ertheless, we also still require the FSC certification, particularly for our export activity.

What does Swiss wood mean for the client and their construction project?

First of all, anyone who builds with wood is essentially already choosing a renewable raw material with lots of benefits: it's easy to obtain, constantly grows back, requires little energy to process and is versatile. And then wood also has this positive impact on pretty much everyone. It feels cosy. It's pleasingly natural. With certified Swiss wood, there's the added advantage that the client knows exactly where the material is coming from and that they are actively saving energy due to short transport routes.

With their choice, they are also supporting Swiss forests, the local timber industry and lots of associated jobs. They are therefore making a considerable contribution to a constructive value chain.

As an experienced timber specialist, what developments do you predict for the wood industry?

For 30 years – since my time as an apprentice carpenter – I've seen how timber construction and the wood industry have developed. In recent years, in particular, new technologies and chemical processes have constantly opened up new uses for wood, such as insulation, packaging, fuel and much more. And, as we have already mentioned, energy production from wood is also on the rise. But what I'm personally most excited about is the development of modern solid wood construction. I'm convinced that there will be a whole lot of new developments in this area in the years to come. Building solid wood walls was always my vision.



In conversation with the logistics expert on the company site.

Now, when I look at how solid wood construction is evolving around the globe, that no longer seems too far off. And I also hope we'll get there soon here at Erlenhof!



Up to 90% Swiss wood from the local area is processed at the Lehmann Holzwerk.

www.lehmann-holz.ch

36 / LEHMANN WOOD PROCESSING

Pellets, briquettes and animal litter Swiss wood for sustainable warmth and security

Lehmann Holzwerk AG fully and sustainably processes logs that mostly come from Swiss forests. As well as classic sawn timber, other products are produced from saw and plane shavings and the bark that builds up as valuable 'waste products'.



Pellets are an eco-friendly and economically viable way to heat your home. They can be used in pellet heating systems for CO2-neutral heat production.



// Lehmann pellets

- Are made from saw and plane shavings from Swiss wood, without chemical additives
- Provide clean and climate-neutral heating
- Are cheaper than fossil fuels and pricing is not dependent on the price development of fossil fuels
- Have a low energy balance during production
- Are easy and compact to store
- Will also be available in sufficient supply in future as the sustainable raw material wood is regrown in the local area, also ensuring that hardly any 'grey energy' is used in transport

Sales units

15 kg bags



Big bags of 1,000 kg



Quantities by agreement



Another unique natural product produced from pure bark from local spruce and pine trees are our bark briquettes. They produce two to three times more energy and heat than hardwood. The briquettes, in the shape of a hexagonal cylinder, are the ideal addition to wood fires and can be used in stoves or fireplaces.



// Lehmann bark briquettes

- Produce a lot of heat
- Burn for a long time, up to around 10 hours
- Require less storage space than wood while producing the same amount of heat
- Are a CO₂-neutral fuel
- Are ideal for stoves and fireplaces

Sales units

Bunch of 5



Pallet (144 bunches)



Litter for small animals, also produced from our bark, is another product from Lehmann Holzwerk AG. Available from selected retailers and pet product wholesalers, small pet owners appreciate the litter's natural fresh smell and absorbency.



// Animal litter

- Ideal for small animals, birds and reptiles as well as garden design
- Made exclusively from Swiss spruce and pine bark
- Highly absorbent
- Natural forest smell
- Encourages small animals to nibble and keeps them busy
- 100% compostable

12/2018 www.lehmann-holz.ch

Lehmann Holzwerk AG Fascinating diversity

We process every bit of the wood

We are the heart of our sustainable timber cycle at Erlenhof. From log processing to energy production – at Lehmann Holzwerk, every bit of local wood is used.

// We offer a full range of:

- -Sawn timber
- -Rough-planed timber
- -Various assortments of slats
- -Façade cladding, balcony and terrace railings, floor strips, planed products
- -Packaging wood and timber for construction
- -Pellets, bark briquettes, bark litter for small animals





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38/MISCELLANEOUS

Swiss Prix Lignum Gold for Chäserrugg!

The Chäserrugg mountain station: 'A wood construction with its own vocabulary and own dimension. Jacques Herzog and Pierre de Meuron use wood in an exemplary fashion to build at this height. They integrate the existing elements into a new whole that fits the surroundings outstandingly thanks to the wood used. The result is not event architecture, but a powerful sense of peace on the mountain. This makes it a role model for many tourist operators building in sensitive environments.' This was high praise from the judging panel for the 2018 Prix Lignum.

The summit building on Chäserrugg opened in 2015. In terms of wooden construction, the building took the classic art of carpentry to new heights: impressive overhangs, sharp roof vertices, huge balconies supported by concrete trunks that look like trees. Blumer Lehmann



had a major involvement in the implementation of the gold project. There was close collaboration with the architects as early as the project phase. Our team faced numerous challenges in planning and implementing the construction, such as transporting the components up the mountain and the Alpine weather conditions at 2,267 m above sea level. The company Ghisleni Partner AG (St. Gallen/Rapperswil) had overall responsibility for site and construction management.

Innovation in wood Sitting on Swiss products

The Innovation Park in Dübendorf, a meeting place for research, development and innovation, opened in March 2018. In keeping with the theme of the park, various pieces of outdoor furniture made from spruce decorate the outside of the information pavilion. The sculptures were inspired by Swiss inventions: a Lindor truffle, a Freitag bag as a relaxed bench, a huge On trainer to lie in or a massive cricket from the company Essento that specialises in edible insects.

Our architect from the Free Form department based the outdoor furniture on scanned data.

The furniture was then milled from glue-laminated wood on our CNC machine.



A mock-up for India Free Form also works by hand

Our latest Free Form design, handmade this time by our specialist Roli Aichele, is currently on the way to the customer in India where it will act as an advertisement for modern wood construction outside the Vadehra Art Gallery in New Delhi.



Bees cause a buzz 'Bienen-Werte' Learning Centre

In September 2018, the 'Bienen-Werte' Learning Centre opened at the Untere Waid high school in Mörschwil. Here, a trail open to the public imparts plenty of useful information on bees and the role they play in nature. In an experiment and teaching room with interactive stations, registered groups can learn about bees in a fun environment (register on

www.bienen-werte.ch). The apiaries were built from bee-friendly wood and blend into the natural environment. A special feature of the façade's formwork in spruce is the 3D milled honeycomb shapes that have already become a widely noted symbol of the centre.



2018 summer party Erlenhof in search of its super troupe

Giving their best again and again seems to be part of our employees' DNA. Not just at work! They did it again at this year's summer party, where we went in search of Erlenhof's super troupe. Twelve departments rehearsed their own performances in advance. What took place at the big event was then nothing short of phenomenal: acrobatics, dancing, mime, structures, spoken word, engine noises and much more! Our winners were the super troupe from silo construction, led by team captain Erich Eisenlohr.















// Space is tight at Erlenhof

As we need more space for our company premises, we have submitted a request to the municipality of Gossau for a partial rezoning. This project requires a shift of the Loobach creek and changes to the access road. We hope that this move will help remedy our lack of space, permitting added investment in future. This also includes a permanent location for our project management offices.

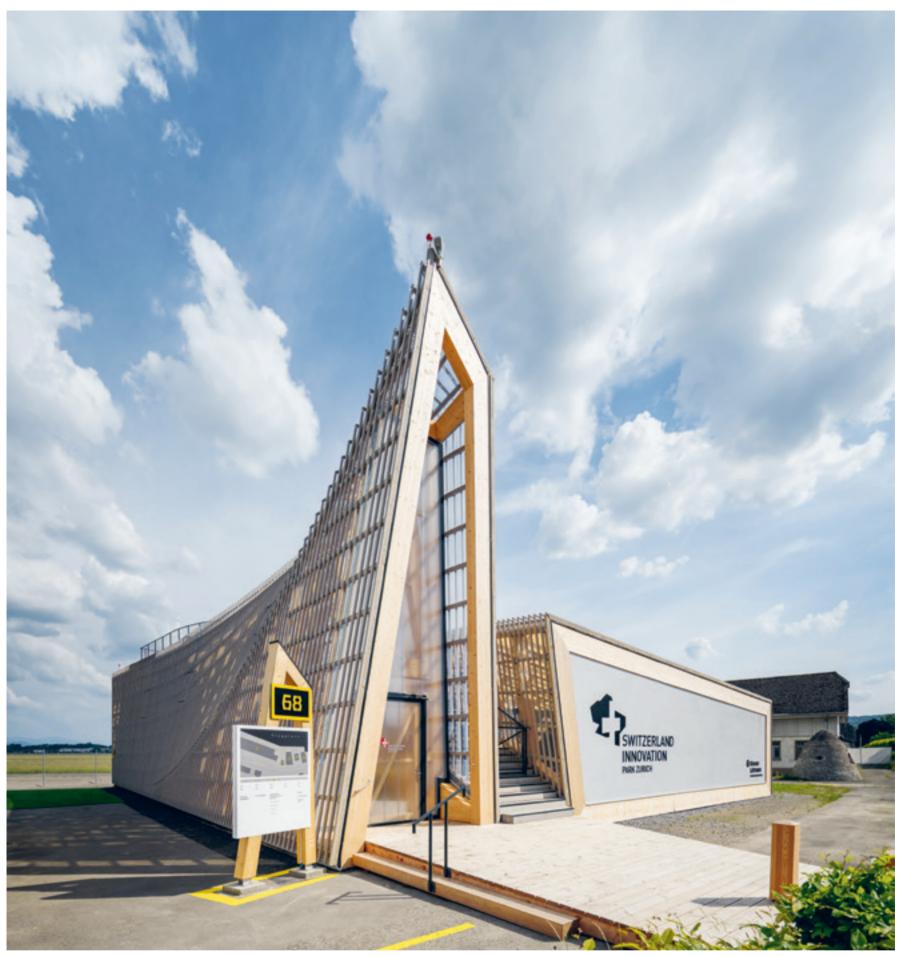


Wood construction project management office expansion

Second-hand modules with prospects

Our wood construction project management team is constantly growing and had been scattered around various locations on site. To ensure that the newly formed specialist team is able to benefit from faster and more direct channels of communication around its supervisor Christian Lüthi, the existing offices have

been expanded and a second-hand modular construction added. As we are also slowly running out of space on the ground, we have built it on a lofty metal structure. We are convinced that this location will enable our project management team to continue keeping an eye on everything while looking ahead to the future.



 $\hbox{Cover and back page: Pavilion at the Switzerland Innovation Park Zurich, $\tt D\"ubendorf. } \\$

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