on the way

The Purbond Newsletter No. 3/2010

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Staying alive

Hardly a day goes by without someone asking when the credit crunch will end: a question that suggests everything could go back to the way it once was; a question that encourages us to persevere in the expectation of good new days; to hold on, sit tight, and wait. What we tend to overlook is that the rules of the game are changing, the situation is deteriorating, and we're at a turning point. This crisis is neither good nor bad in itself, but simply a collective term for changes that have been brewing for a long time and that we can't ignore any longer. It challenges us to become aware of the options available, to make decisions, and above all to act. Why? Because nothing will ever again be the way it was.

To act, however, means that we first have to let go and distance ourselves from what may have been valid in the past but no longer applies today. Then, free of ballast, we can set out again, find new paths, and take advantage of new opportunities. It's hardly surprising that every month, across businesses everywhere, the call for innovations rings out loud and clear and ever more demanding – but innovations can't be delivered to order. They seek out those who focus intensely on the tasks they want to fulfill, those who show commitment and want to improve. That's the only way to build up the excitement required to recognize new solutions for what they are. Innovations happen when we confront the problems that plague us. They can't be conjured up with workshops and concept-finding techniques; instead they are created when employees investigate, work, even suffer.

Innovations that lead the way are typical of the companies that create them. In particular, new products, services, or even technologies are born from the combination of know-how and experience on the one hand and the awareness of the problem and the excitement of the search on the other. These are also the essential prerequisites for commercial success in the marketplace: the competence of the employees involved represents progress, and the credibility and supplier authority inherent in the company's history represent customer acceptance.

Seen from that viewpoint, we live in good times. We may need more energy and strength than ever to survive in business. But the pressure toward far-reaching status-quo reviews and the need to let go of the old and familiar and conquer new terrain keep us alive. We fight, we are challenged to the very limits of our strength, but we live and progress. What more could we want?

Walter Stampfli
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Content

Cover: Monte Rosa Hut, Valais, Switzerland
Photo Holzbau AG, www.holzbaum.ch
PURBOND HB S309

Cross-laminated timber: a new technology prevails

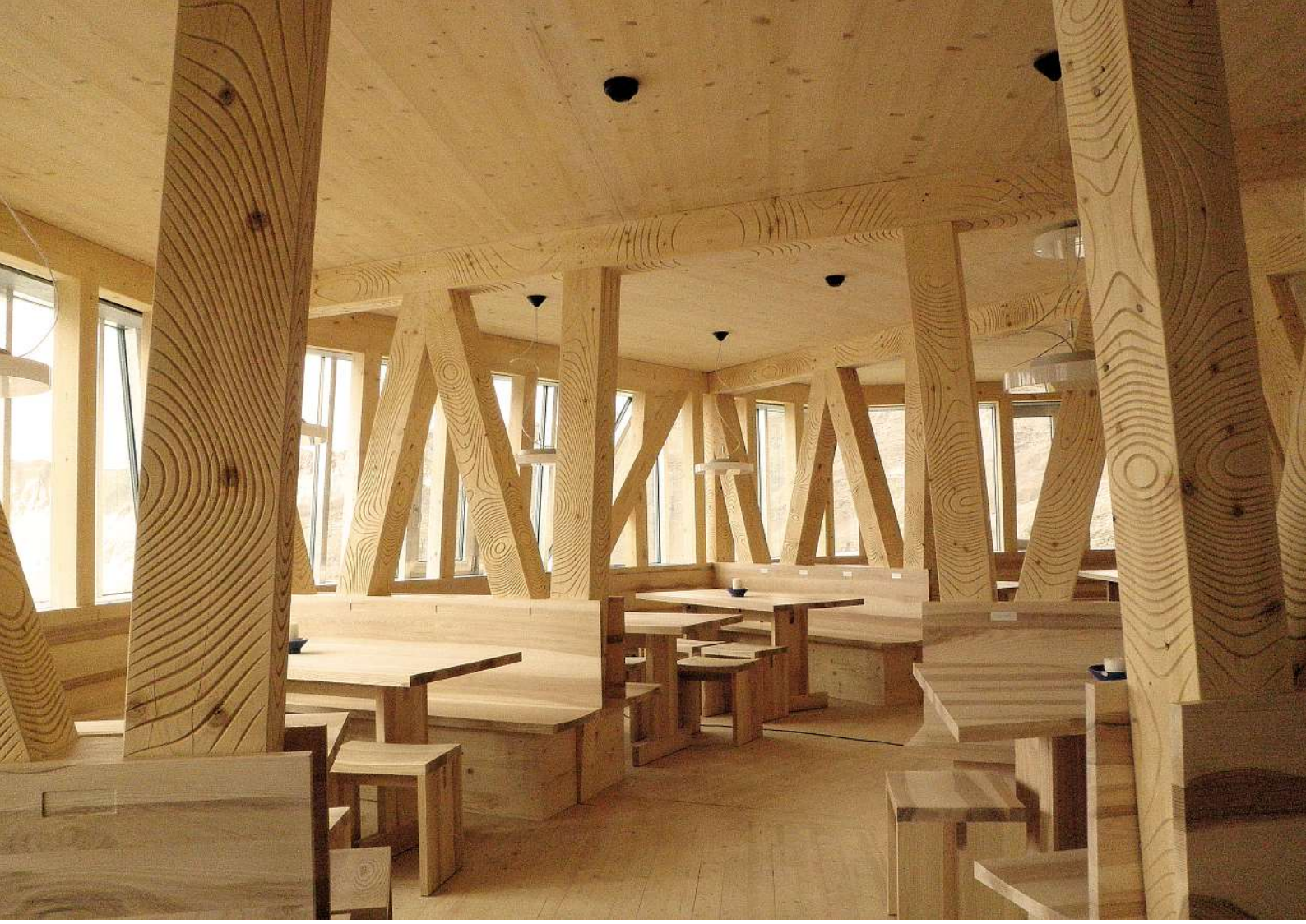
An important aspect is that wood combines very well with glass, steel, or aluminum. There are hardly any limits to the interplay of shapes, materials, and light without compromising insulation and stability ratings.

The new Monte Rosa Hut was inaugurated in September 2009. It belongs to the Valais chapter of the Swiss Alpine Club (SAC) and ranks among the best-known lodges in the world. Neither a road nor a power line leads to its site at nearly 3000 meters above sea level. The challenges in building it not only involved project management and the implementation of the complex structure within the short available time window, the logistics problems were formidable as well. The biggest single factor in transportation logistics was the timber framework: it alone weighed 200 metric tons. After reviewing several scenarios, the engineers soon abandoned the fast modular construction approach in which spatial sections are interconnected. Instead, they opted for prefabricated wall and ceiling elements. These components are smaller and more lightweight than voluminous modules and can therefore be transported with less expensive and more readily available small helicopters.

The Monte Rosa Hut is a prominent testimonial to a technology in engineered wood construction that is becoming more and more commonplace in far less spectacular structures. The components, consisting of cross-laminated boards, are extremely stable and have excellent insulation properties. Additionally, they can absorb high loads in relation to their weight. Prefabricated elements can be manufactured under controlled conditions; wiring and sockets are integrated, as are windows and insulation material. Because wood is convenient to process, it is ideal for batch fabrication, and even complicated wall and ceiling elements are easy to manufacture. Another important aspect is that wood combines very well with glass, steel, or aluminum. There are hardly any limits to the interplay of shapes, materials, and light without compromising insulation and stability ratings. Obviously, a building composed of prefabricated modules or elements assembled on a foundation takes much less time to complete than a conventional one.

Of course, the quality of the adhesives selected for this type of construction technology plays a decisive role. Depending on the individual processes involved, it must be possible to adjust open times because only strictly controlled and fully traceable fabrication operations will assure that target strengths are attained. At the same time, the effect of an adhesive on the indoor climate in a building is a key factor. At least in this modern approach to building, the deployment of formaldehyde adhesives is finally history.

Monte Rosa Hut, Valais, Switzerland
Photo Holzbau AG, www.holzbaum.ch →
PURBOND HB S309



In the countries that pioneered load-bearing engineered wood construction – Switzerland, Germany, and Austria – entire housing developments are meanwhile being built with wood. Wood is being rediscovered as a building material not least because of growing environmental awareness and the insight that the eco-balance of a structure cannot be limited to its life-span energy efficiency but must also take the materials of which it is made and their end-of-life disposability into account.

At the same time, more and more pioneering companies are developing totally new applications for wood in construction. Hannover-based TimberTower is one of them. Together with its partners, it uses wood to manufacture wind turbine towers. There can be no doubt that cross-laminated timber will make new structures feasible in many domains, defining new benchmarks in terms of fabrication, maintenance costs, and ecological soundness.

Monte Rosa Hut, Valais, Switzerland, interior view ↑
Monte Rosa Hut, Valais, Switzerland, exterior view →
Photo Holzbau AG, www.holzbaum.ch
PURBOND HB S309

Why it pays to buy our adhesives, even if they cost slightly more

And particularly in our industry, success can't be conjured up with frugality. Meanwhile, everyone is frugal. Those who do what everyone else does are not needed.

The rules of the game in our markets are tough: only the strong players who succeed in making money with what they do will survive the competitive struggle. And purchasing managers who are extensively accountable for liaisons with suppliers make important contributions in this respect. Basically, there are two approaches that we can observe in the marketplace as a manufacturer and seller of adhesives:

1. Buyers will leverage all the resources at their disposal to negotiate lower prices. They do this by pitting suppliers against each other, by comparing the prices of adhesives, and by buying where they get the best deals.

2. Buyers recognize that the survival of their business in the competitive arena is not just a function of rock-bottom purchase prices but a matter of competitive clout. And of course, competitive clout comes from the quality of the deliverables that customers receive, plus – as a very important aspect – from the efficiency and dependability with which the deliverables are provided. And so, things are quite clear: suppliers are no longer assessed solely on the basis of product and price. The buyers will also ask themselves how and to what extent their suppliers can help them boost their own competitiveness.

To make a long story short, Purbond doesn't really have any customers who pursue the first approach and are mainly price-driven, because there's always a competitor somewhere who sells adhesives at prices lower than ours. It's understandable: the price of our adhesives co-finances almost all of the services that, when summed up, make our customers so strong. This applies not only to the reliability of the data that backs our adhesives, to the product line that covers so many applications, and to the confidence that originates from worldwide approvals. It applies also to the support that our customers can expect when they train personnel, install, and commission new production lines; when optimizing existing processes; when developing and fabricating new products; or when managing interfaces for machinery manufacturers.

Due to the close collaboration between the experts at the Center of Competence and staff members in the individual markets, each individual customer can expect an all-encompassing bundle of services that pursues only one goal: to efficiently harness the possibilities of a new technology for the customer's scope of operations … not just now, but for the future as well. After all, we know that if our customers are successful, we will be successful too. And particularly in our indus-

try, success can't be conjured up with frugality. Meanwhile, everyone is frugal. Those who do what everyone else does are not needed. They become superfluous.

At Purbond, we are proud of our customers. Nearly all of them are pioneers who with courage and hard work are conquering new domains or discovering new ways to be better and more efficient at what they do today. It is delightful to make a contribution in this respect – that's what it's all about.

House of Children, Breitenbrunn, Austria
Photo KLH, www.klh.at
PURBOND HB 110 and HB 360

House of Architect, Sistrans, Austria
Photo Stora Enso, www.storaenso.com
PURBOND HB 230 and HB S109
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European Style in the US

The time has finally come: Purbond's PURBOND HB E line is the first one-component PUR adhesive to gain approval in the United States … and this with an open time range from 3 to 45 minutes. Building with wood will be given a new kick start in the US.

The development of finger jointing marks the beginning of building with wood in the US. Both stateside and in Europe, this technique made it possible to standardize wood as a building material, calculate engineering figures with precision and manufacture beams not only in nearly any size, but also in any shape required. But there was an impediment to the triumphal march of load-bearing timber construction: the fast-growing awareness of health issues. Indoor air quality and well-being are of critical importance – and were negatively affected by the exclusive use of formaldehyde adhesives. New requirements such as those of the California Air Resources Board (CARB) limit the formaldehyde emissions for timber products manufactured, sold, and used in California to an unprecedented degree. Equally, in its "Low Emission Initiative", IKEA specifies that the emissions from manufactured wood products must not exceed those of natural timber.

This late approval for the first one-component PUR adhesive for load-bearing timber construction means that US manufacturers, house builders, engineers, and architects are following in the wake of their European colleagues, who have been gaining experience and accruing know-how for almost two decades now. One of Purbond's first customers even uses the headline "European Wood" for its new brochure, a reference to the construction and the adhesives rather than to the timber itself. Showcasing buildings that no longer feature the black joints typical of the old adhesives is an additional and welcome illustration of the dawning of a new age.

The team at Purbond has been fighting for this approval since 2002. For seven long years, our employees and their allies in the US suffered, invested, persevered, and cleared all hurdles and obstacles from their path. And now they are hoping that the seven lean years will be followed by seven fat ones.

Observation Tower, Stetten, Austria
Photo Stora Enso, www.storaenso.com
PURBOND HB 230 and HB S109 →

Center of Competence: milestones from Switzerland?

The attitude of keeping regulations and approvals at a minimum and wherever possible relying on personal accountability still prevails in Switzerland.

The center of competence has proven its worth as an organizational entity. The Swiss town of Sempach has attracted a growing number of specialists whose objective is to achieve a breakthrough for PUR adhesives for load-bearing engineered wood … on a global scale. This is where new adhesives are developed and where cooperation with universities and approval authorities is coordinated on a worldwide basis. This is the source of support for customers in Europe, the USA, Australia, South America, and Asia who want to profitably leverage a new technology to streamline their production. Know-how, experience, and knowledge regarding international applications are pooled in Sempach and benefit those who strive to further consolidate and expand their position in up-and-coming markets.

But there's one question we keep hearing: why, of all places, is the Center of Competence located in Switzerland? Everyone knows that the highest salaries are paid here and that Switzerland is a small market. And no one knows whether it will ever be a member of the European Union.

All these factors are disadvantages of Switzerland. But they are more than offset by one circumstance: Switzerland probably has the fewest barriers to discourage new technologies and pioneering businesses. It does not impose constraints and insist on approval processes but instead vests confidence in accountability and the entrepreneurial spirit. In other words, the new PUR adhesives for load-bearing engineered wood applications did not primarily have to fulfill approval criteria. They were deployed from the moment architects, planners, builders, and contractors were willing to take responsibility for their creations. It is no coincidence that the patent granted to Otto Hetzer in Weimar, Germany – it is the foundation for our entire industry – was

first widely exploited in Switzerland. As far back as 1909 and 1915, a number of prestigious structures were built here on the basis of this technology. Hotels and churches were built with it, halls for machines, depots for the Swiss Federal Railways, the buildings for the National Exposition in 1914, and the dome for the tower of the Institute of Hygiene of the University of Zürich.

The attitude of keeping regulations and approvals at a minimum and wherever possible relying on personal accountability still prevails in Switzerland, also among the staff of the Swiss Federal Institute of Technology (ETH) in Zürich, the University of Applied Sciences in Biel, and the Institute of Materials Science & Technology (EMPA), with whom we closely collaborate. The same applies to partners such as Robatech or to our in-house staff, who make decisive contributions to new developments. Innovation thrives in a climate in which authorities, employees, and partners take an at least benevolent stand as regards new developments – in a climate where tests can be conducted without having to first prove that an idea will work. Here, pioneering achievements are still possible.

Of course, Switzerland also runs the risk of rushing to regulate innovation before it happens. Here, too, we are faced with a growing number of lawyers in government positions whose main concern is to apply the laws. But perhaps Switzerland has the advantage that regulations became the rule somewhat later, and we wish to exploit this advantage in the interest of our technology and of everyone who wants to benefit from it.

Kindergarten St. Joachim, Munich, Germany
Photo KLH, www.klh.at
PURBOND HB 110 and HB 360 ↑

Purbond

Adhesive systems for engineered wood

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