

BUILDINGS



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Portfolio

If you are researching wooden construction elements for modern sustainable building, you need to know about KIELSTEG. Especially when the requirement is to create spaces that are uncluttered and give you the maximum flexibility to configure – and in future, reconfigure – the interiors and how they are used.

This book presents a selection of the buildings that have used KIELSTEG in Europe in recent years. Buildings of different types, purposes and sizes but freedom in the interior is a theme that runs through them all.





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KIELSTEG

Construction Elements

KIELSTEG is a wooden structural element that is primarily for use as a roof or structural floor. It has a high load-bearing capacity relative to its weight, which means it can be used very simply for wide spans, without consuming extra height for supporting beams or bracing. These characteristics give you architectural freedoms that other products don't provide, and especially they allow you to make spaces that can accommodate changes and rearrangements as the use of the building evolves.

KIELSTEG is a lightweight cellular structure that achieves its high performance by concentrating the material in the stressed zones – this also means that it uses wood very economically. Wood is one of the few natural, renewable materials with significant strength and stiffness. Wood incorporates CO₂ until it rots naturally or is burnt as an energy source. At the same time, trees give us back the oxygen we all need to live.

This means that wood is enormously important to the planet, besides its use as a building material and fuel.

Building with wood is increasingly coming into focus driven by population growth, technological progress and the need to use resources and do all kinds of activities in a more ecologically sustainable way. When we build with wood, we store CO₂ for the lifetime of the building, while new wood grows and keeps the cycle of CO₂ sequestration turning. Constantly rising demand for raw materials will bring technologies to the fore that use wood, and especially that use wood highly efficiently.

**Offices
and workshops
small factories**



Caritas Workshop

Bad Mergentheim and Lauda
GERMANY

**“KIELSTEG makes space
for architecture.”**

The Caritas association of the Tauberkreis district built two new workshops in Bad Mergentheim and Lauda-Königshofen. The design of the two new buildings focused on achieving the best possible quality of the interior space and a motivational

atmosphere. The architects exploited the advantages of KIELSTEG both as a roof and also as a practical and attractive design element for the interiors.







The two construction projects incorporated approximately 6,000 m² of KIELSTEG wooden elements in total – among them, some high load-bearing elements spanning more than 22 m. Both buildings were designed by the architecture and engineering firm of APParchitekten in Lauda-Königshofen.

As well as the actual workshop areas, each building also contains a canteen with food serving, an administrative section with offices, meeting and common rooms and an open-plan reception area. All the rooms are bright and full of light and designed to be as positive as possible for the mood and motivation of the people working there.

The KIELSTEG system which forms the low-profile roof structure also provides a simple way of creating a pleasant atmosphere inside the building. The surface of the wooden elements is planed and otherwise left in its natural state, and as the elements

are laid, the underside begins to form the warm and textured ceiling surface that changes the feeling of the space. No cladding of the ceiling is needed for either fire prevention or aesthetic reasons. The utilities can be directly attached to the wooden ceiling, which creates additional options for the interior design.



Public Works HQ

for Ried im Innkreis
AUSTRIA

The town of Ried im Innkreis built a new centre for its public works department and decided to be ambitious about both the functional concept and the architecture. Urmann Radler architects from Linz won the competition to design a building as a headquarters for the street cleaning, maintenance and waste collection and the vehicle fleet.





The new single-storey building stands between an industrial zone and a residential area on the southern edge of the town. With a floor area of 2,270 m², it gathers a number of public works activities in one place that were previously scattered across multiple locations.

This creates a clear functional organisation where people don't have far to go between the offices, the different workshops and the garages.

The sensitive site between the industrial and residential zones resulted in a number of special requirements for the design. All of the activities that produce noise, the garages and their access ways face towards the industrial zone. The garage for cars is set into the slope of the hill along the edge of the site next to the residential district, which hides the facility from sight and also creates an acoustic barrier.

The low-level garages enabled the creation of a green strip with bushes and trees that forms an additional natural boundary. All the vertical parts of the building are made of reinforced concrete, with a combination of solid walls and skeleton framing.

KIELSTEG elements are used for the roofs of the workshops. They cover large spans, which ensures flexibility of the space to accommodate changes in the layout and equipment over the coming years. The underside of the KIELSTEG elements is left exposed and visible. The facade is clad in vertical pre-greyled larch strips, underlining the unity of the building, with a peaceful mood at the transition between residential and working areas. The timber construction was done by Swietelsky carpenters.





Franz Hasler AG Factory

Bendern

LICHTENSTEIN

"The roof persuaded us!"

Hasler AG is a construction company in Liechtenstein specializing in wooden construction, solar installations and construction management, with about 50 employees. As a family-owned company now in the fourth generation, Hasler has 100 years of craft tradition to live up to. A lot has changed since the beginning, but the fascination and love

for wood as a building material have stayed the same.

The requirements for the new company building in the town of Gamprin, Liechtenstein, were to make a sustainable building with a sophisticated energy concept, with minimal energy consumption and optimal functionality.





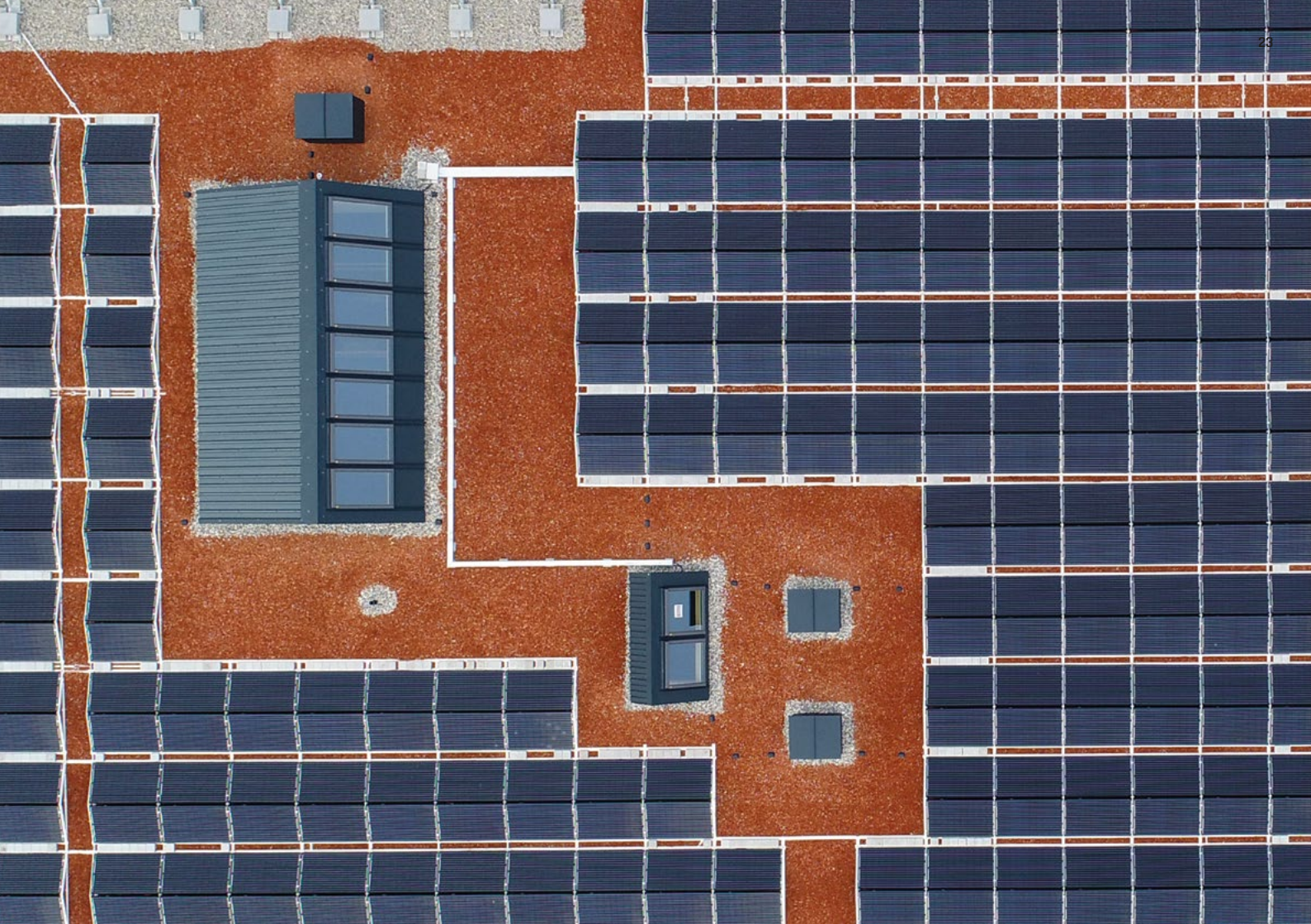
The size of the site and the local building regulations did not leave much room for manoeuvre. The result is a simple and straightforward two-storey building, aligned with the existing building lines. The ground floor houses a factory area with storage space and facilities for the workers. The upper floor is divided between offices and the workshop for the solar department. The office tract is at the end of the building. The different functions are clearly represented on the outside. Thanks to the situation between the Rhine (Rhine embankment) and the canal, the factory can be accessed on two levels.

The facade of larch shingles is a reference to traditional architecture of the region. As a company that builds in wood, it was clear from the outset that the structure should be mainly made of wood. In the end, only the rear wall of the ground floor, facing the Rhine embankment, and the foundation slab are not made of wood.



The outer and inner walls are made of wooden elements, the first floor is made using a wood composite system, and the roof is made of KIELSTEG elements. The 1,474 m² roof is home to an array of photovoltaic panels that make the site self-sufficient for energy. The remaining area of the roof is green.

The choice of KIELSTEG for the roof was based on the wide clear span on the inside, combined with high load-bearing capacity as a platform for the solar array on the outside. A green roof construction which is permanently shaded by the solar panels also needs excellent hygrothermal performance – and this is assured by the classical warm roof layout.





Preciplast Factory

Wartberg
AUSTRIA



Preciplast GmbH makes precision plastic parts for automotive and medical applications and recently built a new factory in Wartberg an der Krems in Upper Austria.

The building has an architectural quality that goes well beyond an average factory and it is also outstanding as a sustainable building.



The factory has a footprint area of 1,600 m², and it incorporates offices and the manufacturing plant for medical products. The design is a minimalist composition of rectangles, which gives the building a quite striking appearance but at the same time, allows it to float gently on the landscape. The views from the first-floor windows are spectacular: on one side you can see into the hills of the Kremstal, on the other you have the Traunstein dominating a mountain panorama.

The factory space on the ground floor is spacious, full of light and built entirely in wood. The design is by Arkade ZT architects in Linz.

The building was erected by LM Holzbau GmbH, and opened after a construction period of eleven months.

The roof of the factory space was made using KIELSTEG elements, with spans of 10 m, laid on three longitudinal supports - the outside walls, and one longitudinal beam on the mid axis. This middle beam only needs three pillars, which meets the company's priority of keeping the space as flexible as possible, to enable adaptations to market needs over the coming years. The KIELSTEG elements are 28 cm high.



A-Nobis Champagne Factory

Zurndorf
AUSTRIA

In Zurndorf, the wooden construction company Gollubits built a factory for sparkling wines for Norbert and Birgit Szigeti. The passion for quality and innovation can be felt in every corner of the facility. A-Nobis is the brand name for their range of sparkling wines.

With A-Nobis, Birgit and Norbert Szigeti are setting out for new horizons. Not just the product, but also the winery and the build-

ing materials are elements of the departure. Their ambitions are to make outstanding sparkling wines, as sustainably as possible, and to provide a magical visitor experience.





The sustainability begins with the site, about 3 hectares just a short walk from the Zurndorf nature reserve. The buildings only occupy one-fifth of the site; the rest has been converted from tilled fields to a highly biodiverse natural habitat.

A wood of 3,000 trees has been planted, and there is a pond. The winery building merges into this landscape with its green roof and green arcade around the 250 m of the outside walls. The green concept doesn't stop at the outside: the building is designed for maximum sustainability.

That green arcade is a natural climate control system, reducing energy needs; a photovoltaic system on the roof ensures a 100% green energy supply, and feeds excess energy into the grid. The production process is designed especially to save water.

A-Nobis follow the classic bottle method of sparkling wine production. The factory is designed for a production volume of 500,000 bottles per year. The factory is certified organic. The building itself is not only embedded in nature, it has nature at its centre: there is a rec-

tangular atrium with a circular opening in the roof, a lawn and a fountain in the middle. The roof, made of KIELSTEG elements, extends from the interior of the building both outwards to cover the arcade, and inwards to form the oculus above the atrium.

The total footprint of the building is 4,200 m²; the KIELSTEG roof area is 2,634 m², made of 33 cm high elements. The architecture, by Architects Collective of Vienna, leads visitors from the natural landscape into the heart of the operation, where they can take a tour and see how the sparkling wine is made – also a natural process – and then taste the product in this refined space, open to the sky.

“KIELSTEG fits perfectly into the green concept of our sparkling wine cellar.”





GAASS Florian GmbH Factory

Grainet
GERMANY

“Create efficient
work spaces.”

GAASS Florian GmbH in Grainet has been a specialist in plumbing, roofing and carpentry work as well as facades since 1986.

The existing buildings were typical of a mid-sized craft business that had grown over the years, gathering a number of extensions on small floor plans. The expansion increased the total floor area by almost threefold, from approximately 600 m² to 1,600 m².

The architects used wood and steel to give the ensemble a unified overall appearance while also signalling the functional differences of the building parts. For example, the three-storey office building is set apart by a screen facade of solid vertical larch wood slats, which is illuminated.

In order to save space, the factory was integrated into the rocky slope and has an eye-catching rusted Corten steel facade. But the factory is equally impressive inside: The roof is made of KIELSTEG elements, a little over 14 m long, which cover the interior space as a single span without any internal pillars in the working area.





Takacs + Partner AG, Cabinetmakers

Russikon
SWITZERLAND



Takacs + Partner AG in Russikon, Switzerland, are a firm of cabinetmakers and their new building features wood as the main material. The two-storey building is 15 m wide and 27 m long and houses the workshop, the showroom and the company's offices. Sustainability you can feel.

Mr. Takacs, the client, says that the wish to build in wood led them and building firm to seek out Holz Stürm, who recommended combining KIELSTEG and CLT. The client was soon persuaded that this was the right choice, based on value for money, the visual appearance and especially the ability to cover the floor plan without internal supports.

Around 700 m² of KIELSTEG elements in the sizes KSE 560 and KSE 485, and about 500 m² of CLT wall and structural floor elements went into the building. "We used

each material according to its strengths: KIELSTEG elements for the wider spans and CLT for walls and floors with smaller spans", explains Michael Dünner from Holz Stürm AG. As the project developed, everyone involved became enthusiastic about building in wood.

The positive properties of CLT and KIELSTEG in terms of thermal conduction, creation of a pleasant working space and the ability to make open-plan layouts free of internal supports are just one side. The rapid construction is another: "That was a really quick construction job", comments Takacs. Thanks to the prefabricated parts, it only took four months, from November to March, from breaking the ground to topping out. The building went into full operation in the following May.



German Red Cross Base

Weingarten
GERMANY

The new base for the Red Cross ambulance service in the Bodensee-Oberschwaben region, in the town of Weingarten in Baden-Württemberg has been built using wood for sustainability.

The roof and structural floors of the four-storey building are made of KIELSTEG. With this project, KIELSTEG Deutschland GmbH, based in Burghausen, demonstrates the advantages of KIELSTEG's light weight and space-spanning performance.



“High load-bearing capacity with low dead weight.”

The new centre for the Red Cross is scheduled to be finished in 2021. It will provide space for an ambulance station, administrative offices and parts of the Red Cross training school for Baden-Württemberg.

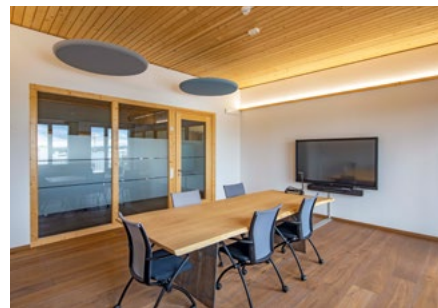
Thanks to the wide uninterrupted spans of the floors and roof, the spaces inside the building can be used very flexibly. In this way the building is ready for future changes in the room layout and use. Another key factor in choosing KIELSTEG for this project was the high loadbearing capacity combined with low weight of the elements, which helped keep the load on the foundations within specified limits.

The shallow pitched roof consists of KSE 485 elements in two single spans of 12.3 and 7.2 m. The roof loading is 1.95 kN/m^2 , which includes a layer of gravel and the photovoltaic panels;

the snow load allowance is 0.77 kN/m^2 . The structural floors are made of KSE 610 elements, here covering the $12.3 + 7.2 \text{ m}$ as a continuous system over two spans.

The dead load of the floor construction is 2.85 kN/m^2 , and the service load allowance is 3.8 kN/m^2 for office use, including the weight of partition walls. Vibration calculations estimate the first natural frequency of the floor at $f_1 = 6.4 \text{ Hz}$.

The new building was designed by the architects and engineers of the Thomas Hendl practice in Markdorf, with structural engineer Hubert Jehle of Ravensburg.





Volunteer Fire Station

St. Martin am Wöllmissberg
AUSTRIA

“We hope the construction method will inspire other towns too!”

In St. Martin am Wöllmißberg in western Styria, a new station was built for the local volunteer fire brigade. With an eye to sustainable building and the resources available in the area, the municipality specified in the tender that the building should be a wooden structure.

Architect Salvatore Sylvester Valeskini created a design that makes the best use of the challenging site on a slope and incorpo-

rates all the specified functions clearly and practically.

The shape of the building makes a distinctive statement while also integrating unpretentiously into the village and the topographical context. The station is built entirely of wood and it shows this off everywhere, with wooden surfaces visible on the inside and the outside. Even in the heavily used garage area, where the fire engines and other appliances are kept, the wooden surfaces are unclad.

A challenge in this type of building is the large amount of pipework and wiring that has to be integrated into the structure, and here wooden construction has an advantage because all the parts can be precisely prefabricated. For the facade, the architect chose a treatment that could be seen as a tongue-in-cheek reference to the purpose of the building: the wood is evenly charred on





the outside. This protects the wood just as well as chemical preservatives and is also an old traditional technique in the region.

The station was built by the local carpentry firm Holzbau Grinschgl using CLT for walls and KIELSTEG for the roof. The high degree of prefabrication also shortened the construction time. The KIELSTEG elements are 48.5 cm high and cover the garage, which is 12 m deep, in a single span. A considerable amount of the construction work was done by the members of the fire brigade themselves.



**Production and
logistics buildings**



Rosenberger factory for stamping technology

Fridolfing

GERMANY

“Flexibility of use is key to the long-term profitability of factory buildings – and suitable roof structures are key to meeting this need.”

When Rosenberger GmbH was planning a factory building for stamping and assembly, a floor plan that would allow maximum freedom of use was a central criterion.

Rosenberger Hochfrequenztechnik GmbH, a mid-sized, family-owned industrial firm, based in Fridolfing in Bavaria, is a world-leading maker of connector systems for radio-frequency, fibre optics and high voltage technologies, for the automotive and telecommunications industries, medical and industrial electronics and industrial

sensor technologies. Out of a total of 10,000 employees at manufacturing and assembly sites and sales offices in Europe, Asia, and North and South America, about 2,000 people work in Fridolfing.

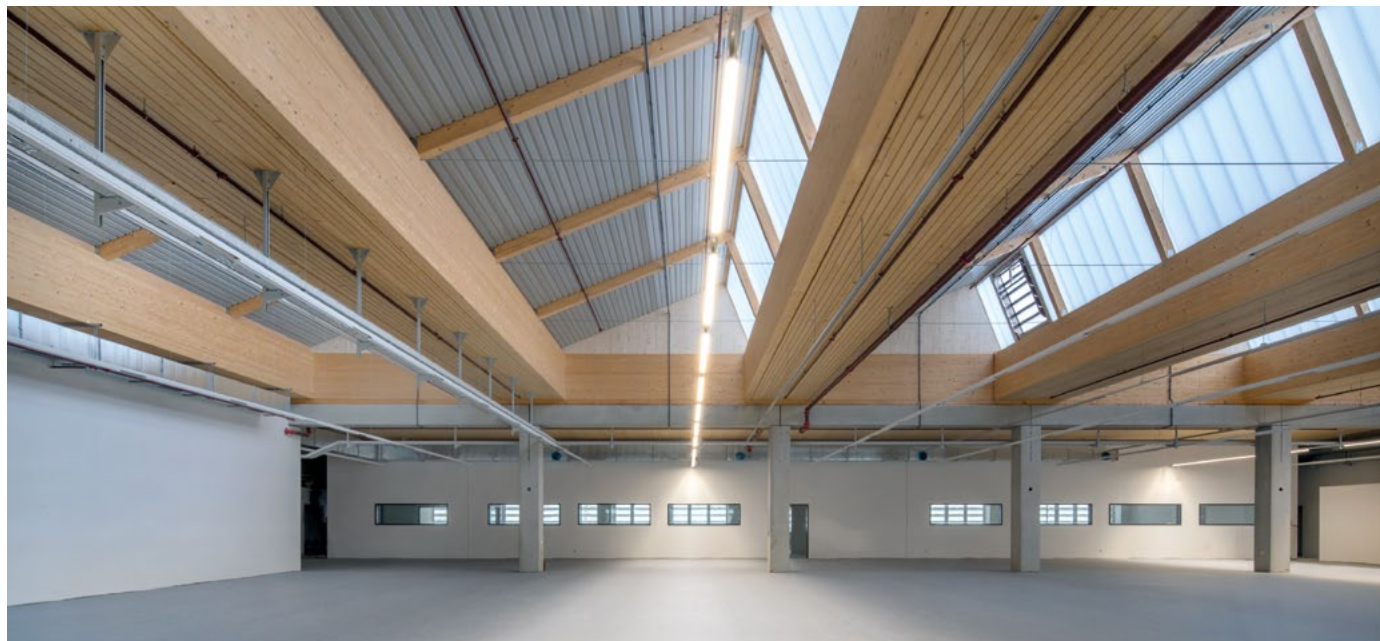
The aim with the new assembly facility was to have the maximum of space for the machines and to allow an efficient flow of material.



The plan was to locate stamping processes on the ground floor, and to pass the parts up to the floor above for assembly into complete connector plugs. It was important to have a layout that could be easily rearranged, to react to future changes in production. These requirements needed to be combined with high-quality architecture, since the new building is part of a corporate architecture concept for a completely new section of the site, including a variety of buildings for offices, production and logistics.

The architects were Hinterschwepfinger Projekt GmbH, specialists in industrial buildings. With KIELSTEG they succeeded in reconciling all the demands in a unified concept. The building an impressive demonstration of how KIELSTEG can close the gap between functionality and architecture in a building of this size.

The roof was built with 2,300 m² of wooden elements. These were up to 19.7 m long in single spans, so that the space of 53 x 53 m was covered in three spans with just two rows of supports. This was achieved with elements that are just 61 cm high, which helped the designers to keep the two-storey building low enough to fit into the scale of the site. The middle section, which houses the central assembly area, uses a sawtooth roof to make best use of natural light. The sawtooth sections rest on beams formed using KIELSTEG elements. The outer sections of the roof are flat and formed with pre-cambered KIELSTEG elements spanning 19.7 m.



Joh. Johansson Coffee Roastery

Vestby
NORWAY

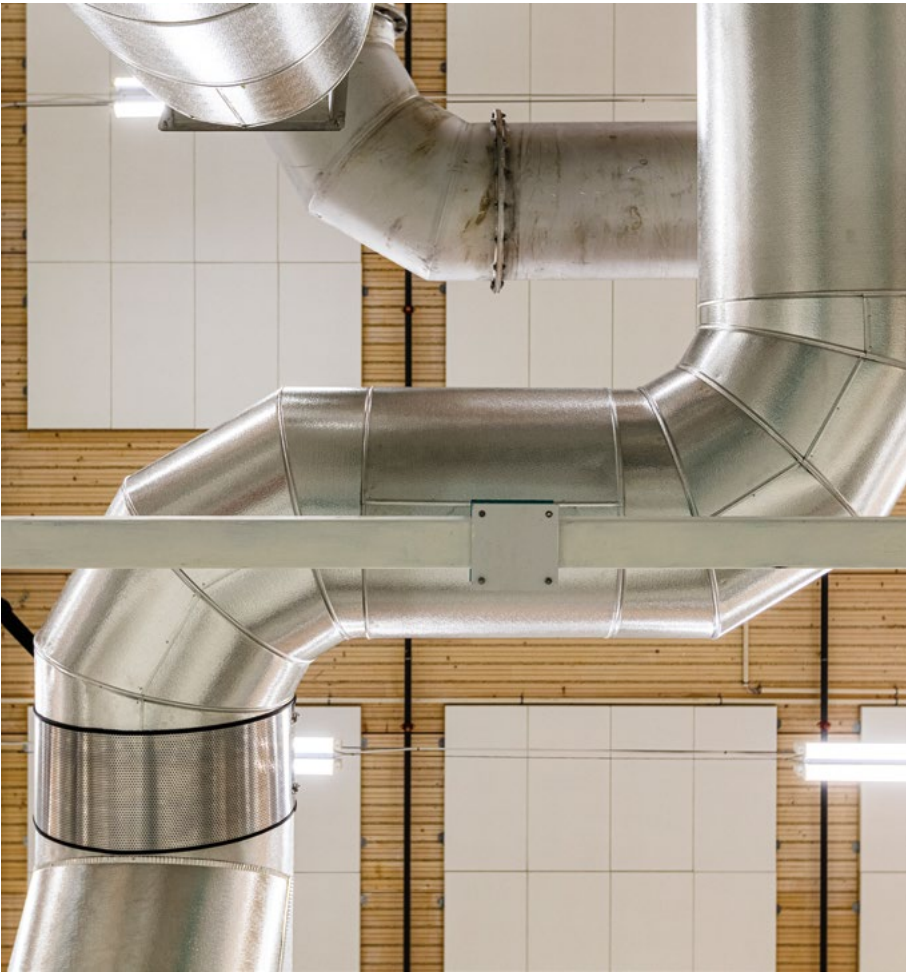
The coffee roasting operation of Joh. Johansson is the biggest in Norway, with an annual production of 12,000 tonnes – about 35% of the total coffee consumption in the country. After 61 years in central Oslo, in 2020 the company left its original location and moved to a new roasting plant in Vestby, 50 km to the south of the city.

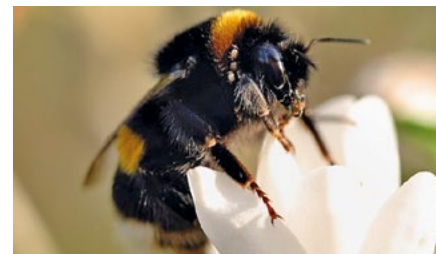
In building the new roastery, the Joh. Johansson Kaffe AS have set a new standard for sustainable industrial buildings. The plant runs on 100% renewable energy and emits 85% less CO₂ than the old plant.

**Winner of the energy and environment
prize Norsk Energi 2019**









Solar collectors integrated into the façade, combined with a heat recovery system for the roasting ovens, make the building more than self-sufficient in energy for the production process.

The location is on a plot that was not usable for agriculture, and the amount of wood that had to be felled on the site was accounted for in the CO₂ balance sheet. The building is completely made of wood, a substantial proportion of it from local sources.

The concrete foundation was made from low-carbon concrete and the steel used for reinforcement and in the wooden structure was 100% recycled.

The architect Astrup og Hellern points to the flexibility of the building, which will allow for future expansion and changes in the production plant and energy generation without rebuilding or changing the appearance of the building.

For example, a future increase of the solar capacity could achieve climate neutrality operation of the building for 60 years. The 6,780 m² roof, made of 80 cm-high KIELSTEG elements, was designed with this in mind and has an ample reserve of loadbearing capacity. Architekt Astrup og Hellern is convinced that the values and social responsibility of the company and its commitment to sustainability had to find expression in the architecture and material of the building.

The work was guided by the goal of achieving the 'excellent' category of BREEAM-NOR, providing long-term protection of the environment. The result is probably the most advanced and most environmentally-friendly coffee roasting plant in the world. The choice of the building materials, the location and the energy sources were the top priorities, and long-term social responsibility is a fundamental value of the company.

Bumblebee project:

Eco-sensitivity is when you take care of the surrounding biotope, its growth and diversity. Special nest boxes for bumblebees ensure the pollination of nearby plants. The bumblebees are essential pollinators for many plant species, including those around the site of the coffee roastery.



Zotter Chocolate Factory

Riegersburg
AUSTRIA

By now, everyone knows Zotter chocolate. But highly original chocolate creations are not the only thing the company is known for. Environmental awareness and sustainability are also part of what makes Zotter one of the world's best chocolatiers.

As you would expect, this company vision is also reflected in the standards they demand in their buildings. Innovation, sustainability and regional value creation are important to them. The extension to the chocolate factory gives visitors views into the production process on one side and out into the hills around Riegersburg on the other.





Baierl + Demelhuber Interiors Factory

Töging am Inn
GERMANY

"A versatile factory floor!"

Modern production plants are often not just purely functional buildings. The demands on building quality and architecture, and above all on the flexibility of use, are always growing. An innovation from Austria opens up new perspectives. KIELSTEG wooden

roof elements are not only an interesting proposition because of their attractive appearance; they also provide high structural performance that enables factory and warehouse sheds to be built with fewer internal roof supports.







materialPREIS2015

**The project was awarded the material-
PREIS by the materials agency raumPROBE
for outstanding materials competence and
high construction quality.**



Baierl + Demelhuber is a high-end interior outfitter that serves an international market from its base in Töging am Inn in Bavaria. As a full-service company, B+D can provide everything from single trades to complete turnkey solutions.

Demolition, drywall, wiring and plumbing, wood and metal fabrication, surface finishing and furniture-making are all part of their repertoire. They have created shops for international luxury brands such as Louis Vuitton or Nespresso, complex office suites with all the most modern equipment, large public-sector projects and exclusive lounges for hotels and airports.

The design team from Hinterschwepfinger Projekt GmbH made full use of the KIELSTEG system for the new B+D workshop and factory. The almost entirely wooden structure needs only three internal pillars in an area of 66 x 46 m. This means the area of about 3000 m² can be used flexibly and the layout can be rearranged as the need arises.





Faustmann Furniture Factory

St. Johann
AUSTRIA



KIELSTEG scored points with wide spans, and also with light weight, which was particularly relevant because of the sandy soil. The visible surfaces showcase wood as a material, and the generous use of glass maximizes transparency. Since the workers are the heart of the business, Erwin Faustmann wanted to create a sustainable building that would give them a work environment far better than the minimum.

Faustmann have been making high-end furniture for 26 years, the last four of them in a new factory that provides working space for around 90 fully qualified cabinetmakers.

The new factory was designed and built in just 12 months. The priorities were clear: to make a wooden building with the maximum flexibility of use, in order to be ready for future needs of the growing business.

The design and use concept of the new factory with around 5,000 m² of floor space were developed together with architect Gerhard Kreiner ZT from Gröbming. The design is carefully thought out to enable long-term use of the building without having to carry out cost-intensive rebuilding in the future.

Supermarkets



Temporary Market for Hofer

Aspern Seestadt Wien
AUSTRIA



A Viennese supermarket with a use-by date. In the Seestadt Aspern, a new urban development on the edge of the city, stands a Hofer supermarket which will disappear again in a few years. The wooden building can be dismantled and used again at a different location. According to plans, the supermarket will then have a permanent home in another building which isn't ready yet.

But as people are already living in the area, this temporary, fully functional, 730-m² shop has been set up next to the underground station. It was opened in November 2019 and is planned to operate for a maximum of three years. But when its time here is up, that doesn't have to be the end of the building.

Except for the foundation, the whole shop can be disassembled and transported by truck. "This is the big difference from a normal shop", explains Georg Herbst of Malek Herbst Architects, who designed the building; "Where the building is standing now, can be a meadow again." Another difference: the building is made of wood, or to be precise, of prefabricated wooden modules – which reduced the construction time to just 14 weeks. The key to a temporary shop is that it should be up and running quickly. "We asked, how much can we prefabricate?" says Herbst.

In the end, the construction company Kulmer Holz-Leimbau fabricated the parts in their factory, and on the site "We just had to put everything together", he says. This principle is what makes it possible to take the building apart and rebuild it somewhere else.



KIWI Supermarket

Lerberg
NORWAY

**"A building with a
positive CO₂ balance!"**

The KIWI in Lerberg, to the west of Oslo, can rightly call itself Norway's greenest supermarket. The building with the striking curved roof is the product of an architectural competition which was won by the renowned A-Lab architects.

But the shop is not just an eye-catching building for KIWI, it also sets a standard for ecological sensitivity.





The focus of the design was on maximum energy efficiency and a minimal CO₂ footprint, resulting in full wooden construction. The walls are made of cross-laminated timber and the signature roof structure was created using KIELSTEG.

The KIELSTEG wooden construction elements gave the designers a lot of architectural freedom. Despite the need for a high load rating, to allow for the green roof and snow, the required roof span of 38.2 m, divided into two sections 19.1 m long, was achieved using only one row of internal supports,

and with relatively low-profile roof elements, only 73 cm high. The 2,600 m² of green roof helps the building merge gently into the natural surroundings. The roof vegetation also helps maintain biodiversity and creates a habitat for many insect species.





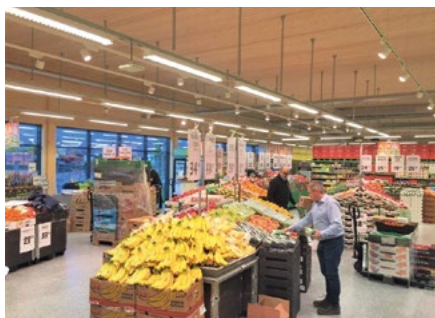
KIWI Supermarket

Skollenborg
NORWAY



Control AS, our Scandinavian partner, sold KIELSTEG as a roof construction for a CO₂-certified supermarket.

The KIWI supermarket chain, which has 650 shops in Norway alone, was opening a new shop in Skollenborg, about 90 km southwest of Oslo. The company has set itself the task of making its business as sustainable as possible; for this reason 70% of the products are from Norway and the building materials are CO₂ certified.



The KIWI store won a national architecture prize. The jury commended the clean-lined architecture, praised the accessibility for sight-impaired people and the easy-to-navigate organization of the shop, and drew attention to the significant reduction of CO₂ in the overall project.

The building meets passive house standards. The 80-cm-high KIELSTEG structure provides a clear span of 23.3 m even under Scandinavian snow load conditions.

Also the other building materials such as concrete, insulation, steel, and asphalt are CO₂-reduced relative to their standards. "This prize confirms that our building is well received on the market", says the head of stores development at KIWI, Jan Eilif Johansen.

The building of the new shop used new knowledge to push the functional and ecological gains even further. As the chain with the most stores in the country, the company aims to set an example in responsibility for people and the environment.



Billa Supermarket

Pischelsdorf
AUSTRIA



Sustainability and climate protection are increasingly central topics in construction of new supermarkets. However, how thoroughly these aspects are implemented still depends strongly on the will of the retail group.

One of the companies that is setting a positive example in Austria is Billa. As a chain of local shops, Billa has been part of Austria for 66 years. In a new supermarket building in Pischelsdorf in Styria, Billa made a priority of using sustainable building materials and reducing the CO₂ footprint of the building in operation.

The shop offers a range of seasonal produce from the local region, which helps to support local value creation and avoids long transport routes. Sustainability also means social responsibility, so, for example, products that are not bought in this shop but are still of

perfectly good quality are donated to the Red Cross for charitable use.

The sustainability measures are not limited to energy and CO₂ parameters of the building, but are intended to demonstrate how such projects can become standard.

Quality is also communicated through the open design, the volume and the materiality of the retail space, which is created by the striped wooden pattern of the roof construction, which creates an atmosphere that is not usual in supermarkets. 80-cm high KIELSTEG elements were used for the flat roof of around 1,300 m², with spans of up to 22.3 m, and a projection of 4 m over the entrance area.



Eurospar Supermarket

Hartberg

AUSTRIA



Spar built a new shop in Hartberg, in eastern Styria, with a floor area of 2,254 m². The building presents itself as a clean, simple design, a long, monolithic structure with a wide projecting roof along the front.

In contrast to the smooth, uniform exterior paneling, the wooden ceiling creates a noticeably different and warmer atmosphere inside the shop. The distinctive striped pattern of the KIELSTEG surface extends over 1,656 m².

The roof covers the building width of 30.8 m in two spans of KIELSTEG elements, of 15.4 m each, running from the long sides of the building to its mid-axis. There, they rest on a steel beam supported by just two pillars.

The elements in the front half also form the projecting roof section, which is 5.4 m deep, so that their total length is 21 m. More than half of the roof area is green and uses

elements that are 56 cm high to carry its weight; the rest is made of 48-cm elements.

The benefits of KIELSTEG in the project therefore include the high flexibility of use of the building, the green roof, the CO₂ savings, the robust building physics, the aesthetic appearance and the rapid construction.



EDEKA Supermarkt Kaiser

Beckingen
GERMANY

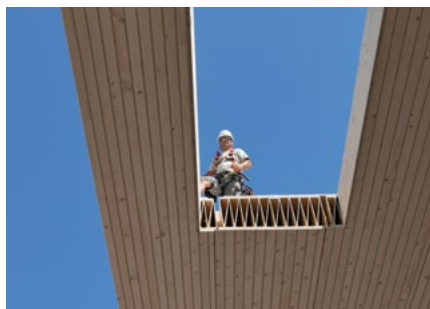
A photovoltaic system, heat pump, LED lighting and a KIELSTEG wooden roof. Kaiser's, a new EDEKA market in Beckingen in the Saarland, made a priority of sustainability, going with the trend in grocery retail.

The roof however not only scores points on the environmental side, it also delivers benefits in the form of flexibility of use. Altogether more than 2,600 m² of KIELSTEG elements were used in the roof.

To shelter the space in front of the entrance, the KIELSTEG elements form a 6.5-m projecting roof. The KIELSTEG elements used were mostly the strong KSE 800. These cover 26 m in a single span. The entire roof only needs two pillars within the retail space. This allows a lot of flexibility for the layout of the shop.

Visually, the wooden ceiling with the directly attached and fully visible lighting and utilities is a design feature. The traditional material wood and the modern, energy-saving technology combine to create an attractive retail space that underlines the theme of sustainability.

The EDEKA supermarket was designed and built by the construction firm of Günther Kaiser GmbH & Co. KG in Beckingen.





Spar Supermarket

Snarøya
NORWAY

“23 metres and no pillars.”

The Spar shop on the Snarøya peninsula in Bærum is another successful demonstration of what a high-quality supermarket can look like. The design by Meinich architects and Søndergaard Rickfelt Arkitekten AS answers some questions about how buildings for our time should be. The shop was built by POB Entreprenør AS for the real-estate developer Norges Gruppen Eiendom AS in 2018. It was deservedly nominated for the Norwegian “Wooden Building of the Year 2018” prize.

The rectangular box may seem simple but carefully follows the functional requirements. The facade plays with contrasts between glossy black solar panels, matt black and natural wood. The glass front of the entrance forms a corner that is pulled back at a slight angle behind the line of the facade, so that it is tucked under the roof.

This avoids sacrificing too much interior area to a porch, and has the effect that the mass of the building seems to float serenely over this corner.





The construction has a strong focus on CO₂-saving materials. The foundation is made of low-carbon concrete with recycled steel rebar. The walls are made of CLT and the roof is KIELSTEG. This combination of wooden materials not only makes the building environmentally sustainable but also opens up the prospect of a long and variable service life. The KIELSTEG roof spans 23 m without any interior supports so that the shop can be reconfigured at will. Also, the KIELSTEG roof is only 80 cm high, maximizing the ratio of interior headroom to total building height and the feeling of open space inside the shop.

The 1,200 m² of sedum green roof helps reduce the effect of impervious surface coverage, and the solar panels make the building fully self-sufficient for electricity. In total, the new shop represents a CO₂ reduction of 60% compared to a supermarket of the same size and conventional construction methods.



R & D
schools
kindergartens



New Middle School in St. Stefan ob Stainz

St. Stefan ob Stainz
AUSTRIA

**“Wooden surfaces make
a pleasant ambience.”**

The school building was getting old and needed to be modernized and adapted for the needs of the 'new middle school' that is using it nowadays.

The extension has increased the total usable area to just under 1,500 m². More space, more light, more quality. The structure is mostly wooden, using visible wooden surfaces and large areas of glass to transform the look and feel of the building – friendly and full of

light. The whole complex which houses the primary school as well as the middle school is now fully accessible. The foyer, the conference room and the principal's office are new; the gym was restructured. The new layout is also amenable to use by the local community for a variety of meetings and events.

The new foyer is efficiently designed; besides being an entrance space it can also be used flexibly as an extra space for teaching. The first floor includes 'learning islands' for individual and group learning activities, complementing the classrooms.





The staircase, the wall elements and the gallery, all made of wood with the grain running in the same direction, combined with the wooden ceiling, create a light-filled space that is functionally easy to read, with an aesthetic of contrasting large shapes. The stairs and walls are made of CLT in visual quality and a KIELSTEG roof covers the 12-m wide foyer as a single flat surface.

The architect, Karin Fritz-Weidmann of ingenos ZT GmbH from Gleisdorf, took the decision to build the new building sections

in wood because of the quality wooden construction offered in terms of ambience, interior climate, functionality and acoustics.

Of course it is also an imperative for new public buildings to be environmentally friendly. The construction work was completed in just a year and within budget. The construction was done by the building firm Muhri with Schranger Holzbaumeister as specialists in wooden construction. The finished building is of its place, and a bit special at the same time.







Wechselland Akademie – Environmental Competence Centre

Schäffern Wechselland
AUSTRIA



The Environmental Competence Centre in Schäffern, Styria, was built as a three-storey wooden structure to passive house standards. Since 2009 the building, with almost 600 m² of floor area, has been home to the Wechselland Academy, a training centre with focus on environmental technology.

The building is a compact block broken up by two dramatic, sculptural cutouts. The vertically planked larch facades, the rounded corners and the windows flush with the facade lend the composition a fantastic lightness.

The competence centre, which is located in the region known as the Spa Country (Thermenland) was sponsored by the governments of Lower Austria and Styria, and designed by Kaltenegger and Partners architects, from Weiz.

KIELSTEG elements were used for the structural floors, providing visible ceilings in two storeys of the building, and for the 12-metre-wide single-span roof, which is a green flat roof.

**Winner of the Solid Bautech Prize for
Small & Medium Enterprises**



Primary School

Götzendorf
AUSTRIA

**“Building was a lot quicker
thanks to prefabrication!”**

The primary school in Götzendorf, Lower Austria, designed by a-plus architects from Vienna, had a declared goal: to create attractive spaces for school, communal and leisure activities that could be used in a variety of ways.

The new school is in the centre of the village, surrounded by other communal institutions

such as the church, town hall, Red Cross, kindergarten and the village pub. With the existing buildings the school adds new qualities to the village – a centre for children and community organisations, and a paved courtyard opening off the main street.







The new primary school sits just off the main street and has a paved courtyard leading from the street, and a garden at the rear. It is a single-storey building. On approaching the front entrance from the courtyard, the gym sits to the left, set off from the rest of the school by its height.

Going inside, we come to a central concourse that can be used for learning and moving around and spending breaks. The classrooms and staff rooms are grouped around the concourse in a cluster layout, with the main rooms opening onto the garden at the rear via covered patios. This arrangement gives a succession of spaces graded from the more public to those reserved for pupils and teachers. For example, the gym is acces-

sible without going past the classrooms, so that the gym and courtyard are easy to use for non-school activities.

The building is easy to navigate and suitable for children. Clear lines of sight inside the building make it easy for teaching staff to keep track of what is happening. Shape and colour are used to give the classrooms individual identities. The building is a determined effort to be sustainable in every aspect of the construction and equipment.

It is an entirely wooden structure, built by Holzbau Franz Kreiseder. Both CO₂ reduction and minimization of construction time, through prefabrication, were factors in this decision. The orientation of the classrooms to the southwest makes the most of passive solar heating.



The materials of the roofs and walls are chosen following their technical and economic strengths – KIELSTEG for the roof structures and CLT for the walls. KIELSTEG forms the roof of the gym with a span of 10 m, with a height of the elements of just 33 cm. The ability to suspend sports equipment from any point in the roof keeps a lot of options open for future alterations.

The wooden construction gives the space a positive ambience in terms of the interior climate, the acoustics and general comfort. The surfaces of the patios and outside roofs are visual-quality, untreated wood, free from chemicals, and low-maintenance, as requested by the municipality.



Kindergarten

Kirchberg an der Raab
AUSTRIA

Following the reorganization of local government areas in Styria in 2015, Kirchberg an der Raab became the location of a kindergarten serving the town and five surrounding villages, which needed a new building. The result is a row of five separate single-storey modules, linked by short corridors; the total complex is almost 70 m long and 23 m wide, with a floor area of 1,670 m². Each of the modules has a group room that faces south and opens onto the garden play area via a covered patio.

Inside, each group room has a main space of around 60 m² and a gallery of 14.4 m². With the gallery and the view to the outside, this makes an attractive space that is ideal for children to feel comfortable in.

The design is by Sperl-Schrag ZT architects, who decided on wooden construction. The walls are built in timber frame construction. The roofs of the five modules are made of KIELSTEG elements in a shallow double-pitched design and most of the roof area is green. The kindergarten, operated by Wiki Kinderbetreuungs GmbH, is a successful example of architecture and material combining to create a high-quality place for children.





“Generous projecting roofs.”

Boehringer BI-Cube Thinktank

Ingelheim
GERMANY



As a leading innovative company in the pharma industry, Boehringer Ingelheim has already been working for some time on introducing modern, agile work practices in many areas of its business.

This led to the demand for a building that could act as a hub for disseminating and implementing innovative, creative processes. The BI CUBE at the company's main site in Ingelheim was built in just 7 months. Even on this already modern industrial campus, its architecture and construction stand out as progressive.

The light wooden-framed structure is a contrast to the surrounding massive office blocks and factory buildings, and the KIELSTEG roof helps to make it a special space. At the entrances, the KIELSTEG elements form gen-

erously proportioned projecting roofs that guide people into the building.

Inside, the KIELSTEG roof elements span the whole interior, almost free of supports – creating a multifunctional, light and airy space. The visible wooden ceiling adds a touch of warmth.

Restaurants



Gastronomie Johann

St. Johann i.d. Haide
AUSTRIA

“Create spaces.”

‘Johann’ sits beside the Autobahn from Graz to Vienna at the Hartberg exit, next to the village of St. Johann in der Haide, Styria. Johann is a hybrid of a cafe, bistro, pub and shop under one roof. 365 days a year, from 5 am to midnight.

“Our concept is an attempt to combine several different experiences and products in an atmosphere where people can feel at home”, says Josef Rath, representative of the operating company.





The building's main facades face southwest and southeast. A wide patio area runs along these two sides of the building, with seating for guests. The patio is sheltered by the projecting roof and partly screened from the parking lot by seemingly random groups of vertical wooden louvres, which make the outdoor area seem like part of the building. The actual indoor area is cleverly tucked away inside this zone.

The design is clear and reduced, with a hint of 50s retro, and light effects suggest the building is levitating gently. 'Johann' is built in a combination of materials: concrete, brick and wood. The glass curtain walls along the two front sides hang in front of concrete pillars at 5-m intervals; the rear walls are made of brick.

The pillars along the front and the wall at the back support LT beams that carry the 970 m² roof structure.

The roof is formed of 23.7 m long and 56 cm high KIELSTEG elements in a single span plus the projecting roof over the patio. Along the front, the KIELSTEG elements are cantilevered out by 5.7 m and cover the interior of the building with 18 m.

At the ends of the building the roof projections are 2.2 m and 6.5 m deep, resting on extensions of the LT beams which are supported at their ends. This structural design keeps the interior of the building clear of supports and makes the structures seem light and transparent, while also ensuring flexibility of the interior layout.

The design is by GHT Architektur und Baumanagement, an architecture and construction management company with offices in Vienna, Graz, and St. Martin im Mühlkreis, in Upper Austria.





Motorway Restaurant Grauholz Süd

Ittingen
SWITZERLAND

“Roof and walls as a platform for energy generation!”

The motorway restaurant Grauholz Süd, a little north of Bern, has always been a family business, ever since it opened in 1975. This makes it an exception because it is the only motorway restaurant in Switzerland that is not part of a chain. Quality is its manifesto: there is no fast food here, everything is made on the spot from fresh ingredients.

The number of people who take a break here is as high as you'd expect for a place where 100,000 vehicles a day pass by on the autobahn ... and after more than 40 years of use, the whole facility was due for a total renovation and rebuild. The project included the design of the restaurant building, and the new traffic layout, which had to anticipate the planned upgrade of the A1.



The new restaurant is a contemporary building with an energy concept designed to be as climate-friendly as possible. To reduce the CO₂ footprint, wood was chosen as the major building material. The walls are made of wooden sandwich panels, and the roof is formed by two spans of KIELSTEG elements supported by three lines of LT beams. The 33 m long and 48.5 cm high KIELSTEG elements cover the interior of the building and also form an overhang running all around the outside. They ensure that the interior can be freely configured.

The building is wrapped in an innovative solar facade that warms the interior with only natural daylight. The roof carries a photovoltaic system with just under 400 m² of solar panels. The high energy efficiency combined with the solar power generation means that the building is more than self-sufficient in energy, and feeds the excess into the electricity grid.

The constantly controlled surface temperature of the walls and ceiling creates a remarkably comfortable atmosphere inside. The new restaurant has a footprint of about 450 m² and has space for 75 guests indoors and 45 more outdoors. The interior is a well-organized but cosy lounge with individual seating zones. The buffet and bar wrap around the seating area in a semicircle. The glass facade opens the space to the east and to the south, with a view to the silhouette of Eiger, Mönch and Jungfrau.

100 people work here to provide style and cuisine that are unashamedly different from the average. Overall Grauholz Süd is a building of impressive quality, a departure from the usual standards of its genre that already gives clear answers on how to save resources and protect the climate.





Restaurant Mia Mensa

Beringen

BELGIUM

"A statement of essentials."

Be-MINE in Beringen, Belgium is a successful example of urban regeneration making use of the landscape left behind by a former coalmine.

It combines spaces for work, living, shopping, relaxation, sport, and culture, has created around 500 new jobs, and forms an exemplary symbiosis of old and new architecture.

In the form of a small restaurant on the western edge of the central plaza, UAU Jaspers Evers Architects has now created a place for eating, drinking and socializing that will enliven the museum quarter.





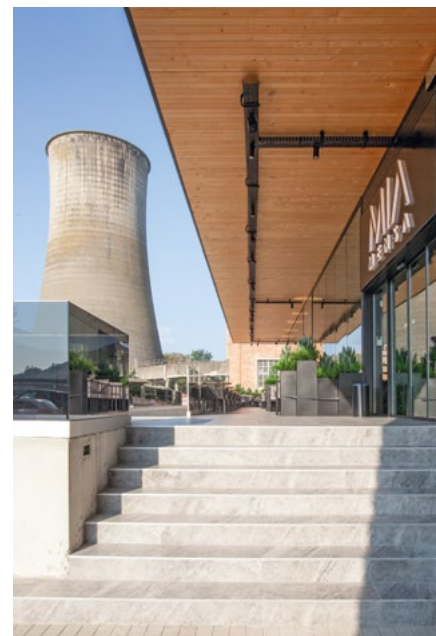
The restaurant Mia docks directly on to the museum building, a historic monument built in the typical brick style of the late 19th century.

The form of the restaurant is minimalist and clear. The primary structure consists of an exposed concrete base and thin steel columns carrying the two beams on which the visible KIELSTEG roof rests. The KIELSTEG elements are 33 cm high and span the interior of 13.35 m with an overhang of 1.45 m on one side and 3.8 m on the other.

The structure is braced by the lift shaft and two concrete panels that are part of the rear wall. The other walls are entirely of glass.

With the lightness and transparency of the Mia juxtaposed against the solid bulk of the museum, the buildings, old and new, pay each other respect through contrast.

The conservation of the industrial heritage in the context of urban revitalization is not contradicted by the use of new modern designs. "The buildings confidently visualize past and present and suggest a possible future! This future is partly guaranteed by the multicunctionality and the new identity that has emerged", comments the architect, Frederik Vaes.



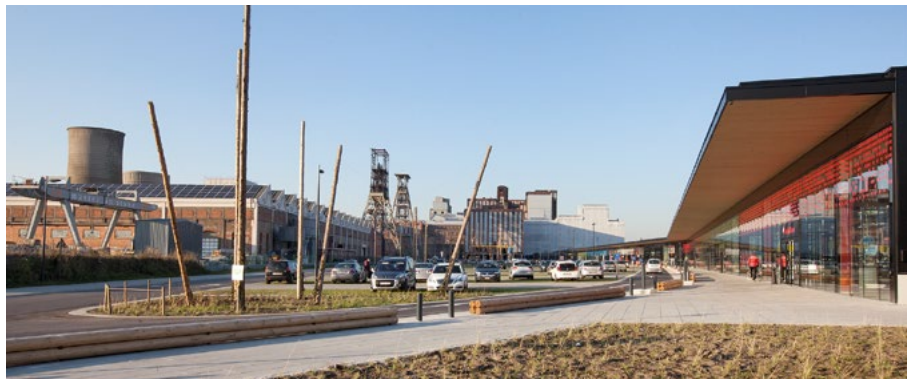
Specialist retail



Retail Park be-MINE

Beringen
BELGIUM

Beringen and be-MINE are often mentioned in the same breath. The city and the history of mining in the area are inseparable, and be-MINE is a tourist magnet. No other mine is so well preserved. Here the combination of cultural heritage, leisure facilities and tourism has become an outstanding success.



Living, working, shopping and relaxing on the site of a historic coalmine: this is be-MINE Boulevard. The project is part of the reuse and revitalization of the biggest protected industrial monument in Flanders. Mining operations at the 32-hectare site in the town of Beringen stopped in 1989. The master plan for its conversion envisages a balanced combination of residential, working and shopping functions, as well as the creation of approximately 500 jobs.

The design concept aims to integrate the protected historic buildings and the large hill of spoil from the mine. The hill will become a recreational park and offers spectacular views over the area of the former mine workings.

A key role in the new building is played by the central square with 700 parking spaces and the neighbouring retail park. An uninterrupted link between the historic buildings, the central park and the spoil hill is provided in the form of a 15,000 m² green roof area of the retail park. In this structure designed

by the Belgian architect Frederik Vaes, from UAU Collectiv Jaspers-Eyers Architects, glass and wood are used subtly to create an emotional contrast to the steel and brick mood of the surrounding mine buildings.

The roof structure relies totally on the sustainability and structural performance of KIELSTEG elements. Using KIELSTEG allowed the creation of the projecting roof and the spacious entrance area to the shops free of pillars.

The structure is very slender, using a spacing of 7.4 metres between supports and a cantilevered projecting roof of 4.9 metres. The light, open, clean structure and the characteristic striped pattern of KIELSTEG are major elements in the ambience of the central square. The short construction time was also a factor in the designers' choice.





BSG Grabmann

Internorm

Windows & Doors BS Grabmann

Albering

AUSTRIA



This building in Arbing in the Mühlviertel region of Upper Austria combines offices, a warehouse and a showroom for a manufacturer of windows and doors. For designers, architects and engineers, new building products are always a chance to rethink conventional ideas and to discover more flexible solutions.

The builder was the local ZMP Partner Krückl-Bau from Perg, and the architect was Stefan Ager of the architecture practice 'transformator Geschichten'.

The new building for Bauservice Grabmann is a good example of how to combine KIELSTEG with CLT, selecting each material based on its strengths. CLT was used in the walls and the wide-open spaces were spanned by KIELSTEG. The client, Franz Grabmann,

is delighted with the building. "Just look at this fantastic result. Everyone who wants to build should use this new combination of materials", he says.

Especially in the offices and the 23 x 50 m showroom, comfort and the attractive ambience are key factors. The building includes 900 m² of KIELSTEG elements (KSE 485 and KSE 730) as well as 1000 m² of CLT wall and structural floor elements.



Hardware Store & Garden Centre Ländring Lagerhaus

Pirching

AUSTRIA

Ländring and its chain of regional hardware markets and garden centres continue to expand and just gained a new shop in a striking design. The new Almland store makes an impression through sheer quality.

The cubic block of the new Ländring hardware and garden store in Pirching by Gleisdorf, Styria, covers 3,530 m². The architect Martin Gußmagg from Pischelsdorf insisted on the greatest possible freedom in configuring the retail space.





The client, Almland eGen, is strongly rooted in the region and is an important partner for agricultural producers and residents in the region. "It was important to express this regional and high-quality philosophy in the design", explains architect Martin Gußmagg. In this project, the KIELSTEG system meets two central needs: rapid construction and high flexibility of the interior layout in future.

These were the factors that made the designer choose KIELSTEG. Straightforward logistics and quick assembly of the 1.2 m wide elements with a span of 18 m ensured an efficient and short construction phase, which is one of the most important elements in finishing any project reliably within budget.

The sales space creates a positive impression with its wide and visible wooden ceiling, unusual in a type of building that more often conceals the roof structure. The generous skylights let into transverse slots in the roof allow for wonderful natural light – the intensive use of artificial lighting typical of hardware stores is absent. The regularly spaced rows of skylights add a pleasing rhythm to the ceiling.

The building is a classical reinforced concrete structure with three rows of concrete pillars carrying beams on which the 3,530 m² KIELSTEG roof is laid. The 12-m space between rows of pillars allows the shop floor to be rearranged easily.

From outside, the division of the building into the garden centre and the hardware store is emphasized by both form and material, with glass, concrete and wood playing dominant roles. The intensity and quality in which each material defines the different spaces is remarkable.







Forest and Garden Weninger

Mistelbach
AUSTRIA

Weniger of Mistelbach, in Lower Austria, has been an expert partner of gardeners, whether amateur or professional, and forestry professionals, for many years. They offer a unique range of specialist tools and machines.

The new building in Mitschastraße, with its long, low shape, presents itself as a strict rectangular block, whose shape and appearance already speak of quality and expertise.

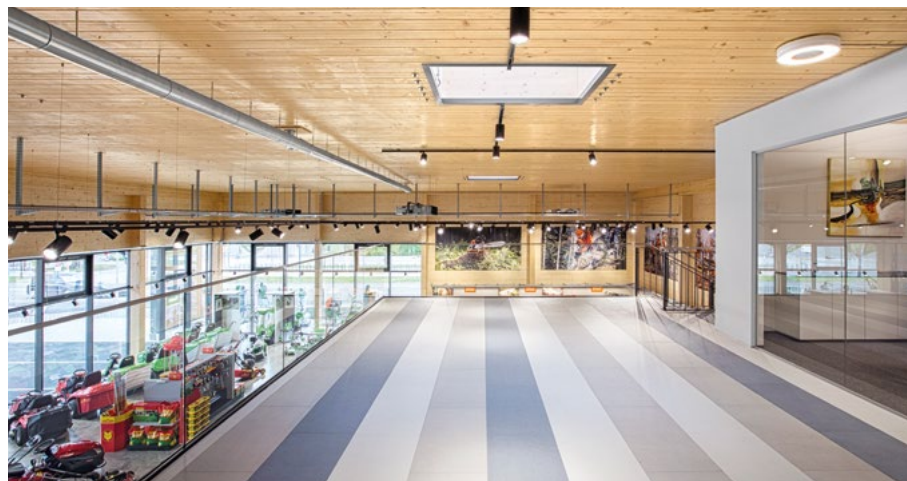
The new hardware store was designed by Viereck Architects from Graz and relies entirely on wood for its structure.



In the search for the greatest possible flexibility of use, while also optimizing the built volume, the designers had to question the more traditional concepts in wooden building. They found the solution in the combination of CLT for the walls and KIELSTEG for the roof. Other reasons for wood as construction material were to keep the disruption of the business to a minimum, and also to protect the climate as much as possible, in accordance with the company's mission.

An exceptional building with remarkable figures: only 5 months from demolition of the old building to completion of the new one – within budget, of course. The energy technology in the building is right up to date, with photovoltaic panels on the roof and a geothermal heat pump for heating and cooling. Out of a total of 1,010 m², more than 800 m² of the floor of is completely free of internal supports. The visible KIELSTEG roof spans the 20 m wide building and creates a wide open, uncluttered space.

The height of the KIELSTEG elements, just 80 cm, enabled the shop to combine the maximum ceiling height with a minimum of total height. "The new shop has an amazingly free interior volume – and over the years this will support changes in the arrangement of the product presentations", the architect enthuses.





White Angel Pharmacy

Retz

AUSTRIA

The 'White Angel Pharmacy' is a modern design with a striking wedge shape in the commercial zone on the edge of Retz, a town in Lower Austria near the Czech border. The owner and pharmacist, Ms. Leisser, and bg-architects wanted a building that was up to date in terms of sustainability: central priorities included a photovoltaic array, a heat pump and wood as the material for the structure and envelope of the building.

Walls of CLT and a roof of KIELSTEG resulted in a floor plan free of pillars. This also enabled generous use of glass for the interior partitions, creating an openness between the different zones of the shop. The wooden construction with the high level of prefabrication reduced the construction time to just five months.



Adding storeys



Densification Skywood by Baukult

Vienna

AUSTRIA



In Vienna, near the Westbahnhof, at the highest point of Felberstraße, a two-storey rooftop extension has been added to a late nineteenth-century house. In a fully built-up area where it is hard to find any additional residential volume, the architects Regina M. Lettner and Günter Lagler of skywood by baukult set a new two-storey space on top of the existing building.

The rooftop extension, called 'Bird of Paradise', is an example of excellence in urban densification, in terms of cost-effectiveness, ecology and adding value to the property. Lightweight and quick construction is often the key to success with extension projects, and this makes special demands on planning and materials. Here, the architect and owner skilfully used the light and high-performance materials wood and steel, which gave her the most freedom with the design while respecting the existing structure.

The extension is made mainly of prefabricated wooden elements with some steel. The structure is exposed and visible in the interior, making an architectural statement.

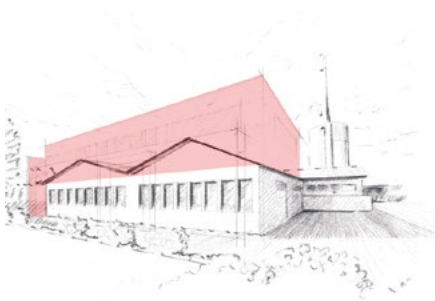
The wide-span KIELSTEG elements form the roof structure and set new standards for urban wooden building by reducing the load on the substructure and creating pillar-free floor plans.

The roof is partly green and partly covered in photovoltaic panels. After only five weeks in construction, the new living space is inviting, spacious, open and full of light, with fantastic views into the far distance.



Zottler Carpentry Workshop Extension

Passail
AUSTRIA



Lightweight constructions come into their own when the job is to add new space on top of an existing building, while staying within the limits of what the existing structure can carry.

An excellent example is the reconfiguration of the Zottler workshop in Passail, Styria. Zottler is a carpentry firm with 41 employees that specializes in high-quality fitted furniture for hotels, restaurants and doctors' offices.

The business outgrew the space available in the existing building, which dated from the 1960s. Both more workshop space and more office space were needed. Instead of demolishing the existing building, it was decided to expand it. Extra office and showroom space of 260 m² was created by adding a new storey above part of building, and the space formerly occupied by the offices on the ground floor was repurposed to expand the production area.

The construction costs of this option were much lower than a new build because it avoided the need to build a new foundation; also, thanks to the lightweight construction method, it was possible to add the new storey without first reinforcing the load-bearing structure below. The construction method also massively reduced the interruption of business due to the building activity.

The walls of the new storey are made of wooden sandwich panels, the structural floor is made of CLT and the flat roof is made of KIELSTEG elements. The KIELSTEG elements are 33 cm high and cover the width of 10.8 m in one span, so that the whole floor area of the upper floor is completely free of supports. Altogether, the form and style of the building is a fascinating new presence on the site.

Warehouses



Allergosan Pharma Company

Graz

AUSTRIA



Allergosan has been a centre of research and development for medicinal products from natural substances for almost 30 years. Today it is a major Austrian centre of microbiome research, and deeply committed to development of probiotics.

Founded 25 years ago, the company has now built its new headquarters in Graz, in a location on the southern edge of the city. The building is a complex of three main sections. At one end is a 5-storey, almost cubic block with a dark mirrored facade.

Attached to this block is a contrasting, elongated, 3-storey, section clad in white, which houses the conference centre. At the other end, the warehouse is the largest section by area, at 2,185 m², and forms a counterweight to the main block. The designers Architektur 64 ZT GmbH, from Gleisdorf, created an impressive concept that translates the values of the company into a built narrative, with clarity and functionality.

Structurally, the buildings are based on concrete frames. However, the warehouse has a wooden roof. The roof provides space for more than 1,000 m² of photovoltaic panels.

In order to keep the warehouse floor free of obstacles to the movements of the logistics system, the number of supports was reduced to the absolute minimum. The roof is formed by 48.5 cm high KIELSTEG elements with spans of 13.5 m. The warehouse is a highly flexible building. Changes in the logistics processes due to changes in market and customer demands, can be implemented without triggering any major investments for alteration of the building.



Grossauer Warehouse

Übelbach
AUSTRIA



Franz Grossauer started his business in the 1980s with a vision of themed and event-focused restaurants. Now his group has 17 businesses, including beer halls, restaurants, a guesthouse and an events department.

The group has acquired a large stock of equipment such as seating and staging that is used from time to time in different places, and needed somewhere to store it. The new central store is located in Übelbach, Styria. The warehouse is divided into four zones: two enclosed storage areas and an enclosed

garage for trucks are arranged in a U shape around a sheltered, but open loading bay. The indoor areas open onto the loading bay by means of large roller shutters.

The 40 x 52 m shed is a wooden frame structure with a KIELSTEG roof. The KIELSTEG elements span a total of 40 m, which is achieved by joining them end-to-end with scarf joints, with two rows of intermediate supports. The largest single span is 19.5 m with elements that are 48.5 and 61 cm high.

The 2,000 m² roof carries photovoltaic panels that supply all the energy needs of the building. Natural lighting is provided by windows in the walls and a large number of 120 x 400 cm skylights in the roof.

With this project, architect Georg Moosbrugger has set a good example of how to build a shed that is highly functional, economical and aesthetically harmonious.

**Carports
shelters**

Carport Weidenweg

Gleisdorf
AUSTRIA



This carport project in an apartment development in Gleisdorf demonstrates how KIELSTEG elements can be used for an uncomplicated and elegant roofing solution.

The carport provides shelter for bicycles and powered 2-wheelers as well as 19 cars. It provides generous pillar-free spaces of 8 to 10 m in width for 3 to 4 cars, which makes it easy to manoeuvre the cars into the parking spaces and easy to open them when they are parked.

User satisfaction with this arrangement is very high. At the end, each carport has a cantilevered projecting roof that provides space for up to 3 further vehicles.

The total area covered by the KIELSTEG roofs is 340 m². The roofs are built in a 3-span arrangement with a cantilevered end, which enables the use of KIELSTEG elements that are just 33 cm high. With a total length of about 29 m, the resulting thin, clean, planar

**“Perfect car storage
with KIELSTEG.”**

form sits well with the proportions of the 3-storey apartment blocks next to it. The carport that runs along the side of the house even plays a role in the landscaping concept: it has two circular openings in the roof with trees growing through them.

Finally, the wooden surfaces of the carports, along with the pergola leading to the apartments, have a positive effect on the acoustics of the yard around the houses.





Kreisler Charging Station

Vogau
AUSTRIA

The infrastructure for charging e-vehicles has entered the phase of growing a structured network. Uptake of e-mobility depends on rapid charging, ease of use and an attractive service concept.

Kreisler GmbH is a privately initiated project that sets an innovative example of how to meet these challenges. At first glance, the charging station looks like an ordinary filling station. But when you look closer, you notice the differences. The roof that shelters the station from the weather is made of wood. The natural surface creates an unusual aesthetic for a filling station that avoids any utopian references.

The KIELSTEG roof meets the need to create a sufficiently open space for vehicles to manoeuvre in. The roof is also the base for the solar energy generation. The station is self-sufficient; the energy from the solar panels is stored in a lithium battery station and is used to charge the vehicles.

Besides the powerful charging technology, which can fully charge cars in 20-30 minutes, there is also a self-service shop. The shop is stocked with specialities from the region. Customers choose the things they want to buy on a touchscreen and pay for them cash-free.

Their shopping then appears at a fully automatic pickup point. The energy hot spot is in St. Veith, Styria - near the Slovenian border - and serves commuters, tourists and people who live locally.

The concept of selling regional produce in the shop and the sustainable building are in an intriguing symbiosis with the technical process of providing energy for the increasing number of e-vehicles, contributing to protection of the climate and the environment.

The station was designed by architect Ursula Werner-Tutschku and built by Haring Holzbautechnik.

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Kreisler Charging Station

This edition of – BUILDINGS – presents a wide selection of KIELSTEG projects that have been built in recent years in Europe.

Each one of these projects is an example of how KIELSTEG, as a high-performance wooden material, meets exacting demands on architecture, flexibility of use and ecology. When owners, architects and designers choose KIELSTEG, they are choosing to be at the cutting edge of building technology and sustainability.



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