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Joey Inskip—Welcome to The Beck Group



We are pleased to welcome Joey Inskip to our staff of consultants!

Joey, originally from Bozeman, Montana, recently graduated from Oregon State University (Go Beavers!) where he completed a Bachelor's Degree in

the Department of Wood Science and Engineering. While at OSU, Joey completed an internship with Roseburg Forest Products Engineered Wood Division in Riddle, Oregon. During the internship he worked on controlling inventory and assisted in value stream mapping the plant's processes to reduce waste. He was also involved in daily quality assurance testing for I-joists and in verifying the quality of resin, veneer, and OSB received from suppliers. Joey also completed a

research project at OSU aimed at identifying the yield of steam distilled essential oil from Douglas fir.

Since joining The Beck Group in early 2015, Joey has been involved in a variety of projects, including estimating the production of mill residues at sawmilling operations in the Pacific Northwest, researching and gathering information in support of our client's position in an expert witness project, estimating the supply of biomass fuel from sources that include urban wood waste, logging slash, and wildfire hazard reduction treatments. Joey assisted in gathering and analyzing data related to sawmill operating costs, yields, sales realizations and operating margins in Coastal Oregon and Washington, the Inland West and the U.S. South.

In his spare time, Joey is an avid snowboarder and skateboarder, and he has travelled extensively to places in Australia, Egypt, Europe, New Zealand, Canada, and Mexico. Welcome aboard, Joey!

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Summer 2015

Forest Products News from . . . The Beck Group

"Whenever you find yourself on the side of the majority, it is time to pause and reflect"
Mark Twain

Cross Laminated Timber Update



In the Fall 2011 issue of *Forest Products News from The Beck Group*, we featured a story about Cross Laminated Timber (CLT) as an exciting new mass timber product that can be used in multi-story residential and commercial buildings. 3.5 years later we are still optimistic that CLT represents a significant new North American market opportunity for the forest products industry. The reasons why include:

Building Code Adoption—the 2015 International Building Code recognizes North American use of CLT in heavy timber construction so long as the CLT materials are manufactured to the ANSI/APA PRG 320-2013 standard published by APA—The Engineered Wood Association. As local jurisdictions in North America adopt the 2015 IBC, it will simplify the process by which buildings designed with CLT components can navigate the code approval process. The result is expected to be more widespread use of CLT in buildings.

For example, the Portland Cement Association, who is keenly interested in the development of CLT, noted in

their May 2015 Executive Report that in the mid-rise market (6 to 10 stories) the share of wood has increased from a low of about 3% in 2006 to over 18% in 2013. One example is Promega Corporation's Feynman Center in Fitchburg, WI, which used over 14,133 cubic feet of CLT panels in the roof. Another is Redstone Arsenal, the first U.S. hotel made from CLT, it is a 4 story structure currently under construction near Huntsville, Alabama. Other CLT projects are in earlier stages of development, including Carbon 12, a mixed-use 8 story CLT building in Portland, Oregon that will have a structural system comprised of glulam beams and columns with CLT floor decking and shear walls.

Expanding Manufacturing Capacity—presently, only 3 North American CLT manufacturing facilities are in operation, two in Canada and one in Montana. However, D.R. Johnson in Riddle, Oregon recently announced plans to add a CLT manufacturing line to its existing glulam production facility. Similarly, SmartLam, the only existing U.S. CLT manufacturer, is planning to quadruple its current capacity, which would make it the

Beck Group Associates Update

The Beck Group utilizes associates having specialized areas of expertise so we can better meet our clients needs and bring more value to their projects. The following information provides a short biography for each of several associates that we work with regularly.



Bill Carlson — has a background of over thirty five years experience in design, development, acquisition, operation, and maintenance of small (50 MW or less) steam/electric power plants — primarily those fueled by solid fuels, including woody biomass. Since 2004, Bill has been involved in the development of 10 biomass heat and/or power projects representing nearly 170 MW of generating capacity.



Bjorn Wahl — has more than 30 years of experience in the composite panel industry, including a position as Senior Vice President of Arclin Building and Construction where he was

focused on all commercial activities related to resins and overlays. Bjorn also served as Director and Chairman of the Composite Panel Association and Director and Chairman of the Laminating Panels Association.



Tom Such — has more than three decades of experience in the wood products industry, where he has focused on optimizing primary and secondary breakdown systems, lumber manufacturing process control, maintenance management and planning, and staff training.



Doug Hay — has over 30 years of experience in the forest products industry, where he has developed dozens of optimization models for use in plywood layup, sawmill management, and geographic planning. He also managed the statistics, math and operations research department for Weyerhaeuser Company.

CLT Update (continued)

largest CLT manufacturer in the world. SmartLam is in the somewhat unique position of making panels used in the oil and gas industry as drilling rig platforms, temporary bridges, and roadways. The expanded plant would also produce CLT for structural applications in buildings.

Fire Resistance—The American Wood Council recently completed fire resistance testing, which confirmed that CLT exterior walls exceed the fire related building code requirements for heavy timber construction. When exposed to fire, the panel exterior surface chars and then burns at a slow and predictable rate due to the char insulating the interior of the panel from the flame. Unlike steel, CLT also maintains much of its strength at high temperatures, which gives building occupants crucial time to evacuate during a fire.

What Have We Learned?—The Beck Group has been retained to assist a client in assessing the feasibility of

manufacturing CLT for structural applications and in helping the client develop a business plan. While the project is ongoing, it is already clear to us that a key aspect of successful CLT manufacturing will be for CLT manufacturers to be well staffed with expertise and knowledge for assisting building developers in identifying an optimal building design and material solution. Since building design is complex and CLT is typically just one component of the design solution, CLT manufacturers must be prepared to assist developers, architects, and engineers in evaluating the complex mix of often competing factors leading to final building design and material selection.

That business model may change as CLT panels become more commodified. However, for the time being it appears that a strong focus on customer assistance and business development will be at least as important as developing a CLT manufacturing facility with productive and cost effective manufacturing processes.

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BECK Projects Update

BECK staffers have been busy completing a variety of projects; a few highlights are described below.

Beck Group Competitive Assessment Update

Under Development

Global Timber/Sawmill/Lumber Cost Benchmarking Report — The Beck Group, in partnership with International Wood Markets Group, is developing a cost benchmarking report that covers the major sawn wood producing regions in North America, Europe, Russia, China, and the Southern Hemisphere. For each region, the report will contain data on sawlog and sawmilling costs, log to lumber yields, average lumber and mill by-product sales realizations, and operating margins.

Other Beck Group Project Activities

New Resin Technology—Ecovative is a material science company based in New York that has developed an innovative, chemical-free resin technology. They retained BECK to assist in determining whether composite panel manufacturers could operate at a lower cost when using their technology. In addition, BECK assisted in identifying the market segments most likely to utilize composite panels manufactured with Ecovative's technology. Finally, BECK aided Ecovative in identifying production and marketing partners for commercializing the technology.

Export Pellet Plant Supply and Logistics Study—BECK assisted a confidential client with identifying the locations in the Pacific Northwest where sawmill by-products are in over- and under-supply. In the over-supply regions, BECK also gathered information about the existing port infrastructure and the ability to receive, store, and load wood pellets for export.

Global Forest Partners—GFP owns approximately 30,000 hectares of timberland in Uruguay that was planted with loblolly pine in the late 1990s. The plantations have been pruned and harvests are planned to start in the near future. Beck is assisting GFP in identifying a partner who can develop a conversion facility and market the high value, clear lumber that is expected from the plantation.

Mooretown Rancheria of Maidu Indians of California—Mooretown Rancheria is a Native American Tribe near Oroville, California that is seeking to develop a biomass combined heat and power facility under the California SB

The data covers calendar year 2014 and is classified into nearly 30 countries/regions. Also included is an update on data from the first quarter of 2015. The report provides strategic information on the competitiveness of various regions within the global timber, sawmill, and lumber industry. Contact us for more information about how to order the report (email: info@beckgroupconsulting.com or call 503-684-3406).

1122 program, which was designed to support small scale biomass power projects. BECK's scope of work includes estimating fuel supply and cost, identifying the appropriate technology (gasification versus director combustion) for converting the biomass fuel to heat/power, identifying the size of the plant needed to produce power and to heat the Rancheria's casino and hotel, and evaluating the financial feasibility of the project.

Integrated Small Diameter Processing Facility—BECK was awarded a contract from the Oregon Department of Forestry to assess market opportunities for utilizing small diameter trees in Eastern Oregon. A focus area will be evaluating the concept of an Integrated Facility that has the flexibility to produce a variety of products (e.g., firewood, post and poles, pulp chips, shavings, etc.) from small diameter roundwood. This project is just getting underway.

Confidential Client—we are assisting a Pacific Northwest sawmill operation with the completion of in-mill log tests and in using the data generated from the log tests to calculate Return-To-Log values for a variety of log diameters and lengths.

Business Appraisal—BECK recently completed a business valuation of a forest products conversion facility in the Southern U.S. The appraisal was needed as part of a negotiation between the owner of the facility and a prospective purchaser. BECK's scope of work included determining the value of the business as a going concern using a combination of the market data approach and the income approach.