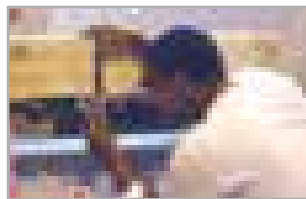


ENGINEEREDWOOD

SPRING 2016

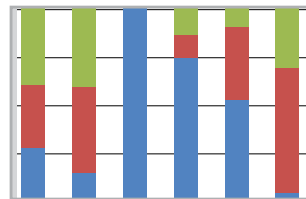
Journal



HIGHER WOOD

Universities Find Ways to Attract Students to Wood Products Programs

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STAYING THE COURSE

Business Outlook Survey Shows Steady Success, Guarded Optimism

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MANAGING MOISTURE

APA's Hygrothermal Research Program Tests Insulating Materials

PAGE 52

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ENGINEEREDWOOD *Journal*

ENGINEERED WOOD JOURNAL
Volume 19, No. 1, Spring 2016

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**Engineered Wood
Technology Association**
7011 South 19th Street
Tacoma, WA 98466
Phone: 253-620-7237
www.engineeredwood.org

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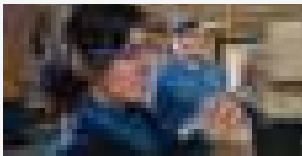


Photo by Jim Stroup/
Virginia Tech

About the Cover:
Houri Sharifniay Dizboni is a current graduate student in Virginia Tech's Department of Sustainable Biomaterials. She is preparing to test a CLT sample in a bending test. Read more about the efforts universities are making to attract more students to their wood products programs on page 10.



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PRIME *lines*

In this issue...

When I was going through the notes I took during the general session at the APA Annual Meeting in Coeur d'Alene, Idaho, last October, a certain statistic caught my eye. Surely I had written it down wrong: *Of 22,000 people who applied for 6,200 freshman seats at Virginia Tech in 2015, only five specifically sought to join the college's Department of Sustainable Biomaterials.* Could it be true that so few students would seek to learn about an industry that so many of us know to be interesting, rewarding and lucrative?

I emailed the source of the quote, Dr. Paul Winistorfer, dean of Virginia Tech's College of Natural Resources and Environment, who was one of two professors who spoke at the general session (and later that day at the "University Programs" roundtable discussion). "Did I write that down correctly?" I asked him.

It turns out I had. According to Winistorfer, nearly all of the students in his college's wood products programs did not enter as freshman, but rather transferred into a wood-related program later on in their college careers from some other major. In his opinion, careers in the wood industry are not highly touted at the high school level.

"It is not a known discipline in high schools and awareness of the career opportunities is not readily evident to the high schools, or counselors," said Winistorfer.

The general session discussion of the state of wood products programs at universities was an interesting one, as was the discussion at the roundtable session that followed. We decided to continue the conversation in this issue of the *Engineered Wood Journal*, starting on page 10, with a Q & A with the two professors who spoke at the meeting (as well as a third slated to speak, but unable to attend due to illness). We also reached out to several graduates of wood programs at universities throughout the U.S. and Canada to find where their education has taken them. One of my favorite quotes comes from Reid Foerter, a 23-year-old brokerage sales representative for Tolko Industries Ltd., who graduated from the University of British Columbia's Wood Products Processing program with a bachelor of science in Wood Products Processing last year.

"I always tell people, when asked about the industry, that from the outside looking in, the wood products industry is tiny and appears to have minimal potential," said Foerter, "but once you're in it you see how many different possibilities there truly are, and it's almost unbelievable."

Celebrating 70

Thanks to everyone who attended EWTA's Info Fair this past fall and helped us celebrate a milestone: the association's 70th birthday. Throughout the decades, EWTA has grown in scope and size, from its beginnings as a plywood research association to a supporter of industry activity to a networking group supporting industry advancement and information transfer. Today, with an all-time high of 107 members, EWTA is poised for even more growth. On page 44, we capture some of the highlights of the association's success in a photo collage.

Be sure to mark your calendars for the next Info Fair: November 5-7, 2016, at the Hyatt Regency Coconut Point Resort and Spa in Bonita Springs, Fla. More information — and registration instructions — can be found at engineeredwood.org.



Sheila Cain
scain@engineeredwood.org

PELICE Scheduled For April 7-8

The Panel and Engineered Lumber International Conference and Expo (PELICE) show is scheduled for April 7-8 in Atlanta. The popular biennial event is attended by many members of EWTA, APA and the engineered wood industry. The expo follows the Wood Bioenergy Conference and expo April 5-6. Both

events will be held at the Omni Hotel at CNN Center in Atlanta.

PELICE offers marketing forecasts and technical presentations on veneer, plywood, OSB, MDF, particleboard, and other engineered wood products. Visit the event website at pelice-expo.com for more information.

American Wood Council Elects New Chairman

The American Wood Council recently announced the election of Boise Cascade CEO Tom Corrick as the new AWC chairman for a one-year term. Andrew Miller, CEO of Stimson Lumber, was elected the first vice-chairman and Allyn Ford, president and CEO of Roseburg Forest Products, was elected as second vice-chairman. Sierra Pacific President George Emmerson will serve as the immediate past chairman.

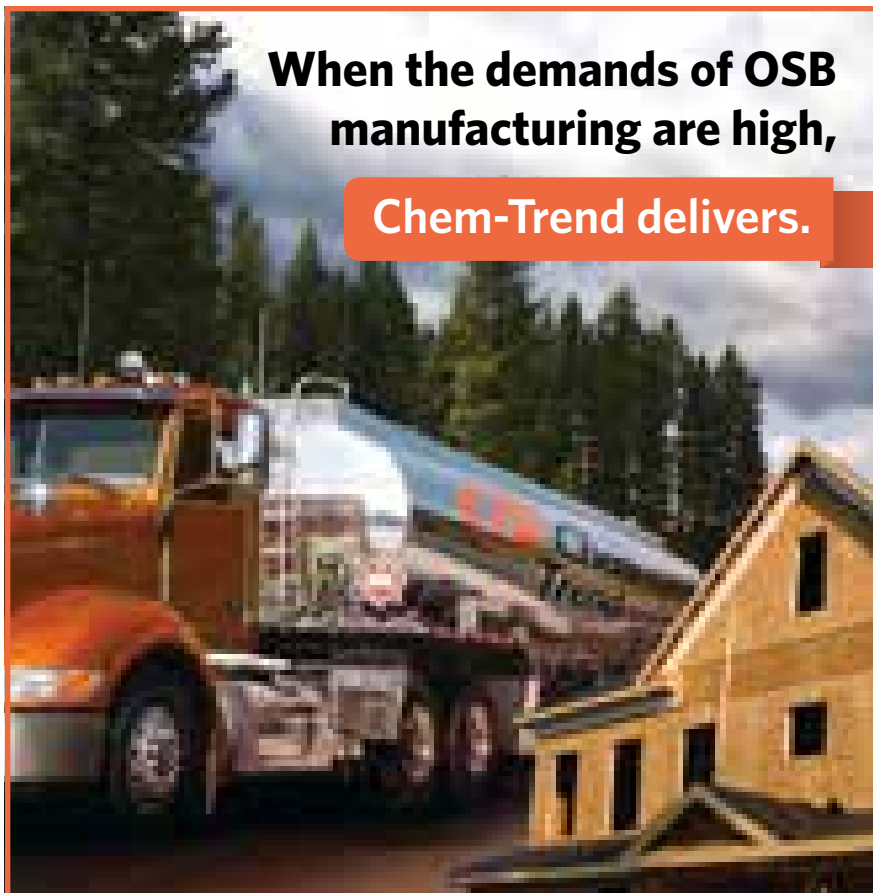
Weyerhaeuser Company, Plum Creek Merge

Weyerhaeuser Company has purchased Plum Creek for \$8.4 billion, the companies announced late last year, creating the world's largest timber, land and forest products company with more than 13 million acres of the most productive and diverse timberland in the U.S., according to a press release. The combined company will have a market capitalization of \$23 billion based on current prices, ranking it sixth among publicly traded companies based in Washington state.

Doyle R. Simons, president and chief executive officer of Weyerhaeuser, will serve as president and CEO of the combined company. Rick R. Holley, Plum Creek's CEO, will serve as non-executive chairman of Weyerhaeuser's board, which will be expanded to 13 directors. The agreement was unanimously approved by the boards of directors of both companies.

GP Sells Engineered Lumber Business to Boise Cascade

Georgia-Pacific LLC announced late last year that it has sold its engineered lumber business to Boise Cascade for \$215 million, including working capital. The sale includes the engineered lumber operations located at Thorsby, Ala., (approximately 230 employees) and Roxboro, N.C., (approximately 40 employees), along with a commercial sales and technical team.



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Energy Code Passed; Benefits Engineered Wood

The Coalition for Fair Energy Codes (CFEC) — an advocacy group under the direction of APA that was established to advance the fair and impartial treatment of all building products in energy codes and standards — along with the American Wood Council, the National Association of Home Builders and other CFEC allies, is celebrating the U.S. House of Representatives' passage of the North American Energy Security and Infrastructure Act of 2015 (H.R. 8) in December.

The comprehensive energy legislation includes language known as Blackburn-Schrader which encourages meaningful energy savings and would require the U.S. Department of Energy's (DOE) building energy code proposals to be technology neutral. It would also better define the DOE's energy code advocacy role with states and would require energy codes and code changes to meet a simple 10-year cost-effectiveness payback analysis in order to receive DOE support.

This is a significant step toward addressing DOE actions that helped lead to the International Energy Conservation Code's current prescriptive mandate of foam wall sheathing in some U.S. climate zones. CFEC has been carefully monitoring the House legislation and will now shift focus to the companion bill in the Senate.

Canada Proposes Standard On Formaldehyde Emissions

After many years of research, Health Canada, the Canadian governmental body charged with assessing and mitigating health risks, proposed a draft standard to limit formaldehyde emissions from glued wood products. The technical drafting committee for this standard includes APA staff and members who, together with representatives from the Composite Panel Association (CPA), Canadian Wood Council (CWC) and the Forest Products Association of Canada (FPAC), provided comments to align the standard with existing industry regulations in the U.S.

In Memoriam

Robert George Harrison

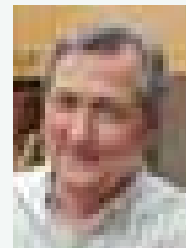
Robert George Harrison, 90, died of natural causes on August 27, 2015. He was at his home in Eugene, Ore., surrounded by his family. Mr. Harrison acquired the Willamette Valley Paper Company in 1952 with a partner, then subsequently became sole owner, renaming it The Willamette Valley Company. He would go on to serve as chairman of the board until his death. Mr. Harrison was a graduate of Grant High School and the University of Oregon, graduating from U of O in 1950 with a bachelor of science in Business Administration. In between high school and college, Mr. Harrison served in World War II as a member of the V-T88 squadron, which primarily flew off the Navy carrier USS Yorktown in the South Pacific. He flew 114 documented combat missions for which he was awarded numerous medals, including the Air Medal, the Bronze and Gold Stars and two Distinguished Flying Crosses. Mr. Harrison is survived by his wife, Dixie, their five children, eleven grandchildren, and two great grandchildren.



Robert George Harrison

Hardie Eubanks

Hardie Eubanks, retired APA Quality Services Manager, died August 15, 2015, in Bonners Ferry, Idaho. He was 61. Mr. Eubanks joined APA in 1978 as a Quality Services supervisor following a two-year stint as a phenol/urea-formaldehyde operator with Chembond Corp. He left APA to work as a Quality Assurance Supervisor at Georgia-Pacific Corporation's Crossett, Ark., plywood mill, but rejoined the association in 1985 as a quality auditor. He became trademark and training coordinator in 1999 and quality manager in 2003. He retired in September, 2012.



Hardie Eubanks

The Draft Standard O160, "Formaldehyde Emissions Standard for Composite Wood Products," has been released for ballot by the Canadian Standards Association (CSA). The draft standard specifies testing methods and criteria that are technically compatible with formaldehyde regulations adopted in the U.S., such as the California Air Resources Board (CARB) regulations and Federal EPA regulations that are awaiting final EPA implementation rules. These methods are specific to composite wood products such as particleboard, MDF and decorative hardwood plywood and do not apply to structural wood products such as OSB and structural plywood.

Industry representatives strived to make this CSA standard as compatible as possible with existing regulations in the U.S. so that there is consistency with the existing methods used by Canadian and U.S. producers of composite wood products.

Further research on VOCs from wood products is being proposed in Canada. The CPA, CWC, FPAC and APA have formed the Canadian Wood Industry Council to act as a focal point to coordinate industry technical input to the development of research and any future standards or regulations that may impact wood products in Canada.

HIGHER WOOD

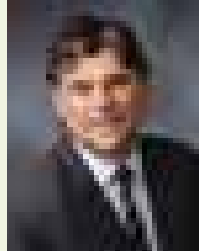
Universities Find Ways to Attract Students to Wood Products Programs

by Sheila Cain

For years, the forest products industry has struggled with finding ways to attract young people to the profession. Colleges and universities across the country have seen interest in wood product-related programs wane in recent years, with prospective students often lured instead by the offerings of the technology sector. Case in point: 22,000 people applied for 6,200 freshmen seats at Virginia Tech in 2015, but only five sought to join the college's Department of Sustainable Biomaterials, according to Dr. Paul Winistorfer, dean of Virginia Tech's College of Natural Resources and Environment.

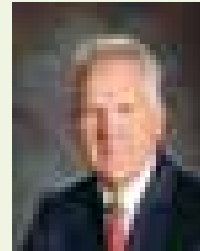
"Almost without question, the students in our wood products programs

THE PANELISTS



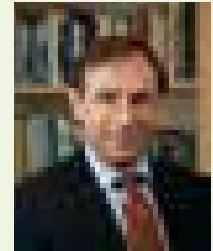
Dr. Thomas Maness
Oregon State University

Cheryl Ramberg-Ford and Allyn C. Ford Dean of the College of Forestry; Director of the Oregon Forest Research Laboratory



Dr. Paul Winistorfer
Virginia Tech

Dean of the College of Natural Resources and Environment



Dr. John Innes
University of British Columbia

Dean of the Faculty of Forestry



Photo courtesy of Virginia Tech

Virginia Tech Department of Sustainable Biomaterials students take part in the Wood Enterprise Institute, a nine-month experiential program in which they conceive a product, engineer/manufacture, sell, distribute and summarize business analytics.

did not enter as freshman, but transferred into wood from some other major on campus,” said Winistorfer. “It is not a known discipline in high schools and awareness of the career opportunities is not readily evident to the high schools, or counselors.”

What academia and industry want students to know: The wood products industry is exciting, high-tech, progressive and environmentally sustaining.

APA hosted a panel discussion at its Annual Meeting in Coeur d’Alene, Idaho, last October to discuss how the industry is changing; debate new approaches in curricula and building material research; and gain insights into a student population that will be graduating into the forest products industry. Guests included Winistorfer, along with Dr. Thomas Maness, the Cheryl Ramberg-Ford and Allyn C. Ford Dean of the College of Forestry and Director of the Oregon Forest Research Laboratory at Oregon State University. Unable to attend the panel discussion due to illness (but included in our question-and-answer below) was Dr. John Innes, Dean of the Faculty of Forestry at the University of British Columbia.

The *Engineered Wood Journal* posed several questions to the panelists, touching on recruitment challenges, rebranding university programs, and university/industry partnerships. Here’s what they had to say.

Engineered Wood Journal:

What is the greatest challenge that higher education, and your university in particular, faces in attracting, recruiting and preparing young people for a career in this industry?

Dr. Thomas Maness, OSU:

Competitiveness is the greatest challenge that our industry faces. This is a period of great change in the industry, with many retirements and new opportunities presenting themselves. To be competitive in the future we must attract the very best graduates into our businesses now. This means that our challenge is to attract highly qualified students — not just more students. Also, a large number of high quality students in a program brings up the level of the entire program.



Photo by Jamie Myers/UBC

Students participate in the University of British Columbia’s Forestry Spring Camp in the Malcolm Knapp Research forest.

To attract top students we must 1) clearly demonstrate a rewarding career path, and 2) get the word out there to all prospective students. The best way for us to accomplish both goals is to build strong partnerships with employers. Employers can offer scholarships and internships, give guest lectures, and sponsor career information nights. Employers can help us recruit local high schoolers in the home community — students who will have the highest probability of returning to the community. We have done this at OSU and it has paid big dividends, but we are just starting to see success. Employers need to buy in to the fact that they must become “education partners” if their companies are going to succeed in the future. Universities have to do their part by being a good partner.

Dr. Paul Winistorfer, Virginia Tech:

Young people, unless there is a family history in our industry, simply are not

aware of the industry at large and don’t recognize it as a destination when headed to the university to study. This is not a new problem for us – we’ve lived it for decades. Admission to higher education today is more competitive than any time in the past and with the nationwide push and recognition of STEM degrees (science, technology, engineering, and math), we could fill our institutions with students interested in all of the engineering disciplines. That is not a bad thing. We need engineers, and lots of them. But we also need wood scientists, forest products marketing, sales, manufacturing, design, and a host of other skill sets that high school students don’t recognize as being a part of our industry. We have success in attracting students to the industry/disciplines once they are on our campus and have the opportunity to explore the wealth of opportunities that exist on any major university campus. We need more internships, summer op-

WOOD PROGRAM GRADUATE



Class of
2015

NAME: Zachary Matthews

AGE: 24

UNIVERSITY: University of Idaho/Forest Products & Wood Science program, B.S. in Renewable Materials

GRADUATION YEAR: 2015

EMPLOYER AND JOB TITLE: Boise Cascade, Industrial Engineer

DESCRIPTION OF YOUR JOB: As an industrial engineer, I study every aspect of the manufacturing process in order to find areas where improvements can be made to save the company money and improve our process.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: The forest products industry was appealing to me because of my love for the outdoors. Being an avid sportsman, I enjoy having the opportunity to have a career that keeps me close to nature.

portunities, mentoring, and interaction with the industry to better prepare our students for a successful career in the industry. We are making progress following extensive curriculum revision in the past several years. Treating the root cause is always harder than treating the symptom.

Dr. John Innes, UBC:

This very much depends upon what sort of students you are referring to. We don't have any real problems recruiting students, and are more concerned about our capacity to teach all those who are interested in a career in the industry. We have an award-winning program in Wood Products Processing that continues to attract very high caliber students, and there are also significant numbers of international students applying to the program. As a result, we have been increasing our teaching capacity, particularly through the recruitment of extra instructors who can take on some of the more routine instruction. They can also ensure that the teacher-to-student ratio remains appropriate; something that is very important from a workplace safety point of view. We have a vibrant co-op program that ensures that students are fully prepared for a career in the industry. The challenges that we face in our program largely revolve around the fact that we have been very successful in recruiting increasing numbers of stu-

dents, particularly international students. Classroom sizes have grown, which has had a very real impact on the way that we teach lab-based courses, where safety is a particular concern. Additionally, the increasing numbers of international students has introduced a number of challenges related to cultural integration and communications skills. Finally, while we have historically been able to place 100 percent of our co-op students, the reality is that the demand for co-op jobs now far exceeds the supply of available industry placements, and further efforts and resources are required to foster relationships with potential co-op employers.

Engineered Wood Journal:

Some universities have been rebranding their programs to attract new talent and address emerging opportunities for sustainable biomaterials. What does this look like at your university?

TM:

We changed the name of our college from the "College of Forestry" to "The College of Forestry". We believe that our profession demands dedicated professional schools, and we aspire to be the best in the world at what we do. We have made the decision to focus on the Pacific Rim, and we have made strategic investments to create opportunities for students and faculty to study or work in this region.

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We believe that rebranding must be done with care. Our goal is not just to attract more students, our focus is creating great careers for graduates and great employees for employers. We believe that if we are successful in meeting these goals we will be able to attract sufficient numbers of students to sustain our college. At OSU, we receive a great deal of financial support from alumni and

employers. Without this support I believe we would not be able to maintain this professional focus.

PW:

At Virginia Tech we took an in-depth look at our programs, curriculum, naming of degrees and majors, naming of departments, and even the college name. We have re-branded following an 18-month comprehensive project to examine who we are, what we do, and what opportunities there are for students in a

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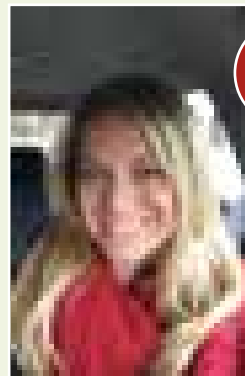
Bob Call, General Manager

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WOOD PROGRAM GRADUATE



Class of
2010

NAME: Natalie Macias

AGE: 31

UNIVERSITY: Oregon State University/
Department of Wood Science and
Engineering, Masters in Forest
Products Marketing

GRADUATION YEAR: 2010

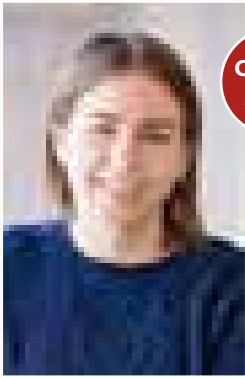
EMPLOYER AND JOB TITLE: APA - The
Engineered Wood Association,
Contractor/Latin America
Representative

JOB DESCRIPTION: Based in Panama, I
provide support for APA's programs in
Central America, South America, and
the Caribbean. This is accomplished by
participating in trade shows, trade ser-
vicing, and assisting APA members with
increasing exports to the region.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: I grew up in the
wood products industry — my dad
owns a wholesale/remanufacturing
company in Oregon and since working
in the lumberyard when I was in
college, I knew I wanted to stay in
the industry. The people are amazing
- it's a very close-knit industry with
exceptional people.

WOOD PROGRAM GRADUATE



Class of
2003

NAME: Angel George

AGE: 36

UNIVERSITY: Michigan State University,
B.S. in Forestry

GRADUATION YEAR: 2003

EMPLOYER AND JOB TITLE: BASF
Corporation, Technical Specialist

DESCRIPTION OF YOUR JOB: With nine-plus years in quality at multiple OSB facilities, I have a solid understanding of the equipment used, and advise our customers how their respective area equipment affects quality. I interact with personnel across the mill site, provide best practices of MDI to our customers, and help them optimize their processes to create a quality panel.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: Forestry was a more interesting subject to me than business, finance, chemistry or teaching. My first semester at MSU, we had a dendrology course where we walked around campus to identify all of the various tree species. This might be why I stayed. I figured that no matter where I went, there would be trees, so there would always be something familiar. The more I learned throughout the rest of my time at MSU, the more I realized how vital trees are as a renewable resource both for recreation, and for building materials.

future career path. I will declare success on all fronts. If you can't reach 'em, you can't teach 'em. Naming and brand are important to our students. Course titles, course content and the sequence of the curriculum is important to our students and employers. Following re-branding and curriculum changes and introduction of new curricula, enrollment in our college has grown nearly 60 percent in the past five years. And because we have an ethical responsibility to be truthful that there are career opportunities in these disciplines, we've added a career fair in our college and welcome industry participation. We are seeing real success in linking students to career opportunities with agency and private sector partners.

J|:

We have not felt the need to re-brand our Wood Products Processing program, since demand for it is strong and continues to increase. We [have introduced] a new Master's program called the Master of Engineering Leadership in Green Bio-products. This is a collaborative program between our Sauder School of Business, the Faculty of Forestry and the Faculty of Applied Sciences. The program combines training in business skills with the development of a comprehensive understanding of the chemistry and anatomy of the tree and its role as one of the most prolific forms of biomass.

Students study lignocellulosic separation chemistry and the production pathways for biocomposites and fuels. They also examine the spectrum of potential bio-products, including biopolymers, biorefining, bioenergy and public policy for the bio-products sector.

Both the Department of Wood Science (the administrative unit that houses the undergraduate program) and the Faculty of Forestry have discussed re-branding on several occasions, largely because most forestry institutions across North America seem to have followed this trajectory. However, given that our enrollments are steadily increasing, we see no need for re-branding at this time. Our overall vision is to go well beyond a simple image exercise of giving ourselves a new name, but rather to challenge and change the public's conception of forestry/wood science. We feel that we have been successful in doing this by showcasing our diversity in research activities and in teaching programs. The launch of the Faculty of Forestry's new undergraduate program in Urban Forestry is a prime example of this.

Engineered Wood Journal:

How do you envision universities working with industry in the building material research arena? How are you working with individual manufacturers, and what opportunities do you see for increased cooperative research?

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Photo by Joseph Loferski/Virginia Tech

Undergraduate student researchers Catherine Juca and Anthony Holliman test the strength of a cross-laminated timber beam on a 50,000-lb capacity materials testing systems machine in the Department of Sustainable Biomaterials, College of Natural Resources, at Virginia Tech.

TM:

We believe that building materials are Oregon's competitive strength, so building materials and buildings are the focus of our program. We are investing in education and research programs to help fuel the sustainable building industry of the future. We have created a new, innovative partnership with University of Oregon's Architecture program to connect research, design and manufacturing of buildings made from sustainably produced wood products. Our college is also strongly connected to the rural communities of Oregon, and we believe that the production of modular buildings made of wood can help bring family wage paying jobs to rural communities. We are working very closely with manufacturers, architects and builders to facilitate the development of this new industry and this work is paying off. Currently we are helping with plant design, certification and testing, material science and marketing. As our new UO partnership takes off, we will be working more closely with designers and architects.

PW:

Universities are a wealth of intellectual talent and curiosity. Both our faculty and our students have much to offer the building materials research arena. As a faculty member I personally worked with the composite panel industry for

several decades on cooperative projects. Our higher education institutions have a long history of collaborative research with the building materials industry. Sometimes the criticism is that our work takes too long, or it is not a contemporary problem-solving issue. While faculty do research, they also teach, sometimes multiple classes each semester, and they have other obligations to the university. One of our primary goals is education of our students, both undergraduate and graduate students. Education of the students takes time, it takes real world experiences, real world problems, and real world failure. We are, after all, training the future professionals of the building materials research profession. There is a very high expectation that faculty will undertake research and because of that expectation, we welcome with open arms as many research opportunities with the industry as possible. We can be organized in research cooperatives, where we work openly with multiple industrial partners on research projects. We can do confidential research with the industry. We can protect intellectual property of the industry in our working agreements. We can work with the industry in almost any fashion of agreement you can imagine. The wood industry is not known as a sector that makes big investments in R&D in comparison to other sectors. Partnering with university faculty is one way to leverage scarce resources whereby both

WOOD PROGRAM GRADUATE



Class of 2015

NAME: Reid Foerter

AGE: 23

UNIVERSITY: University of British Columbia, Wood Products Processing program, B.S. in Wood Products Processing

GRADUATION YEAR: 2015

EMPLOYER AND JOB TITLE: Tolko Industries Ltd., Brokerage Sales Representative

DESCRIPTION OF YOUR JOB: My day-to-day activities are focused primarily on building relationships with new contacts in hopes of creating successful business partnerships for both myself and my customers. I spend a large portion of my time analyzing market data, researching potential markets, and contacting different companies to determine if there is value to be added. After speaking with the customers directly, it is my job to find what they need to run their business, and supply the products for a competitive price, in a timely manner.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: Before going into the Wood Products Processing Program at UBC I knew very little about this industry, but my time in the program and co-op work experience showed me the range of opportunities there are to be had. I always tell people, when asked about the industry, that from the outside looking in, the wood products industry is tiny and appears to have minimal potential, but once you're in it you see how many different possibilities there truly are, and it's almost unbelievable. Having been in here for just under a year now, I've come to realize that this is one of the few remaining industries where your word means something.

WOOD PROGRAM GRADUATE



Class of
2015

NAME: Ben Romanchych

AGE: 23

UNIVERSITY: University of British Columbia, Wood Products Processing program

GRADUATION YEAR: 2015

EMPLOYER AND JOB TITLE: FPIinnovations, Business Analyst

DESCRIPTION OF YOUR JOB: Our team works with clients to understand the markets for wood construction products and to develop new products and processes for these markets. I am part of a team that is responsible for analyzing the market and the financial opportunity and developing business plans for a range of ideas and concepts. My job involves working with many external industry clients to understand their needs as well as supporting internal clients in developing products or processes to commercialize.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: Growing up, I was always building different projects out of wood and had the idea that I wanted to pursue an engineering degree. When it came time to research different university programs, the UBC WPP program appeared to integrate wood manufacturing, engineering and business. After being exposed to the wood products industry through the WPP program and co-op jobs, I found the wood products industry provides a very interesting working environment with lots of opportunities.

parties can really benefit. Try us – you’ll like us! I’d like to create a faculty and student-based think tank (Blue Ocean concept) to work with the building materials sector on new, innovative products. Someone said it – if you are not innovating, then you are history.

Jl:

Our Centre for Advanced Wood Processing was established in 1996 to address the need for advanced technical training and managerial training for the value-added wood products manufacturing sector. The Centre works very closely with individual manufacturers, and a large amount of co-operative research and extension is undertaken. For example, the Centre provides assistance to individual companies in the forms of product development, management skills training, quality assurance programs, and machine skills training. Students from the Wood Products Processing program can register for the co-op work placements program, and employers of these students are in regular contact with the faculty and the Centre. A considerable amount of research is being undertaken in building materials, with the Timber Engineering and Applied Mechanics Laboratory, as well as the School of Architecture being particularly active. Some of this work is in cooperation with FPIinnovations (a Canadian non-profit member organization which carries out scientific research and technology transfer for the Canadian forest industry), and close links to this industry-based organization have been established.

Engineered Wood Journal:

One of APA’s strategic goals is to “Protect and Grow New Markets.” From a university research perspective, how do you see yourself supporting this goal?

TM:

Competing in the six-story-and-up building industry will require that you have a certified sustainable product. This is because our competitive advantage over concrete and steel is our environmental performance, not cost. Therefore we must have continuous improvement of our environmental and economic per-

formance all along the supply chain, from tree genetics to a completed building. It isn’t about making sustainable building materials, it is about providing sustainable buildings. For many manufacturers this will necessitate an entirely new way of thinking and cooperation along the supply chain. Wood products companies that have ventured into the window and door industry have experienced a part of this, and have found that you have to be on top of your game to compete.

Along with our new partnership, our college conducts research all along the supply chain. It starts with building design, and eventually that leads to forest management — not the other way around. As an industry we are very early in the innovation cycle, and research is absolutely essential to creating and holding these new markets. We are building a new 20,000-sq-ft research laboratory and hiring new researchers to support this vision. We will conduct fundamental research and applied research; protect or share intellectual property; and provide direct service to implement the new technologies and ideas.


PW:

During our college re-branding exercise, we held to the premise that we are a science-based organization. Our new brand is ‘advancing the science of sustainability.’ We need more science, more data, and more promotion of the sustainability aspects of our industry and the products we make. Most of this comes from research. I say it all the time: We in the forestry and wood products industry can save the world from itself! We need more promotional information that is understandable to the public about energy efficiency, life-cycle analysis, and human health aspects of using and living in wood structures with wood furnishings. We need market research, and we have the future consumers of the world sitting in our university classrooms (literally and virtually). We need support from the industry for research projects that will help us position the industry to protect and grow new markets. I also believe we need a well-organized national effort around strategic themes of forest sustainability, managing our forests

and making products from renewable sources. Education is the key. We are not here to brainwash our students. We are here to help them think critically about material choice decisions and the impact of these decisions on global sustainability. I think we can be very involved with the industry in protecting and growing new markets.

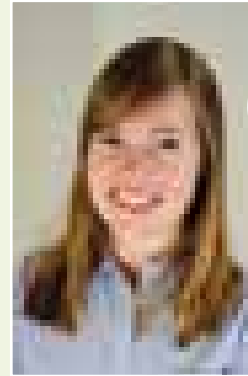
Jl:

From a university research perspective, there are some research opportunities in investigating new markets, and also in how one might protect new markets from unfair competition or unjustified trade barriers. The Department of Wood Science has a long tradition of conducting marketing research within the forest products domain. However, over time, this line of inquiry has evolved into the exploration of broader, more theoretical-ly-based questions revolving around sustainable business management practices. To a certain extent, this market research is still being conducted (often in partnership with institutions like FPInnovations

and the Canadian Forest Service). However, this research is often proprietary, and might arguably be done better by consultants or by the companies operating in those new markets. Protection of markets is an interesting issue: what are you protecting new markets from? Competition? Universities do get involved in proprietary research, but it is generally at a cost to other activities, such as teaching and publishing research. Lastly, it is worth noting that many of the more technically oriented research projects conducted in the Department of Wood Science have built in receptor capacity strategies, which is to say that much of the knowledge created is mobilized to appropriate end-user groups, increasing the likelihood of market adoption and business success. 

Sheila Cain (scain@engineeredwood.org) is communications director of the Engineered Wood Technology Association and editor of its Engineered Wood Journal.

WOOD PROGRAM GRADUATE



Class of 2013

NAME: Chantelle Grills

AGE: 25

UNIVERSITY: University of British Columbia, Wood Products Processing program

GRADUATION YEAR: 2013

EMPLOYER AND JOB TITLE: Independent contractor for CutMyTimber Inc. and Gehloff Consulting Inc.

DESCRIPTION OF YOUR JOB: I primarily work with Cadwork, a CAD/CAM design software, to create 3D models and 2D drawings of timber structures and steel components. The timber and steel components are then fabricated using CNC equipment. Other tasks include project take-offs and estimates, and project management services.

WHY YOU WERE DRAWN TO THE WOOD

PRODUCTS INDUSTRY: I was drawn to the WPP program, as it combined my interests in engineering, science, and sustainability. Entering the program, I had a keen interest in structural engineering and architecture, so I was able to focus my studies on the use of wood in construction through elective courses and co-op job placements.



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WOOD WATCHERS

OSU Programs Accelerate Forestry Education and Research of Advanced Wood Products

by Geoffrey Huntington and Lech Muszynski, Ph.D

In response to the increasing demand to use mass timber products in sustainable building projects combined with the need to bring innovative materials to the U.S. market, the Oregon State University College of Forestry, Oregon State University College of Engineering, and University of Oregon College of Architecture and Allied Arts have launched the National Center of Excellence for Advanced Wood Products Manufacturing and Design.

The center builds on existing research and educational programs at each of the three colleges, and will bring an integrated approach to enhancing and supporting the use of engineered wood building materials and components — such as cross laminated timber — in the

design, engineering, and construction of multi-story commercial buildings in U.S. and global markets.

Priorities for the program's research of sustainable wood products include:

- product and building materials testing;
- code compliance and validation;
- building certification and life cycle documentation;
- new building products incubation;
- new applications of current technology; and
- manufacturing and materials innovation

To accommodate the dedicated research and training programs associated with the center, OSU recently announced an initiative to build a \$65 million

state-of-the-art forest science complex. Scheduled to be completed in the spring of 2018, the Oregon Forest Science Complex encompasses construction of a pair of campus facilities that showcase innovative uses of wood in building design and allows the College of Forestry to help meet the world's growing demand for energy efficient, tall buildings made from sustainable building products.

Additional Lab Space

Included in the plans is a new advanced wood products laboratory to add to existing materials testing laboratory space. The facility, made possible by a \$6 million gift from Sierra Pacific Industries (SPI), will house computer-controlled and robotic manufacturing systems,



The future Oregon Forest Science Complex on the Oregon State University campus will include an advanced wood products laboratory to add to existing materials testing laboratory space. Shown here is the future complex's atrium. The lab was made possible by a donation from Sierra Pacific Industries, and it will be named in honor of the forest product company's founder, Red Emmerson.

plus a pilot plant designed as a learning laboratory for students and continuing education. California-based SPI is a third-generation, family-owned forest products company founded by A. A. "Red" Emmerson and his father, R. H. "Curly" Emmerson. In recognition of SPI's investment, the laboratory will be named in Red Emmerson's honor.

Designed by Vancouver-based architect Michael Green, the buildings will serve as a showcase for engineered wood products. While the facilities will be located on the OSU campus, University of Oregon faculty, staff, and students will also use them as part of the partnership between the schools.

Although construction of the complex has yet to begin, the center has already started a number of initiatives and research programs focused on revitalizing the forest products industry across the Pacific Northwest. With a search for a director for the center ongoing, the center was recently awarded a federally funded grant of nearly \$450,000 by the Economic Development Administration to establish an independent peer-review program to



OSU's new \$65 million forest science complex is scheduled for completion in the spring of 2018.

Image courtesy of Michael Green Architecture

assess and compile performance information relating to mass timber construction for integration into Oregon's building code standards.

In addition, the College, as part of its Institute for Working Forest Landscapes (IWFL) program, has awarded nearly \$550,000 in funding to four research projects to support the mission and research objectives of the center. Research

projects funded by the College and IWFL will explore the behavior of CLT diaphragm panel-to-panel connections with self-tapping screws; fire performance of douglas-fir CLT wall and floor assemblies; structural health monitoring and post-occupancy performance of mass-timber buildings; and CLT fastener solutions for tall-wood buildings.

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Image courtesy of Michael Green Architecture

Primed for CLT Research

As a number of high-profile projects across the globe have demonstrated its use in tall buildings, Oregon is perfectly positioned for private investment in the manufacturing and fabrication of CLT and other new products as an expansion of the state's existing wood products sector. To do so could create new opportunities for family wage jobs in rural, timber-dependent communities where they are needed most. Oregon State has been actively engaged in education and research aimed at supporting the do-

mestic production of structural CLT and mass timber products in Oregon. This effort resulted from a collaboration with Oregon-based company Riddle Lamina-tors (DR Johnson Lumber Co.), which has launched the first structural CLT production line in the U.S.

Through research and the educa-tion of U.S. architects and engineers, the National Center for Advanced Wood Products Manufacturing and Design hopes to drive the innovation to a level necessary to establish Oregon as a leader in wood building design. 

A previous version of this article appeared in the March 2015 issue of Civil and Structural Engineer.

Geoffrey Huntington is the director of Strategic Initiatives for Oregon State University. He can be contacted at geoff.huntington@oregonstate.edu. Lech Muszynski, Ph.D., is an associate professor in the Department of Wood Science and Engineering at Oregon State University. He can be contacted at lech.muszynski@oregonstate.edu.

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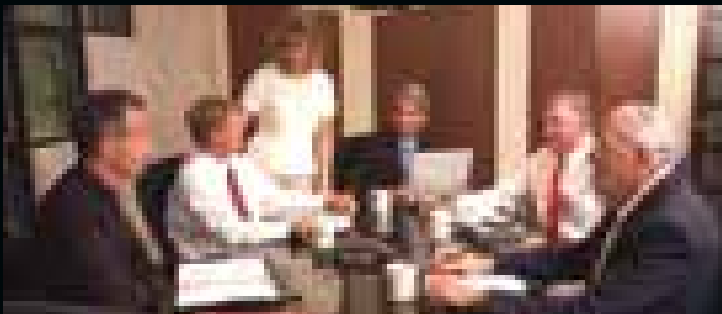
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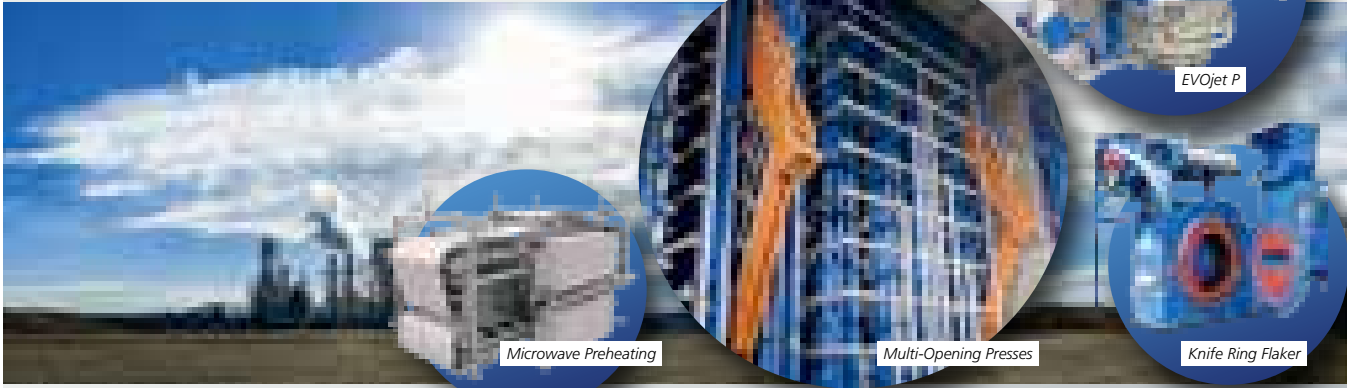
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MULTIFAMILY'S MOMENT

Shift Towards More Multifamily Housing Construction Signals Opportunity for Wood Industry

by Joe Elling

In both the U.S. and Canada, multifamily structures are playing a larger role in meeting the demand for new housing. Since the average size of a multifamily unit is less than half that of a new single-family home, the wood products industry is experiencing a slower recovery in demand than if the single-family share of starts was similar to that of 10 years ago. A long-term perspective of the role multifamily construction has played in meeting the demand for new housing and the efforts of APA to support wood products usage is presented in this article.

Multifamily History

While multifamily starts are on the rise, they are not as high as they have been historically. For those whose experience in the housing industry dates back to just the last decade, the notion that multifamily starts could be near 400,000 units and accounting for over a third of the housing starts in the U.S. may seem exceptional. However, the data in Figure 1 show the recent experience is not out of the ordinary.

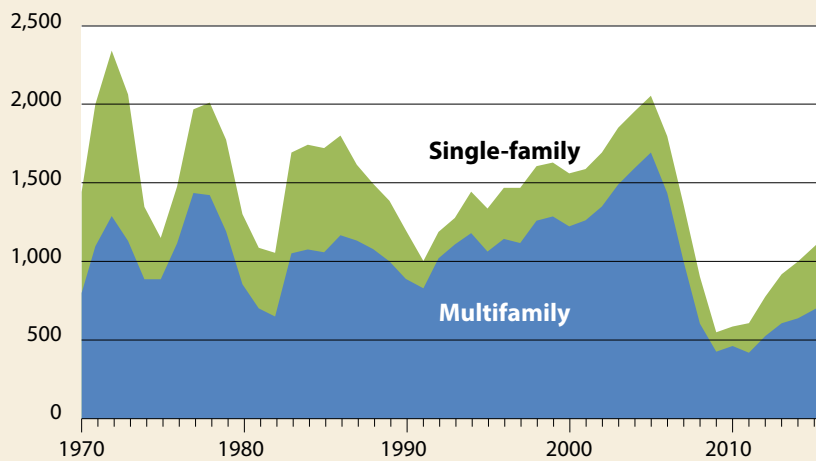
From 1971 to 1973, multifamily starts averaged close to 950,000 units per year and accounted for over 44 percent of the housing starts in those years. This level of demand for new multifamily units was created by the first wave of the Baby Boomers reaching adulthood, leaving home, and finding an apartment to rent. Following the severe recession of the early 1980s, multifamily construction ramped up, due in part to a change in tax laws that enhanced the returns to

investing in rental properties and the fraudulent behavior of some developers and savings and loan executives that led to an overbuild in apartments and condominiums. This ultimately led to

the savings and loan crisis of the early 1990s, and multifamily construction plunged to 170,000 units per year for the 1991-94 time period in order to work off the excess.

Figure 1

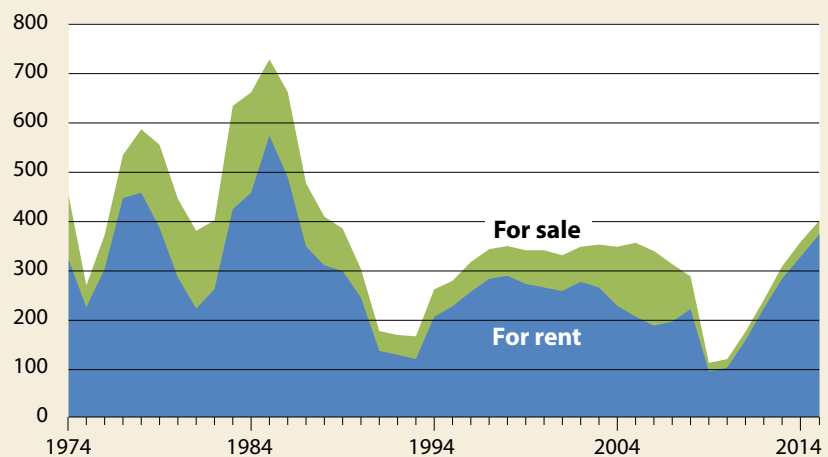
U.S. Housing Starts (THOUSANDS)



Source: Census Bureau

Figure 2

Multifamily Starts by Purpose (THOUSANDS)



Source: Census Bureau

From 1996 to 2005, multifamily starts were relatively stable, averaging 345,000 units per year. Multifamily starts plunged during the Great Recession, averaging less than 120,000 units per year in 2009-10, driven by the collapse in household growth. Since then, multifamily starts have been on the rise, and in 2015 totaled 396,000 units. This marks a 26-year high, but is nowhere close to being out of the ordinary when looking at the history since 1970.

Surging Rental Demand

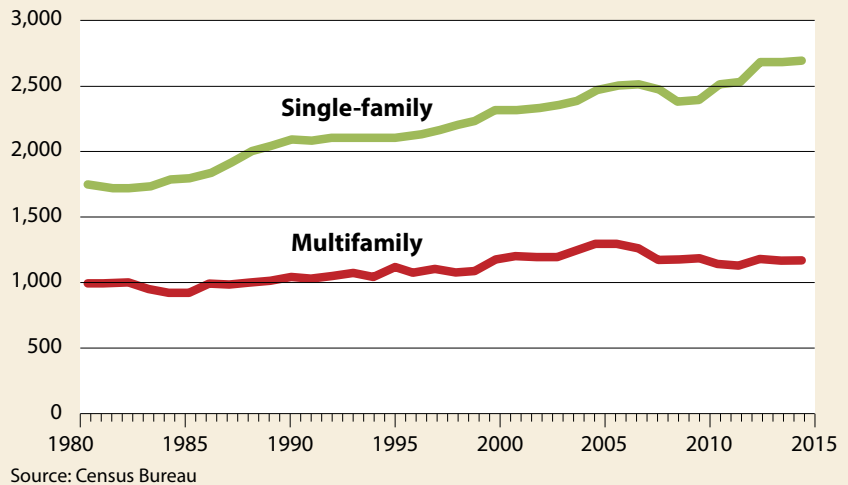
The construction of multifamily units can be for either rental or ownership purposes, such as in a condominium complex. The Census Bureau began tracking the intended purpose of new multifamily units in 1974 and this data is shown in Figure 2. Rental properties have always accounted for over 50 percent of new multifamily construction. What is unique about what has taken place since 2009, though, is that over 90 percent of the multifamily starts are for rental purposes. This is being driven by the strength in demand for rental housing, due to the steady decline in the homeownership rate that has been in place since 2006.

Smaller Units

While the average size of new single-family homes has been on the rise, the same cannot be said for multifamily units. As shown in Figure 3, the average size of a new single-family home has risen by 930 square feet, or 53 percent, since 1980. In contrast, the average size of a new multifamily unit put-in-place since 1980 has risen 180 square feet, or 18 percent. In fact, the average size of a new multifamily unit built peaked in the 2005-07 period when condominiums accounted for about 45 percent of multifamily starts (as condominiums tend to be larger than rental units.)

Figure 3

Comparison of Average Size per Start in U.S. Single-family vs Multifamily Units (SQ. FT.)



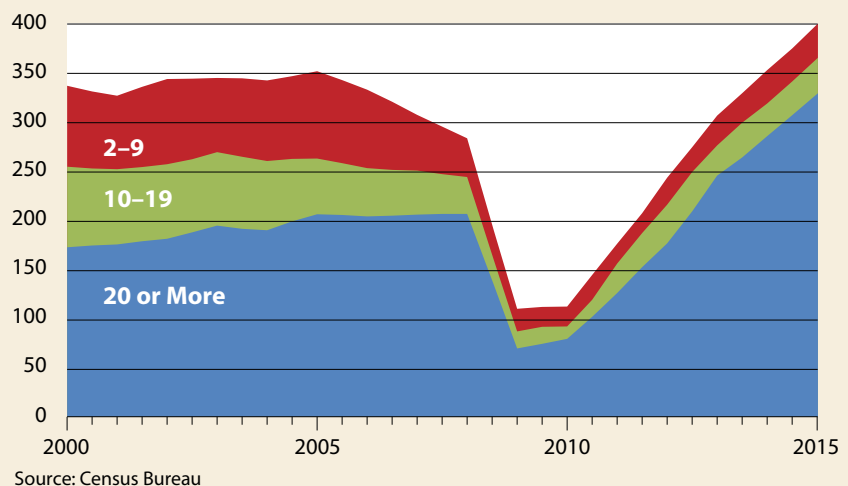
More Units per Building

Another factor to consider in understanding wood products usage in multifamily construction is the number of units per building. As shown in Figure 4, the number of multifamily units started in buildings with 20 or more units in

2015 will be near 325,000. This is 125,000 greater than the peak reached in 2008. This shift towards greater concentration of multifamily units in a single building is being driven by increased activity in the urban core, especially in the Northeast and Pacific Coast states.

Figure 4

Multifamily Starts Number of Units in Building (THOUSANDS)



Biggest Gains in West and Northeast

Multifamily units are accounting for a greater share of starts across the nation, but the most noticeable shift has occurred in the West, largely in the Pacific Coast states, and the Northeast. As shown in Figure 5, the number of multifamily starts in the Northeast and West in 2015 exceeded the peaks in the previous decade by 19 percent and 71 percent, respectively. The primary force driving the strong demand for new multifamily units in these regions is the severe affordability challenge created by the surge in home prices. For example, based on the Case-Shiller Home Price Index, home prices in the Bay Area have increased 73 percent since March 2012, while the national index has increased 29 percent.

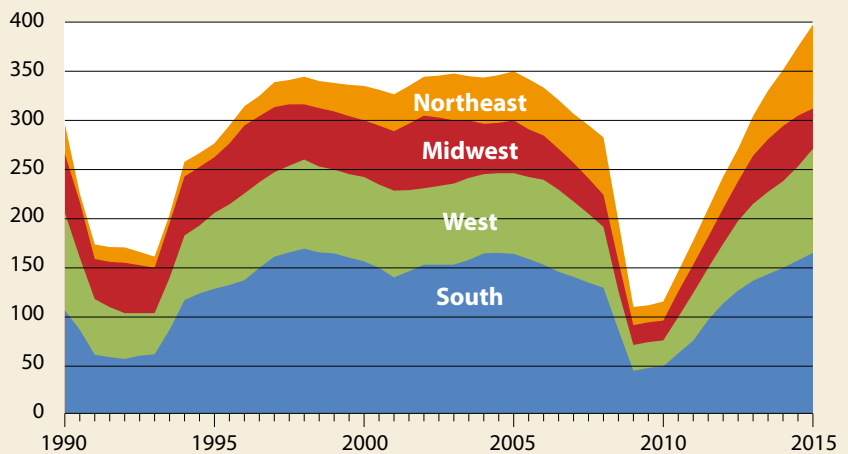
Multifamily Units in Canada

Similar to the U.S., multifamily units are playing a greater role in meeting the demand for new housing in Canada. This trend is not new to the recovery since the end of the recession, as illustrated in Figure 6. Multifamily starts in 2015 totaled 97,400 units, a record high, and accounted for 49 percent of all housing starts in 2015.

In contrast to the U.S., the surge in multifamily construction has been driven by multifamily units providing a less expensive ownership option, as the homeownership rate in Canada has not fallen like in the U.S. Whereas less than 10 percent of the multifamily starts in the U.S. have been built for ownership purposes since the recovery started, over 60 percent of the demand for new multifamily units in Canada has been driven by this factor. (See Figure 7 on page 26.) This is especially true in Montreal, Toronto and Vancouver, where multifamily starts accounted for 84 percent, 61 percent and 63 percent of the starts in 2015, respectively.

Figure 5

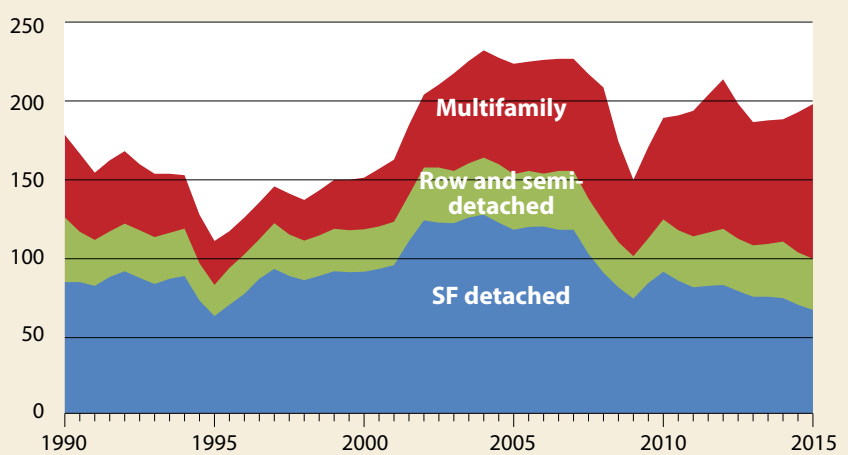
Regional Distribution of Multifamily Starts in U.S. (THOUSANDS)



Source: Census Bureau

Figure 6

Canada Housing Starts (THOUSANDS)



Source: CHMC

The homeownership rate in Canada has not declined like that in the U.S. for the following reasons:

- Canada avoided a surge in foreclosures, as its recession at the end of the previous decade was less severe than in the U.S.

- Canada did not experience a home price bubble due to a more disciplined mortgage banking system.
- College graduates in Canada are less encumbered by student debt burdens.

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Looking to the Future

Multifamily construction is likely to continue to play a more meaningful role in meeting the demand for new housing than in the prior decade, with the prospects of higher mortgage rates down the road. Wood products of all types will continue to play a critical role in the multifamily construction process. As shown in Figure 8, 85 percent of the multifamily buildings completed in the U.S. in 2014 had three floors or less. Based on surveys conducted by the Home Innovation Research Labs, the market share of structural panels, OSB and plywood, used in exterior wall sheathing in buildings with four floors or less has averaged 81 percent since 2006.

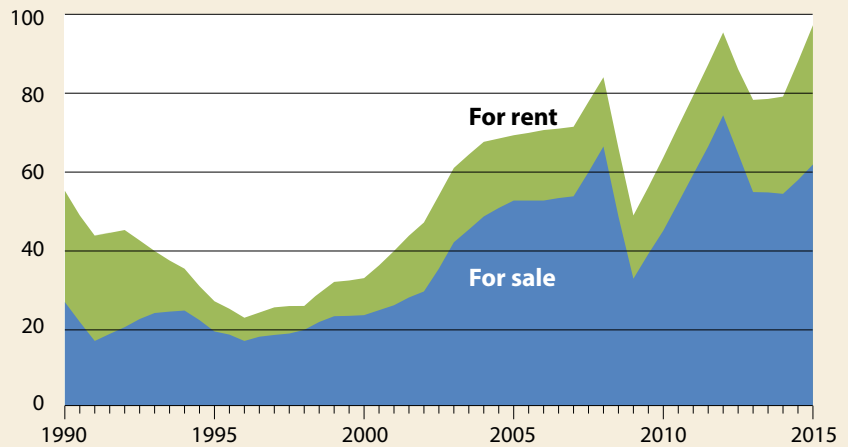
APA – The Engineered Wood Association is engaged in efforts to support greater use of its members’ products in multifamily construction. These efforts include code changes to allow light-frame construction in taller buildings, promoting the use of engineered wood framing materials such as glulam, I-joists, and laminated veneer lumber, educating builders on advanced framing techniques and use of thicker panels in floors for improved acoustics.

These efforts will pay dividends as developers and builders look for cost-competitive construction systems as they work to meet the demands for affordable rental housing in the future. 

Joe Elling is the director of Market Research for APA — The Engineered Wood Association. He can be reached at joe.elling@apawood.org. He wrote an article that discussed the forces driving the drop in the rate of homeownership in an article entitled, “The History of Homeownership” published in the Spring 2015 issue of the Engineered Wood Journal.

Figure 7

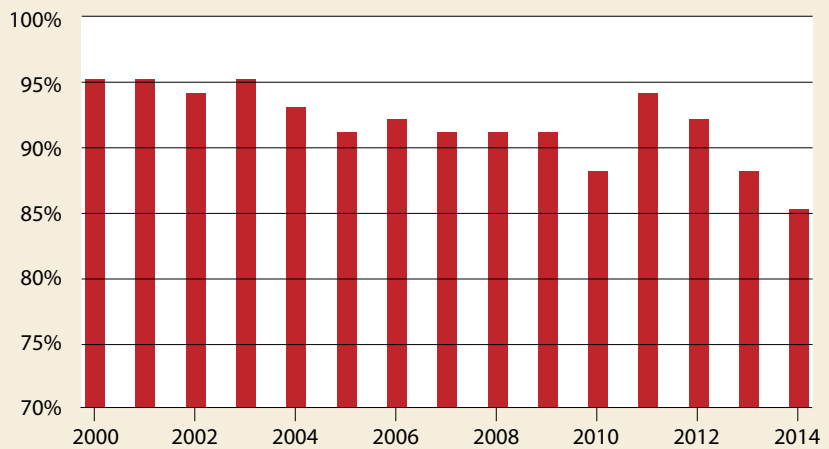
Multifamily Starts in Canada by Intended Purpose (THOUSANDS)



Source: CHMC

Figure 8

Percentage of Multifamily Buildings Completed in U.S., 1–3 Floors



Source: Census Bureau

patent pending

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STAYING THE COURSE

Business Outlook Survey Shows Steady Success, Guarded Optimism

by Sheila Cain

The old idiom, “Slow and steady wins the race” seems to hold true for Engineered Wood Technology Association members. The results gathered by EWTA’s annual Business Outlook Survey (members were polled in January of this year) indicate little change in members’ opinions on their companies’ growth, employment levels and other business related issues as compared to the previous year. Luckily, responses one year ago were generally optimistic.

The outlook isn’t as rosy as it was just a few years ago, however. This year, we take a look at member responses from 2011 to the present, compiling them in graphs to show trends. Members seemed to have had the highest hopes in 2013, about the time the economy started to get some legs. Optimism has dropped slightly since then.

The 2016 Business Outlook Survey shows 68 percent of respondents saw their company’s wood-related business improve in 2015 over the previous year.

This number is nearly identical to that of the previous year (69 percent), although five percent indicated that they saw their business worsen in 2015 (no members said this for 2014). Twenty-six percent of those who responded said their wood-related business stayed the same in 2015.

Members are still remaining hopeful. Sixty-three percent said they felt that business will improve in 2016 over 2015. Thirty-two percent predicted it will remain the same, and only five percent thought it will worsen.

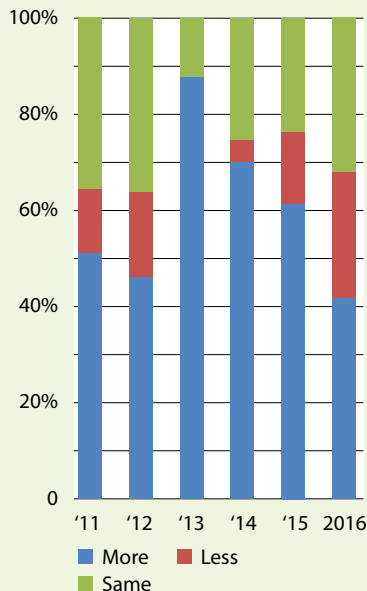
This year’s survey shows that the change in member companies’ wood-related employment was nearly the same in 2015 as it was in 2014: both this year and last year, 42 percent of respondents said employment levels increased. Fifty-eight percent said levels stayed the same (as compared with 54 percent last year), and none indicated that wood-related business employment levels decreased (four percent in the previous year’s survey indicated a decrease).

Looking into 2016, 58 percent expect their employment levels to stay the same (compared to 50 percent who said the same last year). Thirty-nine percent of responding members expect employment levels to increase in 2016 (42 percent indicated they thought levels would rise in 2015). Only three percent feel levels will decrease in 2016. Last year, members were slightly less optimistic, with eight percent expecting levels to drop.

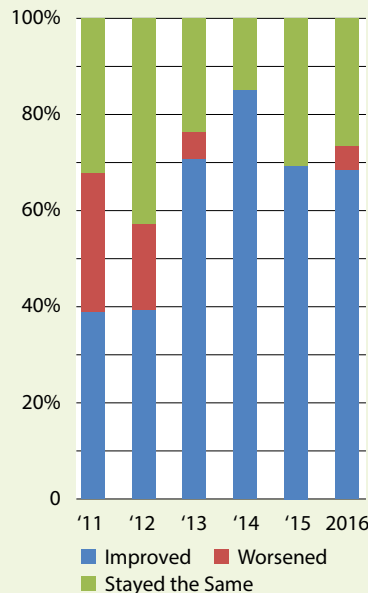
The web-based survey was sent to all EWTA members last year. It posed five questions relating to wood-product businesses’ employment levels and overall business health. Fifty-three percent of respondents were in the equipment/tooling category, 39 percent were in the materials/supplies category and eight percent were in the services/consulting category. Seventy-one percent of the survey respondents were from the U.S., 16 percent were from Canada and 13 percent were headquartered offshore.

Survey Responses: 2011 to 2016

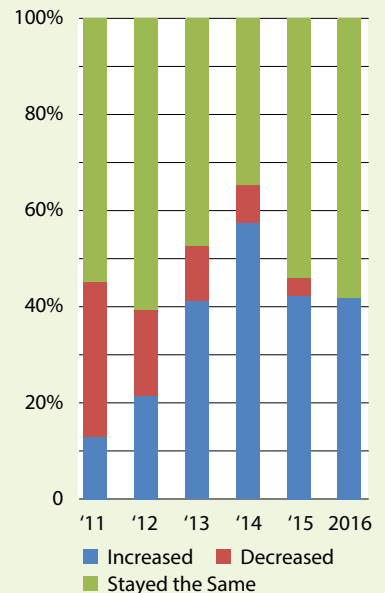
How optimistic are you about your wood-related business this year versus last year?



Did Business Improve, Worsen or Stay the same This Past Year?



Did Your Employment Levels Change Last Year?



How important are the following for recovery:

	Very Important	Important	Unimportant
State of the U.S. housing market	79%	18%	3%
Government regulation	29%	50%	21%
Government economic policy	29%	53%	18%
Marketplace competition	53%	45%	2%
Raw material prices or supply	32%	55%	13%
Transportation costs	19%	55%	26%
International exchange rates/trade policies	45%	39%	16%
Labor issues	11%	50%	39%
Economic uncertainty	60%	32%	8%

Guarded Outlook

Overall optimism about member companies' business opportunities in the coming year has dipped slightly from that indicated in the previous year's survey. Forty-two percent said they were "more optimistic" about their wood-related business in the coming year versus last year; a solid number, but less than the 62 percent of respondents who expressed the same sentiments a year ago. Twenty-six percent said they felt less optimistic (compared to 15 percent last year).

Thirty-two percent indicated their optimism about the future remains the same as it did last year.

Survey takers were also asked to rank several factors as "very important," "important" or "unimportant" for industry recovery. Nearly every respondent indicated that the state of the U.S. housing market was important, with 79 percent indicating that they felt it was "very important" and 18 percent finding it "important."

Responding members also felt that Government Economic Policy was important, with 29 percent finding it "very important" and 53 percent indicating it is "important." Eighteen percent felt it was unimportant. The survey indicated that members are still concerned about the economy. Ninety-two percent of responding members felt the issue was either "very important" or "important," slightly higher than 89 percent of respondents last year. Only eight percent of this year's survey respondents ranked "Economic Uncertainty" as "unimportant."


Taking Action

Whether the coming year is viewed with optimism or pessimism, EWTA members are taking steps to become and remain successful. In a section of the survey where respondents were asked to list what they have done to adapt to economic conditions or exploit opportunities, members have said they have built new facilities, developed markets outside North America, and invested in new product development.

"(We have) become more savvy with competition and the marketplace," said one member. "(We have) increased our advertising and marketing focus in the panel/engineered wood industry."

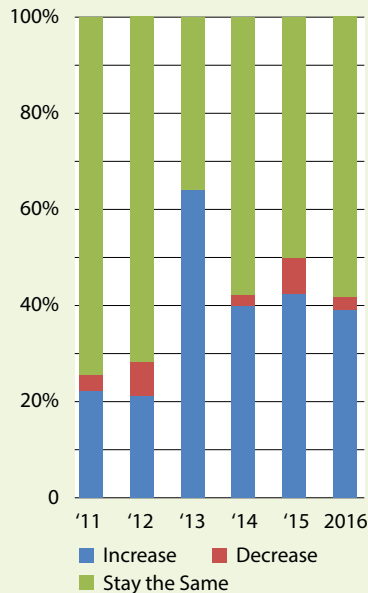
Some companies are reaching beyond in-house knowledge to help create effective business plans: "(We) talk with customers to know what they want and focus developments accordingly."

Many said their 2016 business plans focused on expansion — especially in the staffing arena.

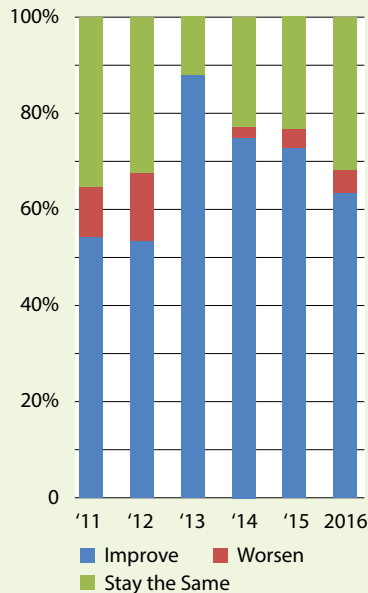
"(We are) hiring the smartest people we can to develop new products for the industry," said one member. 

Sheila Cain (scain@engineeredwood.org) is communications director of the Engineered Wood Technology Association and editor of its Engineered Wood Journal.

What is Your Employment Projection for The New Year?



What is Your Business Projection for The New Year?





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2016 Membership Directory

The Engineered Wood Technology Association (EWTA), the related nonprofit supplier organization of APA - The Engineered Wood Association, serves as a networking and information transfer vehicle between North America's engineered wood product manufacturers and their product, equipment and service providers.

This membership directory, updated for 2016, includes company descriptions and contact information for all EWTA members. It's just one of many tools designed to help members connect with each other and the industry.

Membership Benefits

The benefits of EWTA membership are many. Among them:

- Direct business-to-business links with your customers in the engineered wood products industry through such vehicles and events as Info Fair, an annual supplier show held in conjunction with the APA annual meeting; industry forums and seminars; APA annual meeting events; company news and advertising in the *Engineered Wood Journal*; and dissemination of your company news and technology innovations via the EWTA website and *Connections* e-newsletter.
- Free access to the APA monthly housing starts and quarterly production reports, and discounts on other APA publications and reports.
- Discounts on APA events and *Engineered Wood Journal* advertising.
- Free company listing and profile in the annual meeting issue of the *Engineered Wood Journal* for EWTA Info Fair exhibitors.
- Member products and services directory.
- Annual meeting and other event sponsorship opportunities.
- Supplier award program participation.
- Opportunities to exchange information with other EWTA members, APA members and APA staff via an EWTA advisory and subcommittee structure.
- Opportunities to support, participate in and receive the results of important industry technical and market research projects.

The annual cost of EWTA membership is just \$1,200. For more information about the benefits of membership or for a membership application, contact Terry Kerwood, Managing Director, terryk@engineeredwood.org or 253-620-7237, or visit the EWTA website at www.engineeredwood.org.



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Phone: 336-801-0888

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High Point, NC 27260

alan.grainger@akzonobel.com

www.akzonobel.com/casoadhesives



Albany International

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Contact: Tom Israel - Global Product Manager

Phone: 920-521-4618

3601 Electric City Blvd.

Kaukauna, WI 54130

tom.israel@albint.com

www.albint.com



ALTEC Integrated Solutions, Ltd.

ALTEC Integrated Solutions are industry leaders in scanning, optimization, control systems, engineering services and quality control, with particular expertise in Veneer Lathe Peeling Lines and plywood manufacturing. In addition to the controls we also supply hardware such as Chargers (electric and hydraulic), Core Drives, Electric Clipper with controls solution and Stackers. We are the industry leaders in applying electric linear actuators. Our customers use our technology and our services to improve their recovery, product quality, and their bottom line.

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Phone: 604-529-1991

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www.andritz.com

Arch Wood Protection, Inc.

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Phone: 678-627-2280
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Natashia Kletter - Office Manager
Waylon Burlingame - Pneumatics & Warehouse Operations Manager
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Contact: Cliff Lane - President & General Manager
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Contact: Eric Johnston - Product Manager
Panel Industry
Phone: 336-434-6644
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Covestro LLC

Covestro LLC is a world-leading supplier of high-tech polymer materials. Thanks to our global presence and close proximity to our markets, we are the partner of choice for a variety of industries. For manufacturers of composite wood products, consistent product quality and process advantages make Covestro's Mondur® pMDI your natural choice for binding wood composites. Offering extensive R&D and strong technical service, Covestro is your source for binders and binder technology. The excellent property performance of wood composites bonded with Mondur pMDI products makes them especially suited for use in specialty applications; particleboard, laminated-stranded lumber, moisture-resistant OSB, OSB web-stock and OSB flooring.

Contact: Tim Thiel - Industrial Marketing Manager
Phone: 412-777-4105
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Dieffenbacher USA, Inc.

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Contact: Rick Burns - Vice President of Sales - North America
Phone: 678-325-5813
2000 McFarland 400 Blvd.
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rick.burns@dieffenbacher.com
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Eastman Chemical Company

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Contact: Richard Wright
Phone: 423-229-8334
200 South Wilcox Drive
Kingsport, TN 37660
rwright@eastman.com
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Electronic Wood Systems, N.A.

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Phone: 503-643-6305
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Engineered Coated Products, a division of Intertape Polymer Group

Engineered Coated Products supplies an exclusive automatic wrapping system and other wood wrapping products, promoting safety, reducing labor and providing new packaging alternatives to the engineered wood marketplace.

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Phone: 780-224-6569
392 Heritage Drive
Sherwood Park, AB T8A 6A4 Canada
smaw@itape.com
www.itape.com



Evergreen Engineering, Inc.

Evergreen is a multi-discipline (mechanical, electrical, civil/structural and environmental) engineering firm. From project planning and feasibility studies through detailed engineering, construction management, maintenance and process consulting, to start-up and commissioning support, Evergreen can handle any project in your mill. Our wood products experience includes OSB, LVL, I-Joist, Particleboard, MDF, Hardboard, WPC, Pulp & Paper, Lumber, Plywood, Chemical and Resin plants. "Our mission is to provide customized support to move our client's vision to reality by delivering practical engineering solutions, displaying project leadership and contributing technical expertise."

Contact: Aaron Edwards - Director, Industrial Business Development
Phone: 541-484-4771
1740 Willow Creek Circle
Eugene, OR 97402-9152
aedwards@eeeug.com
www.evergreenengineering.com



Flamex, Inc.

Flamex Inc. is a leading supplier of customized industrial process fire prevention and protection equipment. We specialize in the protection of facilities that handle combustible dusts that utilize pneumatic dust collection and air filtration systems. To address the process fire hazard inherent in various industrial applications, our company pioneered the utilization of a new technology in North America by introducing the FLAMEX Spark Detection and Extinguishing System in 1977 and the MINIFOG PressProtect System in 1997 for the protection of Industrial Presses. The flexibility of these systems allows their use in other hazardous areas such as Thermal and Hydraulic oil rooms where AFFF Foam Fire Fighting systems can be utilized for further protection.

Contact: Ed Pridgen - Minifog Product Manager
Phone: 336-299-2933
4365 Federal Drive
Greensboro, NC 27410-8116
epridgen@sparkdetection.com
www.sparkdetection.com

Flexpak Corporation

Flexpak Corporation is a U.S. based manufacturing company that provides woven wrap and packaging solutions to wood, lumber, and composites markets. Printed woven wrap is available for I-Joists, LVL, Glulam, lumber, and other specialty products. Flexpak manufactures several different shipping cover options for Plywood and OSB products including sewn woven covers, railcar covers, and heat sealed poly covers.

Contact: Ryan Hackbarth - Sales Manager
Phone: 541-385-9444
1006 SE 9th Street
Bend, OR 97701
sales@polycovers.com
www.polycovers.com



Fusoni U.S.

Fusoni develops and manufactures release agents and additives for panel board manufacturing, and also for paper impregnation processes. For more than 25 years we have been serving clients in Europe, Asia and the Americas. Our chemicals expertise extends to other industries, such as release applications in bakery and polyurethane systems. We add value through chemistry, and work closely with our customers, helping them improve the properties of their products and reducing production cost through excellent release and additive performance. We look forward to working with you to make your products better and your business more profitable.

Contact: Adrian Yovanovich - Managing Director
Phone: 210-712-7803
Fusoni U.S. Fusoni Componentes, S.L.
955 Lightstone Drive Polígono Industrial de Argame
San Antonio, TX 78258 C/ Mostayal, parcela D4
33163 Argame - Asturias
España, Spain

ayovanovich@fusoni.us
www.fusoni-chemistry.com



Georgia-Pacific Chemicals, LLC

Georgia-Pacific Chemicals LLC has been an innovative, reliable supplier to the wood products industry for 50+ years. In addition to custom-formulated solutions we develop to meet our customers' specific requirements, Georgia-Pacific Chemicals offers a portfolio of thermosetting resins for plywood, oriented strand board and laminated veneer lumber applications. The product line includes RESI-MIX® ready-to-use mixed adhesives, RESI-STRAN® liquid adhesives and WOODWELD® spray-dried powders. The unique GP® Process Modeling service provides real time statistical modeling of process parameters to identify opportunities for improvement and variation reduction throughout the production process. This can result in improved throughput and performance.

Contact: Georgia-Pacific Wood Adhesives
Phone: 866-4GP-CHEM/866-447-2436
133 Peachtree Street NE, Suite 19
Atlanta, GA 30303
gpchemical@gapac.com
www.gp-chemicals.com



Globe Machine Manufacturing Company

Globe Machine offers single machine centers along with complete systems to the following industries: OSB, MDF, particleboard, plywood, strawboard, moulded door skins, membrane presses, siding, LVL, laminate flooring and sheet plastics. Globe Machine is the leader in the supply of automated I-joist assembly systems and has achieved a leadership role in the cement fiberboard industry and moulded door skin lines. For over 95 years Globe Machine has served the forest products industry.

Contact: Mike Tart - Sales Manager
Phone: 253-383-2584
PO Box 2274
Tacoma, WA 98401
sales@globemachine.com
www.globemachine.com



GreCon

GreCon - Since 1911, Innovation is Our Tradition. MEASURING SYSTEMS: Improves your bottom line. Check out the full range of in-line measuring systems: thickness gauges, blow & delamination detector, moisture meters, raw density profile. Weight per unit area across the whole production width at the mat former and after the press. Detect surface defects on décor panels and flooring. SPARK DETECTION & EXTINGUISHING SYSTEMS: Provides safety for your production. Detect sparks and extinguish them before the filter. Detect heat buildup in silos, bag houses and storage bins. Outlined in NFPA 69, 654 and 664 standards. Factory Mutual Approved.

Contact: Terry Franklin
Phone: 503-641-7731
15875 SW 74th Avenue
Tigard, OR 97224
sales@grecon-us.com
www.grecon-us.com



Grenzebach Corporation

We are a leading global manufacturer and supplier of drying systems to the veneer and building materials industries with over 400 dryer installations worldwide. Grenzebach's new Wood Fiber Insulation Board line produces materials in densities of 3 to 10 lbs. per cubic foot. Our veneer product line includes dryer infeed and outfeed systems, jet and longitudinal dryers, and color veneer grading and stacking systems. Grenzebach has completed extensive rebuilds on all makes and models of veneer and gypsum dryers. Complete parts and service support is also available.

Contact: Charles Shurtliff -
Sales Manager - Building Materials Division
Phone: 678-488-8369
10 Herring Road
Newnan, GA 30265
charles.shurtliff@grenzebach.com
www.grenzebach.com

Guardian Chemicals Inc.

Providing solutions, results and meaningful service has earned Guardian Chemicals Inc. the enviable industry reputation as the "go to" people for chemical technology and services. Our extensive research and development group, in house ISO 14001 certified manufacturing and products like our revolutionary patented PRESSGUARD series release agent technology for MDI resins in continuous and multi-opening presses, keep us at the forefront of the engineered wood industry. From W.E.S.P. and Scrubber treatment technology, process chemicals and defoamers to maintenance chemicals, odor control and corrosion prevention, Guardian's wood group provides our partner clients with a complete package along with the flexibility to adapt products to the specific needs of each individual application and customer.

Contact: Greg Pecharsky - Vice President
Phone: 780-998-3771
155-55202 SH 825
Sturgeon Industrial Park
Sturgeon County, AB T8L 5C1 Canada
gpecharsky@guardianchem.ca
www.guardianchem.ca

H.B. Fuller

H.B. Fuller Plywood Adhesive Coated Solutions has specialists for all your composing needs. Gain improved wood recovery and reduced unit costs at the composer through a package of specialized tapes and strings, patented adhesive application equipment, process improvement tools and expert service for both green and dry veneer process.

Contact: Daniel Gonzalez - Senior Technical
Sales Manager
Phone: 318-349-4081
417 NW 136th Street
Vancouver, WA 98685
daniel.gonzalez@hbfuller.com
www.hbfuller.com

Henkel

Henkel is the world's largest Adhesive company, and LOC-TITE PURBOND offers advanced chemistry, ecologically compliant 1 and 2 component structural wood adhesives. LOC-TITE PURBOND is a world leader in Polyurethane and Polyurethane Hybrid adhesives, offering ductile bond lines, zero Formaldehyde, zero solvents with a wide range of open and set times for Glulam, CLT, Finger jointing, and innovative applications, both cold setting and RF/hot press. With a strong North American sales and technical team and a fully equipped wood lab, we can provide the solutions, support and technology to meet the demanding requirements of traditional wood bonding and innovations of the future.

Contact: Chris Whelan - Business Development Manager

Phone: 604-880-2361

300 Laurier Avenue

Port Coquitlam, BC V3E 3G1 Canada

chris.whelan@ca.henkel.com

www.purbond.com



Hexion Inc.

Hexion Inc. is a leading global source for adhesives, resins, formaldehyde, melamine and derivatives serving a broad range of markets including the forest products, foundry, automotive, construction, composites, electronics and oilfield industries, operating more than 50 manufacturing plants in North America, Latin America, Europe and Asia/Pacific. The Forest Products division of Hexion Inc. is the global leader in supplying resins, adhesives, wax emulsions and ancillary products to the forest products industry. Customers use our materials to manufacture a wide range of composite and engineered wood products including plywood, particleboard, oriented strandboard, medium density fiberboard, structural beams, furniture, mouldings and millwork.

Contact: Dale Leeper - PF Technology Manger

Phone: 936-829-8054

100 West Borden Drive

Diboll, TX 75941

dale.leeper@hexion.com

www.hexion.com

The HT Group

The HT Group provides nationwide recruiting and staffing services providing access to the nation's premier technical, professional, management, and executive talent. We work extensively in building products, forest products, and consumer goods.

Contact: Nad Elias - Managing Partner

Phone: 512-345-9300

7718 Wood Hollow Drive, Suite 200

Austin, TX 78731

nad.elias@thehtgroup.com

www.thehtgroup.com



Hunt Guillot & Associates LLC

Hunt, Guillot & Associates, LLC (HGA) is a multi-disciplined project management and engineering design firm. HGA has been serving the forest products industry since the firm's founding in 1997. HGA continues to provide expertise to the Engineered Wood Products, LVL, I-Joist, OSB, Plywood, Particleboard, Glue Lam and Lumber industries. Services provided include project management, feasibility studies, preliminary engineering, detailed design engineering and on-site technical support services.

Contact: Jason McIntosh - Business Development Manager

Phone: 318-255-6825

PO Box 580

Ruston, LA 71273

jmcintosh@hga-llc.com

www.hga-llc.com



Enriching lives through innovation

Huntsman Polyurethanes

For approximately 30 years, Huntsman has been a global leader in the production of the MDI-based resin binders for particleboard, medium-density fiberboard and oriented strand board. Our dedicated Composite Wood Products teams are committed to helping our customers reach their goals in all market conditions. There is no added formaldehyde (NAF) with Huntsman's RUBINATE® resins, and they are considered "exempt" under requirements of the California Air Resources Board (CARB) standards.

Contact: John Bebak - Commercial Manager

Phone: 281-719-4916

8600 Gosling Road

The Woodlands, TX 77381

john_f_bebak@huntsman.com

www.huntsman.com



IBC, International Bar Coding Systems & Consulting Inc.

IBC, International Bar Coding Systems & Consulting Inc. - An integrated manufacturer of the fastest individual piece WOOD PRODUCT specific printer applicator worldwide. For finished or in process units we offer Automated Package labelers (AutoLabeler) for Veneer, OSB, MDF, Plywood, Lumber and EWP. We manufacture tags and labels for any labeling system and are a single source provider for our specialized Vendor Managed Inventory of consumables. We supply fully integrated data collection systems across North America. Manufacturing or distribution operations in BC, WA and TN. We provide full design, build, onsite service, preventative maintenance, training and consulting on a system wide or mill by mill basis.

Contact: Chris Pedersen - President

Phone: 250-493-3201

1940 Barnes Street

Penticton, BC V2A 4C3 Canada

cpedersen@ibcworld.net

www.ibcworld.net

IMA America, Corp. and Schelling America Inc.

Schelling America Inc. and IMA America, Corp. are leaders in the machinery industry. Working together, both companies provide their customers and business partners the benefit of working with one source in the areas of engineering customized industrial manufacturing solutions as well as of standard machinery solutions. No matter what size your shop is we offer a wide range of products that can be integrated together to create an innovative affordable solution for any applications.

Contact: Allison Herzog - Sales Administrator

Phone: 919-544-2834

PO Box 80367

Raleigh, NC 27623

allison.herzog@ima.schelling.com

www.ima.schelling.com



IMAL - PAL GROUP

Established in the 1970's, the Group is a world leader in the manufacture and supply of equipment and systems. It's extensive production program is able to supply complete turnkey plants for the treatment and processing of fresh and recycled wood, in both the wet and dry areas, for production and processing of particleboard, MDF, OSB, Plywood, Pellets, Pallet Blocks and pressed wood-based products in general. IMAL is a leading manufacturer of glue dosing and blending systems and supplies the most innovative on-line and laboratory quality control devices that are found in virtually all the production plants around the world.

Contact: Andrew Jowett - President

Phone: 509-855-3411

PO Box 870949

Stone Mountain, GA 30087

andrew.jowett@imalpal.com

www.imalpal.com



IMEAS Inc.

IMEAS is a world leader in surface finishing solutions, with over 2,400 machines operating worldwide. IMEAS sanding and grinding machines are used to achieve precise surface finish and thickness on a wide variety of products such as plywood, LVL, composite wood panels, decorative laminates, flooring and solid surface products, etc. IMEAS specializes in extra wide machines - 10' (3.2 meter) and cross-belt sanding for wood products and non-directional mirror finish for specialty steel products.

Contact: Nathan Rutherford - President

Phone: 678-364-1900

1125 Commerce Drive, Suite 200

Peachtree City, GA 30269

imeas@imeas.net

www.imeasinc.com



InterWrap

InterWrap® is the largest supplier of coated woven wrap to the Engineered Wood Industry. It's custom-printed WeatherPro™ packaging products are designed to maintain product integrity throughout transportation, inspection and storage of sawn lumber, plywood, OSB, all types of beams, I-Joists and composite wood products. InterWrap is a vertically integrated, global manufacturer of innovative coated woven products serving a wide variety of markets. Consistent product quality is achieved by using state-of-the-art equipment along with a strong commitment to partnership with our customers, employees, and suppliers. InterWrap's global supply chain efficiency is achieved by our strategic manufacturing and distribution centers located throughout North America, Asia & Europe.

Contact: Drew Gagnier - Sr. Marketing Manager
Phone: 778-945-2888
1818 - 1177 West Hastings Street West
Vancouver, BC V6E 2K3 Canada
dgagnier@interwrap.com
www.interwrap.com



JAX, Inc.

JAX is a full-line lubricant manufacturer with expertise in compounding high-end synthetic and petroleum lubricants. With over 60 years of industry experience, JAX has earned its reputation as a leader in lubricant technology. JAX lubricants are compounded with the finest raw materials and additive chemistry in the industry. Formulation decisions are based upon performance and quality which ultimately lead to substantial, verifiable cost savings in terms of extended machine life, reduced downtime and increased production. Lubrication technology is a continually evolving science. Products that have worked in the past may not be sufficient to provide adequate lubrication in the future. In order to meet the evolving needs of our customers we are constantly analyzing the JAX product line for opportunities to improve value. JAX is a Manufacturer and Global supplier of the highest quality LUBRICANTS for machinery and process.

Contact: Ted Schultz - Director OEM & Engineered Wood
Phone: 800-782-0570 ext.307
W134 N5373 Campbell Drive
Menomonee Falls, WI 53051
tjschultz@jax.com
www.jax.com



KADANT Carmanah Design

KADANT Carmanah provides leading edge technology and equipment to optimize fibre utilization for the production of wood-based panels. KADANT Carmanah's products include SmartDISC Stranders, SmartRING Stranders, Rotary Debarkers and Conveying/Feeding equipment for the oriented strand board market. As a global leader in stranding technology, KADANT Carmanah holds an impressive 80% of this market share.

Contact: Carlos Vieira - Director, Capital Sales
Phone: 604-299-3431
Unit #8 - 15050 - 54A Avenue
Surrey, BC V3S 5X7 Canada
info.carmanah@kadant.com
www.kadantcarmanah.com

Kalesnikoff Lumber Co.

For over 75 years, Kalesnikoff Lumber has practiced sustainable forest management in the fertile Kootenay Wet-Belt region of British Columbia, Canada. Our mill produces some of the finest grain, highest quality softwood lumber products in the world. We offer over 1,000 different products from lamstock to dimensional timbers, clears and commons; we do standard runs, in addition to, specialty custom cuts. Kalesnikoff produces lamstock in Douglas Fir, Western Larch and SPF. Our lamstock program has been perfected over 25 years, and we are one of only a few mills to cut and manufacture specifically for lamstock. We are currently serving Canadian, US & Global Markets. FSC products are available.

Contact: Griffin Augustin - Sales Manager
Phone: 250-399-4211 ext. 247
PO Box 3000
Castlegar, BC V1N 3L8 Canada
griffina@kalesnikoff.com
www.kalesnikoff.com



Kimwood Corporation

World's leading producer of new equipment and OEM parts for Kimwood Sanders, Hogs and Handling Equipment, Stetson-Ross Planers and Moulders, Ferrari Resaws and Tri-State Equipment.

Contact: Mike Simmons - Vice President
Sales & Service
Phone: 800-942-4401
77684 Highway 99 South
Cottage Grove, OR 97424
msimmons@kimwood.com
www.kimwood.com



KTC Panelboard Engineering

Complete engineering services for the engineered wood products industry.

Contact: Jan Karnik - President
Phone: 604-592-3123
#218-12877 - 76th Avenue
Surrey, BC V3W 1E6 Canada
jan.karnik@ktceng.ca
www.panelboard.net



LIMAB

LIMAB supplies non-contact laser measuring systems for composite panels and engineered wood products.

Contact: Jens Svensson - President
Phone: 704-321-0760
9301-B Monroe Road
Charlotte, NC 28270
jens.svensson@limab.com
www.limab.com



Lundberg

Lundberg is a global supplier of air pollution control systems to process industries including the engineered wood products industry. State-of-the-art systems that include the Geoenergy E-Tube Wet ESP, GeoTherm and GeoCat Oxidizers and GeoWet Scrubbers. Geoenergy systems have provided environmental compliance to the engineered wood products industry on wood dryers, press vents and boilers since 1984.

Contact: Jaymie Deemer - Market Development Manager
Phone: 425-283-5070
13201 Bel-Red Road
Bellevue, WA 98005
jaymie.deemer@lundberg-us.com
www.lundberg-us.com



Matthews Marking Systems

Matthews Marking Systems, established in 1850, is a leading supplier of marking and coding equipment for the engineered wood and building products industries. Matthews supplies ink jet printing solutions for applications including grade marking, nail patterns, traceability and large format logo printing. We also offer a variety of inks, specific to the wood industry, including water based, fast dry and VOC free.

Contact: Donna Meade - Strategic Initiatives Manager

Phone: 800-775-7775

6515 Penn Avenue
Pittsburgh, PA 15206
info@matw.com

www.matthewsmarking.com



McLube Division, McGee Industries, Inc.

McGee Industries' McLube Division has manufactured high-technology mold releases agents and industrial lubricants since 1954, including water/solvent-based release agents for the rubber, plastics, composite, wood fiber composite/panel pressing, concrete and stone veneer and polyurethane markets, antitack coatings for hundreds of industrial applications and a full line of Moly lubricants (Moly Lube), PTFE lubricants oils, greases and dry film aerosol and bulk containers lubricants. Lines include antistick coatings, rubber lubricants, antiseize compounds, cleaners and protective coatings. Through six decades of innovation, we've earned an international reputation for performance and worldwide industry recognition as expert problem solvers. Specialists in assessing complex processes, unusual conditions and developing working solutions.

Contacts: Evan Silo - Technical Representative
Glenn Dublisky - Sr. Technical Representative
Phone: 1-800-2 McLube (800-262-5823)

PO Box 2425

Aston, PA 19014-0425

info@mlcube.com

www.mclube.com

M-E-C Company

Founded in 1961, M-E-C's principal business is the design, manufacture, installation and service of industrial dryer systems, combustion systems, storage bins and pneumatic and mechanical conveying systems for the many different industries served, including the engineered wood products industries - particleboard, oriented strandboard, medium density fiberboard and pellet manufacturers. M-E-C's in-house engineers and technical professionals have installed and serviced more than 580 dryer systems worldwide. Our expertise includes single-pass, triple-pass and flash tube dryer systems.

Contact: Stephen Rice - COO

Phone: 620-325-2673

4401 Belle Oaks Drive, Suite 210

North Charleston, SC 29405

Srice@m-e-c.com

www.m-e-c.com



Meinan Machinery Works, Inc.

Established in 1953 in Japan, Meinan develops and manufactures innovative machinery for veneer and plywood production, and holds hundreds of worldwide patents. Meinan's revolutionary "spindle-less" lathe drives logs on their circumference with spiked discs instead of spindles, resulting in better veneer quality, higher yield, and extremely close thickness tolerance. The lathe is part of an automatic veneer peeling line featuring automatic stacking and green composing of random strips into full veneer sheets to save labor costs and increase dryer utilization. Meinan also manufactures scarf compositors, grading systems, automatic layup lines, and sanders. Represented in USA by Merritt Machinery, LLC in Lockport, NY.

Contact: Etsuro Tame - Sales Director

U.S. Representative: Merritt Machinery, LLC

Contact: Anna McCann, President

Phone: 716-434-5558

10 Simonds Street

Lockport, NY 14094

amccann@merrittmachinery.com

www.merrittmachinery.com



Mereen-Johnson LLC

Mereen-Johnson has been setting the standard for the woodworking and engineered materials industries since 1905 and offers a complete line of Gang Rip Saws, Profiling Machines, Cross Cutting Equipment, Sizing Systems, I-Joist equipment, and related material handling designed for reliable, high speed production with minimal maintenance. Mereen-Johnson also offers a complete line of solid wood processing equipment such as fixed arbor and shifting blade straight line multiple Rip Saws, Rough Mill Optimizing and Material Handling, Moulders, Single and Double End Tenoners, CNC controlled Dovetailers, and Box Clamps.

Contact: Dave Olson - Corporate Sales Manager

Phone: 612-529-7791

575 Ninth Street SE, Suite 200

Minneapolis, MN 55414

info@mereen-johnson.com

www.mereen-johnson.com



Metriguard, Inc.

High-speed Metriguard veneer graders operate in LVL and structural plywood mills worldwide. Laboratories depend on Metriguard Panel Bending & Performance Testers to evaluate structural panels. The new Model 840 tests OSB used as I-joist web stock. For MSR/MEL Lumber producers, Metriguard offers the Model 7200 for longitudinal installations and the Sonic Lumber Grader for transverse installation - both are compatible with scanners. The Model 312 Bending Proof Tester is a standard in MSR QC labs. With over 40 years in the engineered wood products business, Metriguard has the knowledge and equipment for grading and testing structural veneer, panels and Lumber.

Contact: Daniel Uskoski - Vice-President of Sales

Phone: 509-332-7526

PO Box 399

Pullman, WA 99163

duskoski@metriguard.com

www.metriguard.com



Michelman

Michelman is a leading global developer of release agents for engineered wood panels and water repellent technologies for wood products. We also manufacture and market water-based barrier and functional coatings for flexible film packaging, paperboard and corrugated cartons; and water-based surface modifiers, additives and polymers for numerous industries including wood and floor care, industrial coatings, inks, fibers, composites and construction products. Michelman serves it's multinational and regional customers with production facilities in the U.S., Europe and Singapore, and a worldwide network of highly trained field technical support personnel.

Contact: Clancy Redmond - Business Development Manager, Industrial Manufacturing

Phone: 513-218-2938

9080 Shell Road

Cincinnati, OH 45236

clancyredmond@michelman.com

www.michelman.com



Mill Machinery LLC

Mill Machinery is a provider of new and used machinery to the veneer and panel industries. Mill Machinery's inventory of used production machinery includes veneer lathes, dryers, plywood presses, sawlines, grade bins, panel feeders, sanders, hogs and related support equipment. Mill Machinery's Magnum line of new machinery includes press loading systems, press platens, hydraulic units, lay-up line flying saws and side shift accumulators, panel feeders, stackers and conveyors.

Contact: Tim Peterson - President

Phone: 503-720-0540

31670 South Highway 213

Molalla, OR 97038

tim@millmachinery.net

www.millmachinery.net



Smart Solutions for Clean Air

NESTEC, Inc.

NESTEC, Inc. is a turnkey provider of thermal oxidation systems for the wood products industry including regenerative and regenerative catalytic technologies, process duct design, system upgrades, energy audits, inspections and parts. Our staff of engineers has over 30 years of experience in the field of thermal oxidation and has participated in solving air emissions problems for the wood products industry since the early 1990's. Whether you need a new air pollution control system or require upgrades and improvements to an existing system, NESTEC, Inc. is your best resource to ensure a successful project.

Contact: James L. Nester - President

Phone: 610-323-7670

PO Box 568

Douglassville, PA 19518

jnester@nestecinc.com

www.nestecinc.com

Nicholson Manufacturing Ltd.

Industry Leader in ring debarking technology since 1948.

Contacts: James Bowden, P.Eng. - NCVS Manager

Ron Hait - NA Capital Sales Manager

Phone: 250-656-3131

PO Box 2128

Sidney, BC V8L 3S6 Canada

forestsales@nmbc.com

www.debarking.com



Nondestructive Inspection Service

Nondestructive Inspection Service (N.I.S.) was incorporated in 1960. Since that time we have taken preventative maintenance to higher levels of predictive maintenance while saving our customers costly unpredictable down time, on all types of process equipment along the entire production line. We are the established leader in applying our knowledge of NDT and perfecting inspection procedures to exceed industry standards. In the case of wood processing and construction board plants we have developed, tested and implemented significant innovations on the standard inspection techniques to shrink costly inspection downtime and overcome the issues of inspecting difficult-to-reach parts of the equipment.

Contact: Ed Hauldren - VP of Operations

Phone: 304-562-6835

PO Box 220

Hurricane, WV 25526

ed@nisfordnt.com

OCI Melamine Americas

OCI Melamine (formerly DSM Melamine) is a melamine crystal supplier for use in resins with formaldehyde that are used for (among others) OSB, plywood, and other panels.

Contact: Lee Miller - Application Support

Rhonda Pizzolato - Customer Service

Phone: 800-615-8242

c/o Advanced Louisiana Logistics - ALL

501 Louisiana Avenue, Suite 201

Baton Rouge, LA 70802

info.melamine@ocinitrogen.com

rhonda.pizzolato@ocimelamine-all.com

www.ocimelamine.com

Pallmann Industries, Inc.

For more than 100 years, Pallmann has designed and built size reduction machinery. Specializing in high-capacity, high-performance stranders, flakers, refiners and mill utilized by the engineered panel board industries.

Contact: Rolf Gren - General Manager

Phone: 973-471-1450

820 Bloomfield Avenue

Clifton, NJ 07012

info@pallmannindustries.com

www.pallmann.eu

Panel Machinery & Controls, LLC

At Panel Machinery & Controls, our focus is to provide the most up to date and trouble free Equipment design, Servo Motion Control and Automation systems for the Engineered Wood Products Industry. Our engineering staff has years of experience in quality-designed and field proven equipment and controls for the Plywood Industry. We have service technicians experienced with hydraulic & electrical motion control, capable of on-site trouble shooting and programming of all brands of PLC's and motion controllers. We are a United Laboratories 508A certified panel shop experienced in custom panel design and fabrication.

Contact: Roger Daniels - President

Phone: 503-744-0830

5422 SE International Way

Milwaukie, OR 97222

roger@panelmachinerycontrols.com

www.panelmachinerycontrols.com



Panel World Magazine / Hatton-Brown Publishers, Inc.

Panel World publishes six issues per year for a domestic and international readership with emphasis on mill project startup articles. Product coverage includes structural and non-structural wood products. Panel World also hosts the biennial Panel & Engineered Lumber International Conference & Expo (PELICE).

Contact: Rich Donnell - Editor

Phone: 334-834-1170

PO Box 2268

Montgomery, AL 36102

rich@hattonbrown.com

www.panelworldmag.com



Paneltech

Paneltech is a young and growing, forward-thinking company comprised of people who have common values and share a common goal...providing environmentally responsible leadership in manufacturing the highest quality green products for industry. Our panel overlays are designed for high performance end uses and superior processability. They are designed to increase the value of the wood products they cover by increasing their durability, enhancing their appearance, and creating uniform surfaces to enhance the products end use.

Contact: Ron Iff - General Manager

Phone: 360-538-1480

2999 John Stevens Way

Hoquiam, WA 98550

roniff@techline.com

www.paneltechintl.com

Paslode

Leading designer and manufacturer of cordless and pneumatic nailers, staplers and specially engineered fasteners designed to deliver superior wood fastening solutions to the residential construction industry; applications include framing, sheathing, roofing, siding and finishing applications.

Contact: Steve Golich - Marketing Manager

Phone: 847-541-3512

888 Forest Edge Drive

Vernon Hills, IL 60061

steve.golich@paslode.com

www.paslode.com



Permapost

Permapost provides custom pressure treating solutions for engineered wood products used throughout the U.S.A. and Asia.

Contact: David Bond - Chief Operations Officer

Phone: 503-648-4156

PO Box 100

Hillsboro, OR 97123

david@permapost.com

www.permapost.com



PFS - HAWE Hydraulik

HAWE Hydraulik is a well-respected, German based company that recently acquired Pacific Fluid Systems, LLC. HAWE's primary business is providing high quality hydraulic components through modular design and energy efficient solutions. With the acquisition of PFS, HAWE has increased its offerings to provide complete linear hydraulic and electro-mechanical motion control systems. This partnership offers a full range of products from custom hydraulic manifolds to complete hydraulic press conversions.

Contact: Dan Wilson - Industrial Group Manager

Phone: 503-222-3295

12990 SE Highway 212

Clackamas, OR 97015

d.wilson@hawehydraulics.com

www.hawe.com



Process Combustion Corporation

Incorporated in 1969 and based in Pittsburgh, Pennsylvania, USA, Process Combustion Corporation (PCC) designs, supplies and services combustion, heat transfer and pollution control systems. PCC provides solutions to the industry's air pollution control needs via Thermal Oxidation and Bio-Oxidation System Technologies. Our 45+ year commitment to industry ensures customer satisfaction. • Our principal industries and applications include: Chemical, Petrochemical and Petroleum; Automotive; Sulfur Recovery; Resins; Plastics; Chlorinated Hydrocarbons; Rubber; Carbon; Pharmaceutical; Pulp & Paper; Building Products; Fertilizers and Pesticides. • PCC is a global company with additional office locations in Beijing, China and Aylesbury, England.

Contact: Michael Foggia - Business Development/Marketing Manager

Phone: 412-655-0955 Ext. 3176

5460 Horning Road

Pittsburgh, PA 15236

mfoggia@pcc-sterling.com

www.pcc-sterling.com



Raute

Raute is Your Partner in Performance. Global expertise in wood products technology and innovation driven, Raute continually leads the market in developing cutting-edge advancements in the production of plywood, LVL, and engineered wood solutions. Raute provides profitable solutions for large mill-wide projects as well as individual process lines, line modernizations, and equipment upgrades
 Contact: Martin Murphy - Senior Vice President
 Phone: 604-524-6611 Ext. 379
 1633 Cliveden Avenue
 Delta, BC V3M 6V5 Canada
 martin.murphy@raute.com
 www.raute.com



REA JET

REA JET offers technology with excellent flexibility & variable implementation for the day-to-day needs of a demanding production environment. REA JET's product range includes large character ink jet printers (DOD), high resolution ink jet printers (HP print technology and piezo), small character ink jet printers (CIJ), laser systems, spray mark systems and labeling systems.
 Contact: Nicole Richie
 Phone: 404-310-9055
 7307 Young Drive
 Walton Hills, OH 44114
 nrchie@reajetus.com
 www.reajetus.com



Samuel Strapping Systems

With over 50-years serving the Lumber and forest products industry, Samuel Strapping Systems, offers their customers in the Engineered Wood industry a single source supply for all of their strapping and packaging requirements. Samuel's product line includes steel and plastic strapping, pneumatic and manual hand tools, seals, edge protection, stretch-wrap, product identification equipment and fully automated strapping systems. Our industry leading VK-30 strapping head has been used in both new and retrofit applications to convert our customers from steel to polyester strapping. Samuel is a leader in strapping for engineered wood products, and had the first AAR approved polyester strapping.
 Contact: Dave Gagnon - Forest Industry Manager
 Phone: 630-783-8900
 204 Meadow Ridge Court
 Canton, GA 30115-6623
 dgagnon@samuelstrapping.com
 www.samuelstrapping.com

SASCO Chemical Group Inc.

Researcher and manufacturer of release agents for the engineered wood industry.
 Contact: Ed Juline - Director of Sales
 Phone: 229-435-8394
 827 Pine Avenue
 Albany, GA 31701
 ejuline@sascochemical.com
 www.sascochemical.com

Siempelkamp L.P.

The Siempelkamp Group of Companies are world leaders in the supply, installation and startup of equipment and complete production plants for the manufacture of wood based panel products, energy systems, dryer systems, panel handling and finishing systems.

Contact: Dirk Koltze - Executive Vice President
 Phone: 704-522-0234
 3506 High Hamptons Drive
 Charlotte, NC 28210
 d.koltze@siempelkamp-usa.com
 www.siempelkamp-usa.com



Signode Packaging Systems

Signode is a global manufacturer of steel and plastic strapping and the application equipment and accessory products for each. Our protective packaging systems for the Lumber and Panel Industries are centered around the material that ultimately secures loads for handling, shipping and storage — plastic or steel strapping. We offer a full range of application tools, equipment and accessories to complete your strapping system. Our Forest Products Industry sales, equipment service, customer service and engineering departments can help you design the optimum protective packaging system for your application.

Contact: Claude Gregory - Forest Products Industry Manager
 Phone: 877-744-3673
 2107 Chester Ridge Drive, Suite 103
 High Point, NC 27262
 cgregory@signode.com
 www.signode.com



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Contacts: Jordan Newton
 Brad Carr - President
 Phone: 336-712-2437
 6220 Hacker Bend Court, Suite F
 Winston-Salem, NC 27103
 bcarr@iesclean.com
 www.iesclean.com



Spar-Tek Industries

Spar-Tek Industries manufactures high quality machinery with the latest cutting edge technology for many industries including Plywood, LVL, Rubber and others. Today's high volume Plywood production Lay-Up Lines place an emphasis on efficiency. Spar-Tek's lay-up lines, Hot and Cold Presses, Loading and Unloading equipment, Glue Application systems and other equipment are designed to meet these demands. Helping customers meet and exceed their production and operating goals is a driving force at Spar-Tek. We are here to help you meet your goals and to do so requires innovative technology and machines designed to work at the highest operating speeds.

Contact: Rodney Bell - General Manager
 Phone: 503-283-4749
 2221 North Argyle
 Portland, OR 97217
 rjb@spartek.com
 www.spar-tek.com



Spraying Systems Co.

Spraying Systems Co. is the world's leading manufacturer of spray technology equipment. Our offering includes a family of PanelSpray® systems for applying wax, resin, moisture and chemicals to chips, mats, cauls or belts. These systems ensure the precise volume of fluid is applied even when operating conditions like chip tonnage or line speed changes. We also offer the industry's largest selection of spray products for use throughout your mill in other operations such as humidifying, marking, cleaning and coating. We serve our customers around the world from our 12 manufacturing facilities and 90 sales offices.

Contact: Brian Valley - Director - Industrial Solutions
 Phone: 630-517-1283
 899 Carol Court
 Carol Stream, IL 60188
 brian.valley@spray.com
 www.spray.com



Steinemann Technology USA, Inc.

Steinemann Technology offers comprehensive sanding solutions with machines, sanding paper, 24 hour technical expertise and support and a large inventory of spare parts in our Charlotte, NC facility.

Contact: Dan Murphy - President
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Stratachem Solutions Group LP

Stratachem Solutions Group LP provides chemical solutions specifically for the wood products industry. With over 90 years of technical wood products experience, and a world class research and development group, we are prepared to take on tough process issues. We specialize in release agents for continuous and multi-opening presses, as well as environmental equipment chemical solutions to keep WESPs and RTOs running up to design capacities. We are dedicated to customer satisfaction and understand the importance maintaining the highest levels of process efficiency while decreasing the cost of manufacturing.

Contact: Mike Larke - General Manager
Phone: 866-489-9377
533 Church Street, Suite 360
Nashville, TN 37219
mlarke@stratachemsolutions.com
www.stratachemsolutions.com



Sweed Machinery, Inc.

Sweed is known in the industry as the superior choice for providing full veneer dryer infeed and outfeed systems, veneer saws, turners, and hoists. Sweed also specializes in all replacement parts for Raimann and Skoog patchers, and manufacturers, sharpens and repairs patcher dies. Sweed provides the latest technology and exceptional craftsmanship; helping processors achieve higher production goals with less downtime. Based in Oregon, USA, Sweed offers unmatched quality, customer service, engineering and technical support.

Contact: Kevin Gordon - Sales Director
Phone: 866-800-7411
PO Box 228
Gold Hill, OR 97525
sweed@sweed.com
www.sweed.com/panel/



Tebulo NA Ltd.

Tebulo provides the newest and most advanced technology for marking, labeling, and barcoding in the forestry industry. Tebulo uses robotics for stenciling sidewall identification as well as end striping and coding. One system for both applications – with availability to use multiple colors. Robots present high reliability and minimal maintenance. Our systems come with a guarantee to perform at over 99% reliability. Let your product stand out from the competition.

Contact: Jon Vanspronsen - Sales
Phone: 905-639-7370
70 Lancing Drive
Hamilton, ON L8W 3A1 Canada
jvanspronsen@tebulo-na.com
www.tebulo-na.com



TIP – The Industry Pivot Ltd.

TIP-The Industry Pivot offers wax suspension systems to engineered wood manufacturers. Wax suspension systems prepare slack wax for better wax distribution, delivering significant cost savings and better board quality. Consumption of both slack wax and emulsified wax are minimized. TIP's suspension systems are manufactured by Coil Manufacturing Ltd., based in BC Canada.

Contact: Amnon Shoshani - CEO
Phone: 972-4-6377757
7 Chalamish Street
Caesarea, Israel 3088900
amnon@the-industry-pivot.com
USA Contact: Peter Schneider - Sales Director
Phone: 888-339-4359
411 Waverly Oaks Road #331
Waltham, MA 02452
EMAIL: peter@the-industry-pivot.com
www.the-industry-pivot.com



TSI

TSI designs and manufactures complete panel finishing lines for OSB, particleboard and MDF. This includes saws with such features as automatic position change and adjustable blade exposure. High-speed sorting and stacking of panels is easily achievable with TSI's "primary stacker" solution. TSI also supplies Heat Energy and Drying and Pollution Control Systems for OSB and Particleboard based on Single Pass Recycle technology. The Dryers are proven to increase productivity and reduce emissions compared to other systems. Heat Energy includes Step Grate Furnaces in conjunction with Sigma Thermal and Pollution Control solutions include Wet ESP and RTO systems developed by TSI to work at optimum efficiency with TSI Dryers.

Contact: Andrew Johnson - Vice President
Phone: 425-771-1190 Ext. 128
20818 – 4th Avenue West, Suite 201
Lynnwood, WA 98036-7709
ajohnson@tsi-inc.net
www.tsi-inc.net

University of Tennessee, Center for Renewable Carbon

The Center for Renewable Carbon is a state-of-art research facility at The University of Tennessee. The CRC has nine faculty conducting research on forest products, sustainable biomaterials and bioenergy, <http://renewablecarbon.tennessee.edu/>. The laboratories include wood composite laboratory steam-injected presses, destructive testing lab, conditioning chambers, dry kiln laboratory and new laboratory capabilities for sustainable biomaterials preprocessing, pretreatment research, thermochemical and biochemical conversion, and product analysis. Also, unique analytical capabilities for nanotechnology sustainable biomaterials are available. The CRC has M.S. and Ph.D. concentrations in Sustainable Biomaterials and Wood Science Technology. The CRC provides world-class industry training programs in SPC/Lean, DOE, and data mining.

Contact: Timothy Young, Ph.D. - Professor
Phone: 865-946-1119
2506 Jacob Drive
Knoxville, TN 37996-4570
tmyoung1@utk.edu
www.spc4lean.com

US Borax Inc.

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Contact: Mark Manning - Global Manager, Preservation
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mark.manning@riotinto.com
www.borax.com



USNR

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Contact: Tim Fisher - Veneer/Panel Business Development
Phone: 360-225-8267
PO Box 310
Woodland, WA 98674
tim.fisher@usnr.com
www.usnr.com

Valspar Corporation

With a wide range of products and technologies, Valspar is the leader in the Wood Coatings Industry for the Building Products market.

Contact: Craig Lyerly - Marketing Manager – Building Products
Phone: 336-802-4746
1717 English Road
High Point, NC 27262
clyerly@valspar.com
www.valspar.com



Venango Machine Company, Inc.

Venango Machine and our sister company, Custom Engineering, are complete platen services provider to the forest products industry. We provide new platens for every make of press in the industry for manufacturing of all board products. Our product line includes small specialty platens for lab applications, intermediate sized platens for particle board, OSB, and LVL in both multiple platen and continuous processes. We also provides complete platen-refurbishing programs that include flow and pressure testing, weld repair and re-machining to original specifications. Our technicians also provide assistance in platen change outs and in-press weld repair. Please contact us for all your platen requirements.

Contact: Nyla Vogel - Sales Manager
Phone: 814-739-2211
PO Box 239
Wattsburg, PA 16442
nvogel@venangomachine.com
www.venangomachine.com

Veneer Services, LLC

We build profitable machine solutions based upon better engineering. We take pride in the fact that our machines run reliably with minimum operating costs - yielding you the greatest efficiency and profits. Every prototype machine ever built is running today. We were the first and still the only company to build a voice activated veneer bundle grading line. We developed the most accurate debarker/planer system ever built and then we built a fully automated butt flare reducer to go with it. Our veneer chipper is proven to use less energy and produce better chips. Our veneer machine rebuilds have allowed our customers to improve profits while saving them as much as 50% over the price of a new machine.
Contact: Dane Floyd - President and CEO
Phone: 317-346-0711
50 Washington Street, 3B
Columbus, IN 47201
dane@veneerservices.com
www.veneerservices.com



Ventek, Inc.

Ventek utilizes cutting-edge machine vision technology to design and manufacture automated process controls for the veneer and plywood industry. We provide vision-based scanning systems for both green and dry veneer, in-line moisture detection, and robotic systems for automation of veneer plug patching and panel repairs, along with complete green and dry veneer stacking lines. Ventek, founded in 1991, has fast become the industry standard in vision technology and one of the leading suppliers of such equipment in North America. We are proud to have been honored as the APA/EWTA's Supplier of the Year for 6 of the past 8 years and Innovator of the Year in 2013.

Contact: Rodger Van Voorhis - President
Phone: 541-344-5578
4030 West 1st Avenue, Suite 100
Eugene, OR 97402
rodger@ventek-inc.com
www.ventek-inc.com

Walker Emulsions

Walker Emulsions is a supplier of high quality, highly effective emulsions for the wood composite industry. We have a selection of emulsions that will fit the needs of high to low temperature pressing and we can make products specifically to match your process.

Contact: Charles Stout - East Coast
Phone: 905-336-1216 Ext. 2251
cstout@walkerind.com
Contact: Gregg Hale - West Coast
Phone: 541-953-5783
ghale@walkerind.com
4365 Corporate Drive
Burlington, ON L7L 5P7 Canada
www.walkerind.com

Wanhua Chemical (America) Co., Ltd.

Wanhua Chemical is the fastest growing and largest MDI producer globally with best-in-class technology and world-leading state-of-the-art manufacturing sites producing WANNATE® PMDI binder solutions to customers and partners in the Composite Wood Panel industry. Wanhua Chemical is renowned for its high quality WANNATE products and dependable supply chain that Composite Wood Panel producers depend on. Wanhua Chemical has worldwide operations with a local commitment to customers, including ongoing investments in technical resources and infrastructure in North America, further strengthening Wanhua's technical service and supply commitments to the Composite Wood Panel industry.
Contact: Jacob Sturgeon - General Manager
Phone: 610-796-1606
Rose Tree Corp Center
1400 North Providence Road, Suite 309
Media, PA 19063
jacob@yantaiaamericas.com



Westmill Industries USA Corp.

WESTMILL® has become an industry leader in the manufacture of NEW Veneer Dryers with a very strong emphasis on competitive value. WESTMILL® provides custom and standard machinery together with engineering services for the plywood and veneer industry. WESTMILL® also stocks replacement parts for every make and model of veneer dryer with dedicated warehouses in Oregon, Georgia and Vancouver, B.C.

Contact: Mike Crondahl - President, Owner
Phone: 604-607-7010
3063 - 275 A Street
Aldergrove, BC V4W 3L4 Canada
crondahl@westmill.com
www.westmill.com



Willamette Valley Company

Willamette Valley Company manufactures epoxies, putties and urethanes for upgrading all wood substrates, and also makes a wide range of water based coatings, primers and sealers. Willamette also makes many fillers and extenders for wood adhesives and plywood glues. Pretec, the company's equipment solutions division, specializes in the design and manufacture of advanced fluid systems and the integration of robotic application systems.

Contact: Tony Vuksich - Vice President
Phone: 541-484-9621
1075 Arrowsmith
Eugene, OR 97402
tony.vuksich@wilvaco.com
www.wilvaco.com



WPS Industries / Eagle Project Services

WPS Industries is a full service fabrication and installation provider for Wood Products, Biomass, Oil & Gas, Environmental, Power and various other industries. Eagle Project Services, LLC provides detailed engineering and project management services to the same noted industries.

Contact: Doug Steed - VP Business Development
Phone: 318-812-2800
228 Industrial Street
West Monroe, LA 71292
dsteed@wpsindustries.com
www.wpsindustries.com

Zelam Ltd.

Zelam Ltd. is an innovative research and development based specialty chemical company supplying protectants into the Engineered Wood Products Industry. Zelam develops preservative systems to control decay, mold and insects in wood products. One key area of expertise is in the protection of engineered wood via glueline application.

Contact: André Siraa - Technical/Research Manager
Phone: +64 6 755 9234
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Contact Information:
Timothy M. Young Ph. D.
The University of Tennessee
2306 Jacob Drive
Knoxville, TN 37996
865.948.1119
tmyoung1@utk.edu

CELEBRATING 70 YEARS

EWTA's Info Fair Reaches Milestone

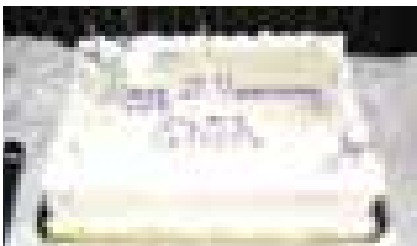


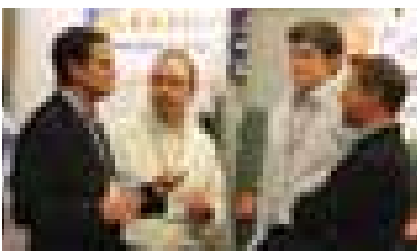
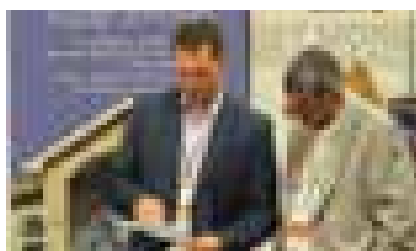
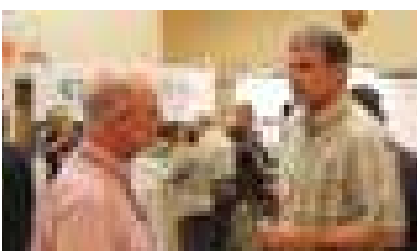
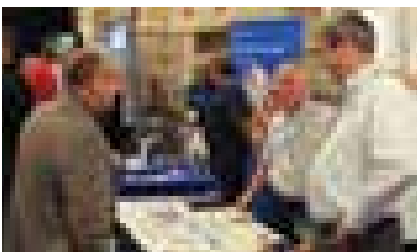
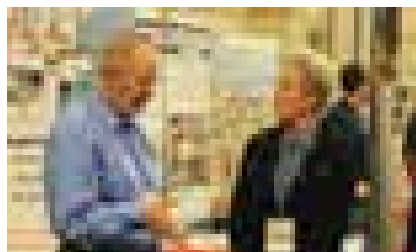
It's the event EWTA members anticipate all year. The 2015 EWTA Info Fair supplier exhibition brings together engineered wood product suppliers from across the globe to share information about their products and services, network with other suppliers, and learn more about the industry. Info Fair is held concurrently with APA's

Annual Meeting, which offers opportunities for members of the two related associations to attend workshops, roundtable discussions and training sessions as well as discuss business opportunities with each other.

EWTA's most recent Info Fair event in Coeur d'Alene, Idaho, Oct. 17-19, brought together 75 exhibitors show-

casing their offerings throughout the extended weekend. There were plenty of reasons to step out of the booth, including numerous receptions, luncheons, and sporting competitions (see sidebar, "Fun and Games"). It was also EWTA's 70th birthday, giving members and their spouses even more reason to celebrate.






New Electronic Logos Offered to EWTA Members

EWTA recently created five colorful membership logos for use by its member companies. Each logo celebrates a membership milestone: Proud Member (for EWTA's newest members), 10 Year Member, 20 Year Member, 30 Year Member, and 40+ Year Member. Electronic logos are released to members upon receipt of 2016 dues. The Member Logo Program allows members to publicize their affiliation with EWTA via electronic or hard copy correspondence and publications.



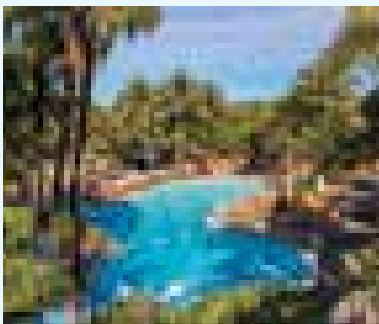
Fun and Games

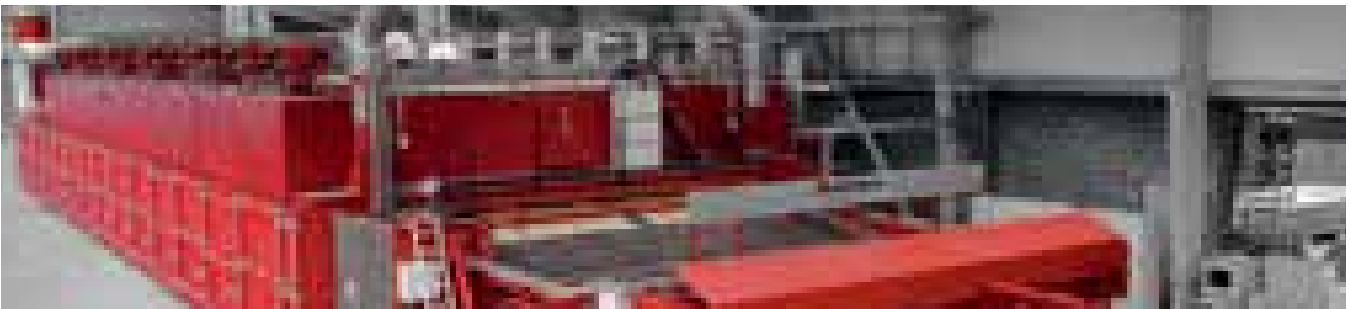
Each year, Info Fair and Annual Meeting attendees are invited to participate in the golf, tennis and cripple coot shoot tournaments. The Sunday morning events, which precede a busy Monday of meetings and workshops, bring together EWTA and APA members for networking, socializing and some friendly competition. Inclement weather in Coeur d'Alene cancelled this past year's Ole Sorenson Memorial Tennis Tournament, but competitors are expected to be back on the court in Bonita Springs, Fla., for the 2016 event this November. 



Next Up: Info Fair 2016

EWTA's next Info Fair will be Nov. 5-7, 2016, at the Hyatt Regency Coconut Point Resort and Spa in Bonita Springs, Fla. For information, visit engineeredwood.org and click on Events & Programs, or email coordinator Melinda Lilley at mlilley@engineeredwood.org.





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Get Connected!

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- Special podium recognition at the APA/EWTA General Session



Platinum

Our top connection level

Includes:

- Special recognition in the *Engineered Wood Journal* (1/3 page per platinum sponsor)
- Individual banner at the APA Annual Meeting/EWTA Info Fair
- Special recognition on the EWTA website
- One APA Annual Meeting registration
- One entry into the APA Annual Meeting golf tournament (with priority placement) or other recreational event
- Six issues top EWTA Newsletter sponsorship
- Inclusion in custom press release
- Premium seating at the Chairman's Dinner at the Annual Meeting
- Extra recognition in the *Journal* member directory.

Gold

A premium connection level

Includes:

- Company logo included on gold banner at the APA Annual Meeting/EWTA Info Fair
- Recognition in the *Engineered Wood Journal* on the gold sponsor page
- One entry into the Annual Meeting golf tournament or other recreational event
- Three issues EWTA Newsletter sponsorship

Silver

Get connected

Includes:

- One issue of EWTA Newsletter sponsorship
- Company name included on silver banner at the APA Annual Meeting/EWTA Info Fair
- A silver listing in the *Engineered Wood Journal*

Other Sponsorship Opportunities

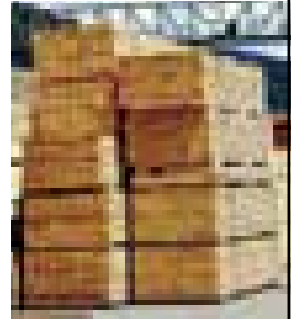
- Supplier Awards
- Cripple Coot Shoot
- Golf Tournament





Samuel Strapping Systems is one of the world's leading providers of industrial packaging solutions. We offer a range of state-of-the-art unitizing and load protection solutions to suit any application in the forest products industry.

Our depth of experience in overcoming the challenges of transporting and packaging Lumber and Panel products help to ensure that your final package maintains its integrity and ease of handling – both on route and in the yard. Our strapping, unitizing and load protection solutions are specifically designed to keep you competitive.



Samuel Strapping Systems
Packaging and Unitizing Solutions

U.S.A. - 1-800-323-4424 Canada - 1-800-607-8727

www.samuelstrapping.com
www.youtube.com/samuelstrapping



Join us at Info Fair 2016!



The Engineered Wood Technology Association's Info Fair supplier exhibition – held in conjunction with APA's annual meeting – provides face-to-face connection with leading engineered wood products industry decision-makers.

REGISTRATION OPENS April 1st
Early Bird Registration Ends August 29
Info Fair 2016: November 5-7
Hyatt Regency Coconut Point Resort and Spa
in Bonita Springs, Florida

For more information:
Melinda Lilley: mlilley@engineeredwood.org



www.engineeredwood.org • mlilley@engineeredwood.org • 253-620-7237

SUPPLIER STANDOUTS

EWTA Supplier and Innovation Award Winners Honored

by Sheila Cain

EWTA recognized five member companies as outstanding suppliers at the Chairman's Dinner during APA's Annual Meeting last October in Coeur d'Alene, Idaho. The Supplier of the Year Awards are bestowed annually and are based on the quality, service and delivery of EWTA member

products and services to APA member companies. Awards are presented for each of EWTA's membership categories: Equipment and Tooling, Materials and Supplies, and Consulting and Services. The award winners are selected by votes of APA member representatives.

Winners of the 2015 Supplier of the Year Awards are:

EQUIPMENT/TOOLING CATEGORY

KADANT Carmanah Design

KADANT Carmanah provides leading edge technology and equipment to optimize fibre utilization for the production of wood-based panels. KADANT Carmanah's products include SmartDISC Stranders, SmartRING Stranders, Rotary Debarkers and Conveying/Feeding equipment for the oriented strand board market. As a global leader in stranding technology, KADANT Carmanah holds 80 percent of this market share.

MATERIALS/SUPPLIES CATEGORY

Willamette Valley Company

Willamette Valley Company manufactures epoxies, putties and urethanes for upgrading all wood substrates, and also makes a wide range of water based coatings, primers and sealers. Willamette also makes many fillers and extenders for wood adhesives and plywood glues. Pretec, the company's equipment solutions division, specializes in the design and manufacture of advanced fluid systems and the integration of robotic application systems.

CONSULTING/SERVICES CATEGORY

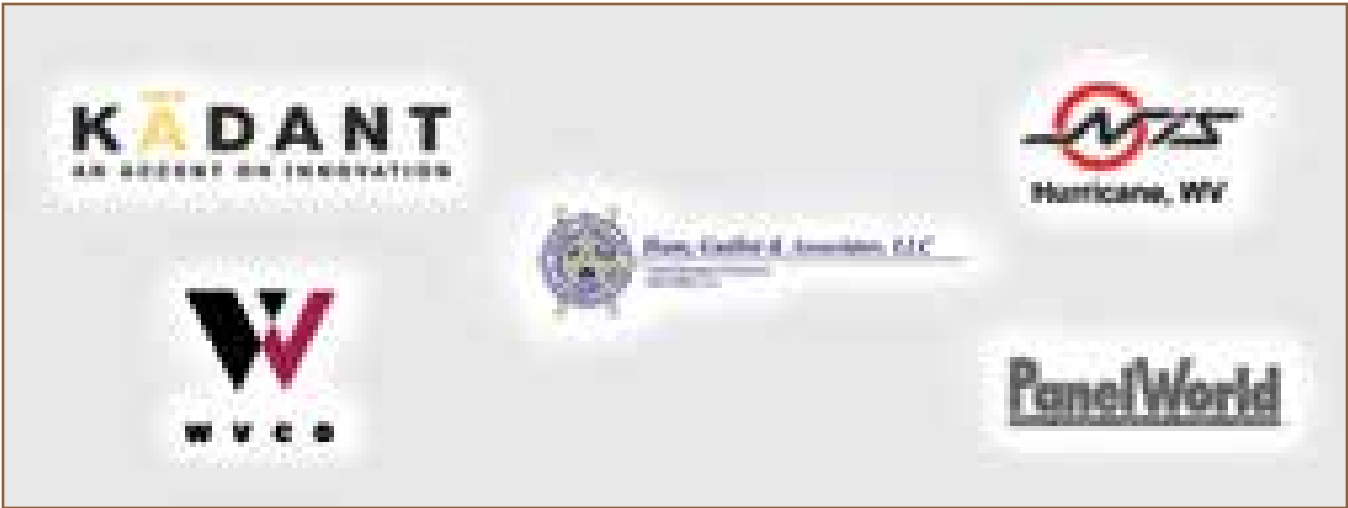
(THREE-WAY TIE)

Hunt, Guillot & Associates, LLC

Hunt, Guillot & Associates, LLC (HGA) is a multi-disciplined project management and engineering design firm. HGA has been serving the forest products industry since the firm's founding in 1997. HGA continues to provide expertise to the engineered wood products, LVL, I-Joist, OSB, plywood, particleboard, glulam and lumber industries. Services provided include project management, feasibility studies, preliminary engineering, detailed design engineering and on-site technical support services.




EWTA Managing Director Terry Kerwood (far left) congratulates the winners of the 2015 EWTA Supplier of the Year Awards at the Chairman's Dinner during APA's Annual Meeting last October. From left: Kerwood; Rich Donnell, Panel World Magazine/Hatton Brown Publishers (Consulting/Services Category); John Harrison, Willamette Valley Company (Materials/Suppliers Category); Michael Colwell, KADANT Carmanah Design (Equipment/Tooling Category); and Don Grimm, 2014/15 APA Board of Trustees vice chairman.



Nondestructive Inspection Service

Nondestructive Inspection Service (NIS) was incorporated in 1960. Since that time the company has taken preventative maintenance to higher levels of predictive maintenance while saving customers costly unpredictable down time on all types of process equipment along the entire production line. In the case of wood processing and construction board plants, NIS has developed, tested and implemented significant innovations on the standard inspection techniques to shrink costly inspection downtime and overcome the issues of inspecting difficult-to-reach parts of the equipment.

Panel World Magazine/Hatton Brown Publishers

Panel World publishes six issues per year for a domestic and international readership with emphasis on mill project startup articles. Product coverage includes structural and non-structural wood products. Panel World also hosts the biennial Panel & Engineered Lumber International Conference & Expo (PELICE). 



Representatives from Hunt, Guillot & Associates, LLC pose with their Supplier of the Year Award in the Consulting/Services Category (three-way tie). Back row, from left: Shay Nichols, Satish Bharadvaj, Allen Wiley and Aaron Bowling. Middle row, from left: Johnny Leggett, Trotter Hunt, Sam Costanza. Front row, from left: Jay Guillot, Trott Hunt, Jason McIntosh.



Nondestructive Inspection Service was one of three EWTA member companies to be honored as a Supplier of the Year in the Consulting/Services Category. From left are Talon Roberts, Steve Barnett, Jim Whittington, Ed Hauldren, Pat Kinder, Earl Roberts and Nick Keener.

MANAGING MOISTURE

APA's Hygrothermal Research Program Tests Insulating Materials

by Kelvin Liu

The emphasis on climate change has influenced governments to address the issue of energy efficiency, or lack thereof, in our current buildings. As a result, building codes throughout the U.S. have become more stringent in terms of increased requirements for thermal resistances in colder climates. APA – The Engineered Wood Association is addressing the topic through the involvement of the Coalition for Fair Energy Codes (established to advance the fair and impartial treatment of all building products in energy codes and standards) and an ongoing hygrothermal research program that, when complete, will allow APA to make general design recommendations on the use of wood structural panels in energy efficient walls in wood-framed construction.

Thermal resistance, typically measured as an R-value in the construction industry, is the ability to resist heat flow across a specific material or assembly. In the case of wood-framed building enclosures, recent versions of building codes require either increasing the thickness of conventional insulating materials such as fiberglass batt insulation between wood studs or using high R-value materials such as rigid foam insulation. However, changes in insulating materials and building enclosure design may introduce potential durability issues, especially when vapor retarders are used. Vapor retarders are continuous materials that prohibit or reduce the passage of water vapor through wall and ceiling assemblies to prevent moisture condensation. Most building materials are sensitive to temperature, relative humidity and moisture, which under certain circumstances can lead to material deterioration, mold-growth, and decreased thermal performance.

APA's hygrothermal research program is a multi-year effort aimed at understanding when condensation may occur in wall assemblies and how drying occurs when the wall is subjected to moisture intrusion or condensation. It involves a series of collaborative research projects

designed to help identify the best way to optimize energy efficiency in wall structures. In 2011, APA partnered with the USDA Forest Products Laboratory and Washington State University to investigate the potential combination of wood structural panel sheathing and rigid foam



The exterior walls of the test hut are insulated with common insulating products before (top photo) and after the exterior siding is installed.

Photo courtesy of APA – The Engineered Wood Association

plastic insulation as a solution for structural and energy conservation requirements in U.S. building codes. (Additional information about this completed study can be found in *Wood Structural Panel and Foam Insulations Systems: Hygrothermal Behavior & Lateral Load Resistance – Experimental Studies*, Form R700 at apawood.org/resource-library.)

Practice Into Use

APA is currently testing the findings of this collaborative study at an APA test facility it designed and built in late 2015 on the campus of APA's headquarters in Tacoma, Wash. The Hygrothermal Test Hut exposes various types of wall assemblies to the real world environment. The test hut is eight ft. wide by nine-and-a-half ft. tall by 40 ft. long and is fully insulated and conditioned to typical indoor environments in the region (70 degrees F and 45 percent relative humidity) suitable for residential buildings. It is able to house 16 individual wall assemblies with various configurations; each four ft. wide by eight ft. tall. The assemblies are built to expose one side to the natural outdoor environment and the other to a controlled indoor environment. The walls are oriented facing both the north and south directions to evaluate the effects of sunlight and shade exposure.

The test walls are insulated with a number of different common exterior insulation products, including extruded polystyrene, expanded polystyrene and mineral wool insulation. While results of the tests won't be available until at least one full year of testing is complete (approximately January 2017), APA researchers have designed the research walls to assess some potentially high risk assemblies. One risk is the use of low-vapor permeability insulation materials (such as the extruded polystyrene and the expanded polystyrene) that may reduce the drying potential of the exterior-facing wall and may lead to mold growth or decay in the wall if low permeability vapor retarders installed on the interior side of the same test walls are also installed, as they may inhibit the wall's ability to dry inwards, essentially creating a "trap" for moisture that finds its way into the stud cavity. The potential for moisture entrapment has been a major concern



Photo courtesy of APA – The Engineered Wood Association

Each test wall is instrumented with temperature, relative humidity and wood moisture content sensors located at various locations within a stud cavity.

in the wood structural panel industry. The effect of cavity insulation thickness on moisture performance is also being studied by comparing 2x4 framing with R-13 batt insulation and 2x6 framing with R-21 batt insulation within the same set of test walls. Researchers hope the full year of exposure will allow them to observe how the various wall configurations perform under a dynamic range of climate conditions.

Measuring Moisture

Each test wall is instrumented with temperature, relative humidity and wood moisture content sensors located at various locations within a stud cavity. They are also fitted with a wetting apparatus that can simulate potential moisture leaks into the wall assembly. The sensors will be able to constantly monitor the temperature and moisture levels within each wall assembly over the course of a pre-selected time period in order to understand

the performance of the walls exposed to actual seasonal weather conditions. After a period of data collection under regular exposure, the test walls will be subject to simulated water leaks using the wetting apparatus. A known amount of water will be periodically injected through a plastic tube that is fed to a wetting towel attached to the inside surface of the wood structural panel. The simulated water leaks will test the wall assemblies' ability to stay or become dry in the presence of excess moisture.

It is expected that the results from this study will help researchers understand the effect of moisture condensation on various insulating materials, as well as the drying capabilities of such materials in cold and wet climates. Researchers will also be able to understand how Class I vapor retarders (such as a 6 mil polyethylene membrane) affect the wall's drying potential in comparison to Class III vapor retarders (such as two coats of latex primer and paint). The study's findings will determine how typical wall assemblies should be designed to prevent against moisture-related problems, particularly in Pacific Northwest's wet and

often cold Climate Zone 4C conditions.

Furthermore, the test data will be compared to simulated data using a one-dimensional computer hygrothermal model (WUFI Pro). The comparison will be useful to determine the accuracy of computer simulated models used to design wall assemblies. The data will also be compared to real-world data currently being collected by a parallel study at the USDA Forest Products Laboratory in Madison, Wis. The Madison study — which also uses a test hut to conduct the experiment on similar test wall assemblies — is located in a Climate Zone 5, which is colder than the Pacific Northwest's Climate Zone 4C. In theory, the condensation potential within a wood-framed wall assembly for an occupied home would be greater in the colder region.


Defining Data

The results from the APA Test Hut can serve as substantial evidence for potential changes to current building code requirements. In particular, the sections in the model building codes that address vapor retarders, insulation and other

EWTA's Involvement in Industry Research

While the majority of the funding for the APA Test Hut research was provided by APA members, EWTA contributed \$10,000 in funding in 2015 and will contribute another \$10,000 in 2016. For more information on the contributions of EWTA's members towards APA-led research projects, see the story, "EWTA 2016 Funding Set at \$50,000" in the Association CONNECTIONS section on page 56.

wall assembly materials can be further refined. The wood-framed residential building industry can benefit from the results of this study, as it will ensure that certain designs can reduce or eliminate the chances of wall assembly failure caused by unwanted moisture intrusion. Designers and engineers can also benefit by understanding the accuracy and limitations of computer simulated hygrothermal models.

The research data, analyses and recommendations will be included in an APA Technical Report provided after the tests are completed. This could be as early as mid 2017, depending on the success of data collection and if any significant changes to the test parameters are required. 

Kelvin Liu is a building scientist in APA's Technical Services Division. He can be reached at Kelvin.Liu@apawood.org.



Photo courtesy of APA – The Engineered Wood Association

The "wetting apparatus" applies water to a towel that is placed over the inside surface of a wood structure panel. The simulated water leaks will test the wall assemblies' ability to dry out the excess amount of moisture.



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EWTA 2016 Research Funding Set at \$50,000

EWTA's Advisory Committee at its fall meeting voted to allocate \$50,000 in funding for five projects benefiting the engineered wood industry as part of its overall 2016 budget recommendation sent to the APA Board of Trustees. The project proposals, presented by APA staff and reviewed by the EWTA Adhesives

and Technical Subcommittee, included \$10,000 for a study on VOC emissions from wood, \$10,000 for a continuation of a study into industrial markets, \$10,000 to study acoustic and fire-related assemblies, \$10,000 for hydrothermal research, and \$10,000 for testing of the Flame Spread Index for wood structural panels.

In 2015, EWTA supported four APA projects with funding totaling \$46,000.

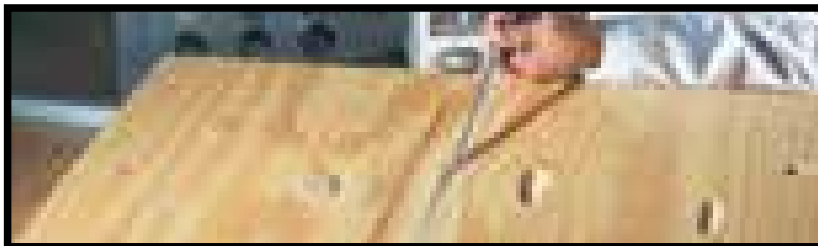
Over the past 15 years, EWTA's research investment — paid with associate member contributions and program revenue — has totaled nearly \$200,000.

APA Staff; Members Named to CWC Committee

Several APA staff members and APA members were recently named to the Canadian Wood Council's newly formed Technical Strategies and Priorities Steering Committee, which was created to provide guidance to CWC's technical staff in the development, implementation and performance measure of the Canadian Wood Council's technical strategies and priorities.

Members representing the wood structural panel and engineered wood producers include Dr. BJ Yeh, APA Technical Services director; Robert Fouquet, vice president, Product and Export Market Development, Norbord Inc.; and Kevin Blau, manager, Product Development and Quality, Tolko Industries Ltd.

The committee will also provide commentary and recommendations to the council's board of directors on CWC technical program effectiveness, strategic direction and human resource and budget needs.



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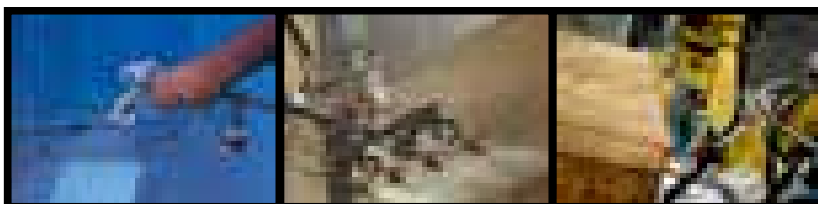
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RoyOMartin's Jonathan Martin Receives Bronson J. Lewis Award

Jonathan Martin, owner and president of RoyOMartin of Alexandria, La., was honored with the Bronson J. Lewis Award at the APA Annual Meeting in Coeur d'Alene, Idaho.

The annual award is named after the late Bronson Lewis, who served for 24 years as secretary and then executive vice president of APA. The award recognizes individuals for their leadership and outstanding contribution to the industry.

Martin has been a recognized force in the structural panel industry for more than 40 years. In 1981, he directed the design and construction of the first OSB plant in the south, and in 1995 he directed the design and construction of a new state-of-the-art plywood plant. He embodies RoyOMartin's unique management style, seizing opportunities and instilling a commitment to success in all employees.



RoyOMartin Owner and President Jonathan Martin, with his wife Maggie Burnam Martin, accepts the Bronson J. Lewis Award from 2014/15 APA Chairman Tom Temple.

EWTA Welcomes New, Returning Member Companies

Several new and returning companies have joined EWTA as members since the publication of the fall *Engineered Wood Journal*, bringing total current membership count to 107 companies. They are:

- **Arch Wood Protection, Inc.** (www.wolmanizedwood.com), of Atlanta, Ga., is a producer of wood treating chemicals. Director of Business Development J.R. Virnich can be reached at jr.virnich@lonza.com.
- **BRUKS Rockwood** (www.bruks.com), of Alpharetta, Ga., is a specialty materials handling company known in North America for its drum chippers and has a 120-year history in innovative equipment for wood chipping and hogging. North America Sales Manager Rene van der Merwe can be reached at rve@bruks.com.

- **Combilift USA** (www.combilift.com) of Greensboro, N.C., is a specialist forklift and straddle carrier manufacturer producing a wide range of customized handling solutions. VP of Sales and Marketing Northeast Gearoid Hogan can be reached at gearoid.hogan@combilift.com
- **Mereen-Johnson LLC** (www.mereen-johnson.com) of Minneapolis, Mn., is a woodworking technology company offering a long line of material handling equipment. Corporate Sales Manager Dave Olson can be reached at info@mereen-johnson.com.

Mulberry Named New President at Roseburg

Roseburg Forest Products recently announced that it has selected Grady Mulberry to assume the role of company president. Allyn Ford, Roseburg president and CEO, will continue in his role

as CEO until January 2017, when he will retire. Mulberry will then assume the joint role of president and CEO.

Mulberry joined the Springfield, Ore., company in 2011 as vice president of Composites Manufacturing and later became vice president of Manufacturing. He has led Roseburg's production operations since 2012.

Ford has been CEO/president of Roseburg since 1997 after overseeing the company's timberlands for several years. He succeeded his father, the late Kenneth Ford, who started the company in 1936.

Hexion Names Knight As New CEO

Hexion Inc. recently named George F. Knight the new executive vice president and chief financial officer of the company. He replaces William H. Carter, who is retiring. Knight was previously the senior vice president—finance and treasurer for Hexion and had served in that role since 2005.

ADM Systems Promotes Fyffe to CEO

ADM Systems Engineering recently announced the appointment of Steve Fyffe to the role of CEO. Fyffe has been with ADM since 2010 as the business development manager for the company's mechanical group. His professional background is in multi-disciplinary industrial projects and industrial energy management.

BASF Named Top Employer in Canada

BASF was recently named one of Canada's Top 100 Employers for 2016 by Mediacorp, a publisher of employment periodicals. BASF Canada was cited for providing its employees with benefits that meet their needs at different life stages, from health care and parental leave to scholarships and retirement.

In addition to offering 17 weeks of parental leave for new parents, the company offers family coverage on their health plan. The company also received recognition for its learning and development opportunities, including international and cross-organizational moves.

Valspar Provides \$25,000 In Scholarships

Valspar recently announced that its Valspar Foundation has donated \$25,000 to provide scholarship and research opportunities for North Dakota State University (NDSU) graduate students studying coatings and polymeric materials.

Valspar's contribution will support five graduate students with scholarships of \$3,000 each. The remaining funds supported undergraduate students participating in the Coatings and Polymeric Materials Department's Summer Undergraduate Research Experience (SURE).

Ashland Separates Into Two Companies

Ashland Inc. announced in a press release that it has separated into two independent, publicly traded companies — Ashland and Valvoline.

The new Ashland will be a specialty chemicals company with positions in the consumer and industrial markets, and Valvoline will be an engine and automotive maintenance business.

The company also announced the hire of Greg Elliott as vice president and chief human resources and communications officer. Elliott was most recently a senior vice president at Navistar, a global manufacturer of commercial and military trucks, proprietary diesel engines and buses.

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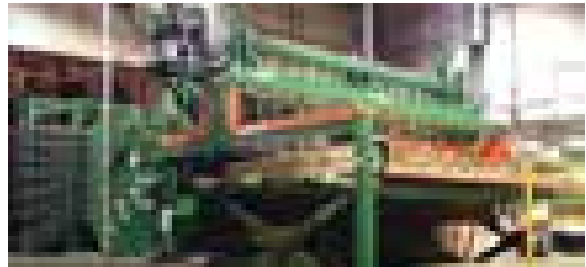


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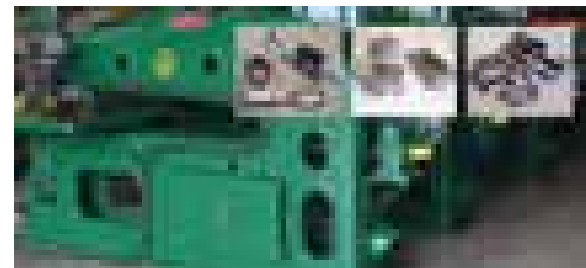
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- 5-6** Wood Bioenergy Conference and Expo, Atlanta, Ga., bioenergyshow.com
- 6** EWTA Advisory Committee Spring Meeting, Atlanta, Ga.
- 6-8** IWPA 60th World of Wood Annual Convention, Austin, Texas, www.iwpawood.org
- 7-8** Panel and Engineered Lumber International Conference and Expo (PELICE), Atlanta, Ga., pelice-expo.com
- 17-20** Composite Panel Association Spring Meeting, Tucson, Ariz., www.compositepanel.org

MAY

- 1-3** American Wood Protection Association's Annual Meeting, San Juan, Puerto Rico, www.awpa.com
- 1-6** Global Forest Products Leadership Summit, Vancouver, B.C., www.forestproductssummit.com
- 19-21** American Institute of Architects Convention 2016, Philadelphia, Penn., convention.aia.org
- 19-20** Hardwood Plywood and Veneer Association Spring Conference, New Orleans, La., www.hpva.org
- 24-28** 25th Biennial Xylexpo Exhibition, Milan, Italy, www.xylexpo.com

JUNE

- 1-4** 16th International Exhibition on Woodworking Machinery and Furniture Manufacturing Equipment, Beijing, China, www.chinaexhibition.com
- 15-17** International Bioenergy Conference and Exhibition, Prince George, B.C., www.bioenergyconference.org
- 27-29** Forest Products Society 70th International Convention, Portland, Ore., www.forestprod.org

AUGUST

- 22-26** 2016 World Conference on Timber Engineering, Vienna, Austria, wcte2016.conf.tuwien.ac.at

SEPTEMBER

- 28-30** Timber Processing and Energy Expo, Portland, Ore., www.timberprocessingandenergyexpo.com
- 24-27** International Woodworking Fair, Atlanta, Ga., www.iwfatlanta.com

NOVEMBER

- 5-7** APA Annual Meeting and EWTA Info Fair, Bonita Springs, Fla., www.apawood.org, www.engineeredwood.org

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For EWTA membership information:

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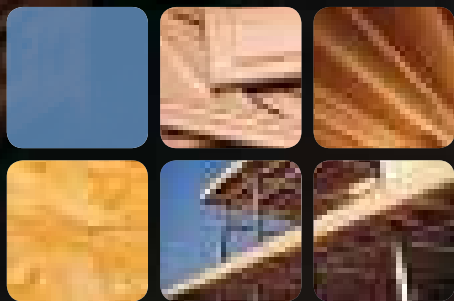


Correction: In the Advertiser Connections section of the fall 2015 issue of the *Engineered Wood Journal*, McLube was listed under "lubricants". McLube should have been listed under "release agents". The *Journal* regrets the error.

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