MADISON'S LUMBER REPORTER Publisher **KetaDesign Productions** Editor Kéta Kosman Market Analyst **Earl Heath Print Production Pauline Petit Annual Subscription Prices** E-mail/Fax: US\$408.45 Discounts available for multiple subscriptions Published 50 times a year www.madisonsreport.com madrep@shawcable.com 604 319-2266 PO Box 2486 Vancouver, BC V6B 3W7 Canada

In Canada, add GST or HST ISSN 0715-5468

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News & Update

Strong Softwood Lumber Prices Plus Duties for Canada: 3Q 2017

The 3Q 2017 issue of *Madison's Forest Pulse* is almost ready to be sent to subscribers! Don't miss out on this vital and timely information.

Much is being made of current high softwood lumber prices, as opinions abound about the near-future supply-demand balance. Forestry has been a supply-side market from the very beginning of this year, and all signs point to continued, ongoing strong wood demand in the US for real building projects.

This week *Madison's* takes a look at the most-often used wood construction framing commodity prices compared to the all-time highs of mid-2014 to mid-2015. There are some very interesting changes to the movement of those prices against each other from that time to present.

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New Paper Product Category Standards

FPInnovations, in collaboration with The American Forest and Paper Association (AF&PA) and the Forest Products Association of Canada (FPAC), announced Thursday it has developed a Product Category Rules (PCR) for North American market pulp, paper and paperboard products, tissue, and containerboard manufacturers.

This PCR allows North American pulp, paper, tissue, and containerboard manufacturers to communicate the environmental footprints of their products in compliance with international standards.

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Interfor Expands

Vancouver, BC-based Interfor announced November 9 that it plans to invest US\$16.5 million to upgrade its sawmill in Meldrim, GA, said *Savannah Now.*CONT'D PAGE 7

US Housing Starts: October 2017

With solid readings from the single-family sector, total new housing starts in the United States blew away all expectations with huge October increases, according to a joint data release Friday from US Commerce Department and HUD. Not really a surprise to North American softwood lumber manufacturers — after a quick glance at strongly rising wood prices through this year — total US housing starts increased 13.7 per cent to a 1.29 million seasonally adjusted annual rate, the latest data said. A jump in multifamily construction also increased the headline rate.

This was the highest level since October 2016. September's sales pace was revised up to 1.135 million units from the previously reported 1.127 million units.

Building permits increased an astonishing, for the season, 5.9 per cent, to a seasonally adjusted annualized rate of 1,297 thousand, higher even than the 1,225 thousand permits issued in September. It is the biggest value so far this year. Most important to lumber producers, permits for construction of single-family homes increased 1.9 per cent to 839 thousand, while for multi-family homes permits rose 13.4 per cent to 416 thousand.

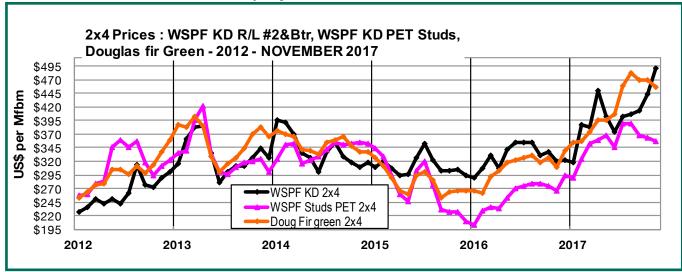
CONT'D PAGE 7

Cross-Laminated Timber, LVL, Glulam, and other Structural Laminates

A bridge made of engineered wood; specifically, cross-laminated timber! Even *Madison's* hadn't expected such anon-traditional application of forest products as a building material.

Researchers at South Dakota State University's J Lohr Structures Lab have tested the strength of a glulam bridge as part of a push to give counties and towns more options when designing new bridges or replacing old ones.

CONT'D PAGE 9&10



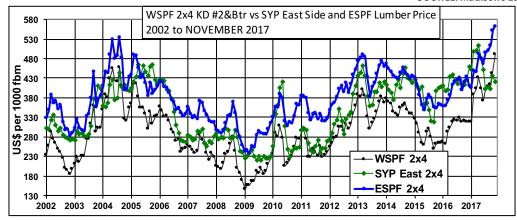
Current Softwood Lumber Prices Compared to Historical Highs

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As the table beside illustrates, western and eastern spruce-pine-fir — produced largely in western Canada and Quebec respectively—prices are rising now compared to the soaring highs of 2Q 2004. For it's part, southern yellow pine — manufactured mostly in the US south — matched those increases of SPF until about June this year then started to lose ground.

2x4 Dimension Lumber						
US\$ per thousand board feet	17-Jun	17-Nov		All Time High Compared to 11-17:		
SYP East Side KD #2&Btr	\$452	\$420	-7.0%	3Q 2005 : \$460	-8.7%	
WSPF KD #2&Btr	373	482	22.6%	2Q 2004: \$443	8.0%	
ESPF KD #2&Btr	467	565	17.3%	2Q 2004: \$529	6.4%	
Douglas fir Green	363	455	20.0%	2Q 2004: \$500	-9.0%	
STUDS (PET)	405	360	-11.0%	2Q 2005: \$445	-19.0%	

Standard Construction Framing Lumber Commodity Price Compared to All-Time High SOURCE: Madison's Lumber Reporter



WSPF, SYP, ESPF 2x4 Prices 15-year Trends

SOURCE: Madison's Lumber Reporter

On the graph above it is clear that, into 3Q 2017, the previously consistent rise of southern yellow pine lumber prices has retreat-

ed while western and eastern spf continue to climb.

Current Softwood Lumber Prices Compared to Historical Highs

The latest data, meanwhile, shows steady upward trends in softwood lumber manufacturing across Canada and the US, as the upcoming issue of *Madison's Forest Pulse* will show. Even at writing, North American sawmills are reporting to *Madison's* that their order files are past the beginning of December, which is quite unusual. Normally at this time of seasonal low for construction and building, sales would be slowing down and

sawmills would be getting ready to empty out their log and their lumber yards for year-end.

For the very first issue of 2017, *Madison's* noted quite strong demand for softwood lumber which doesn't seem to have abated much over this year. Come the first week back to work for January 2018, it is reasonable to expect similar high demand, and therefore prices to remain on the upside.

Madison's Weekly Lumber and Forestry Data Table www.madisonsreport.com								
	Year to Date	Previous Change			Full Year Change %			
	(THIS MONTH)	YTD (MONTH A	,	Trend	(YEAR AGO) 2016 (YEAR AGO) Trend			
Five Key 2x4 Lumber Prices: Aggregate US\$/mfbm	498	479	+4.0%	A	359 +38.8% ▲			
	400	500	0.00/		201 . 04.00/			
Benchmark Panel Prices: Aggregate C\$/msf	488	538	-9.3%	\blacksquare	391 +24.8% ▲			
VOLUMES								
Canada Lumber Production: softwood, million m3	38.95	38.98	-0.1%	•	66.9 -41.8% ▼			
VALUES								
Canada Sawmill Manufacturing Sales: million C	7,382	7,094	+4.0%	A	11,284 -34.6% ▼			
US Total Sawmill Products Imports: million US\$	4,158	4,029	+3.2%	A	6,128 -32.1% ▼			
US Total Sawmill Products Exports: million US\$	736	678	+8.6%	A	1,021 -27.9% ▼			
Canada Sawmill Exports to USA: million C\$	5,022	4,918	+2.1%		7,501 -33.0% ▼			
SOURCE: Madison's Lumber Reporter www.madisonsreport.com								

Madison's Weekly Softwood Lumber Key Prices Table

www.madisonsreport.com

Prices are in U.S. dollars per 1,000 fbm (net F0B mill)	This Week	Last Week	Chang	je %	Trend	Month Ago	Change	% Tr	end	Year Ago	Change	% Trend
WSPF KD R/L 2x4	528	482	+46	+9.5%		446	+82+	18.4%	A	306	+222	+73% ▲
WSPF KD R/L 2x6	556	500	+56+	11.2%		468	+88+	18.8%	A	275	+281 -	+102% ▲
SYP KD R/L East Side 2x4	430	420	+10 -	+2.4%		435	-5	-1.1%	•	430	0	% -
SYP KD R/L East Side 2x6	405	400	+5 -	+1.3%		420	-15	-3.6%	\blacksquare	345	+60	+17% 🔺
ESPF KD R/L 2x4	565	565	0	0.0%	-	555	+10	+1.8%	A	395	+170	+43% ▲
WSPF KD PET 2x4 Stud	356	360	-4	-1.1%	•	360	-4	-1.1%	\blacksquare	265	+91	+34% ▲
WSPF KD PET 2x6 Stud	380	405	-25	-6.2%	•	395	-15	-3.8%	•	220	+160	+73% ▲
Douglas Fir Green R/L 2x4	455	455	0	0.0%	-	465	-10	-2.2%	•	315	+140	+44% ▲
Douglas Fir Green R/L 2x10	480	485	-5	-1.0%	•	505	-25	-5.0%	•	315	+165	+52% ▲
ESPF KD 2x4 8ft Stud	450	450	0	0.0%	-	455	-5	-1.1%	\blacksquare	355	+95	+27% ▲
OSB Ontario 7/16" (CDN\$/msf)	523	500	+23 -	+4.6%	A	595	-72 -	12.1%	▼	365	+158	+43% ▲
CSPlywood Toronto 3/8" (CDN\$/m	sf) 453	453	0	0.0%	-	481	-28	-5.8%		417	+36	+9% ▲

Madison's Weekly Softwood Lumber News

Standardizing Paper Product Categories

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FPInnovations announced Thursday it has developed a Product Category Rules (PCR) for North American market pulp, paper and paperboard products, tissue, and containerboard manufacturers.

In order to ensure the transparency of the PCR development process, FPInnovations chose an independent organization, Sustainability Edge Solutions, to chair the technical committee established to develop the PCR and engaged with other program operators, namely the International EPD System based in Europe and CSA Group operating from Canada.

Full details available here: https://fpinnovations.ca/ResearchProgram/environment-sustainability/epd-program/Documents/n-american-market-pulp-paper-and-paper-products-tissue-and-containerboard.pdf

Interfor Invests

CONT'D FROM PG 2

The project at Interfor's sawmill in Meldrim, GA, sawmill, which is scheduled to be completed in December 2018, includes installation of a continuous lumber drying kiln and upgrades to the planer mill, according to Savanah Now.

Lumber production is expected to increase by 50 percent in addition to improving product quality and mill efficiency.

Once the project is completed the facility will operate a full two shifts.

Interfor, out of Vancouver, BC, acquired that sawmill in 2015.

US Housing Starts: October 2017

October's increase in US housing starts ended three straight months of declines. Home building has struggled this year, hamstrung by shortages of land and labor as well as expensive lumber.

Investment in home building has contracted for two consecutive quarters. That has contributed to a worsening housing shortage, which has held back home sales.

Single-family starts were up more than 8 per cent year-to-date compared to 2016, said the **National Association of Home Builders** also Friday, as limited existing inventory and solid builder confidence made for positive market conditions.

Building permits increased an astonishing, for the season, 5.9 per cent to a seasonally adjusted annualized rate of 1,297 thousand, higher even than 1,225 thousand in September. It is the biggest value so far this year. Most important to lumber producers, permits for construction of single-family homes increased 1.9 per cent to 839 thousand while for multi-family homes permits rose 13.4 per cent to 416 thousand.

Part of the gain for single-family construction in October was a rebound in Florida and Texas after project delays in September, according to NAHB. Single-family starts in the South were up 17 per cent compared to September.

Housing completions increased 12.6 per cent to a rate of 1.232 million units last month, the highest level since February 2008. The rise in completions was, however, driven by the multi-family housing segment, which will probably do little to eliminate the acute shortage of properties available for sale, noted *Reuters* Friday. Realtors estimate that housing starts and completions need to be in a range of 1.5 million to 1.6 million units to plug the inventory gap.

With respect to housing's economic impact, 56 per cent of homes under construction in October were multifamily (610,000), detailed NAHB. Recent production declines for apartments, the current count of multifamily units, is effectively unchanged from a year ago. There were 486,000 single-family units under construction, a gain of 10 per cent from this time in 2016.



JOB CENTRE









ANNOUNCEMENTS







TALL WOOD / MASS TIMBER RESEARCH

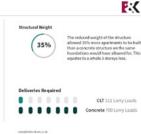












BRIDGES MADE FROM GLULAM

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Glulam is making its way from buildings to bridges, becoming a cost-effective, viable and sustainable alternative to steel and concrete, said the *Fifth Estate* Australia October 17. Australian Bridges on low-traffic county and township roads must be strong enough to withstand great weight – enough to support the typical 15 fully loaded trucks per day that cross these roads, said leading investigator Mostafa Tazarv of South Dakota University.

To prove the glulam bridge's reliability and strength, the researchers applied a 32-kip – or about a 14,500 kilogram-force – load to the middle of the tester bridge, approximately equal

to one lane of traffic, at a rate of one load a second.

Glulam construction costs can also be anywhere from 25 to 50 per cent less than conventional bridges, Tazarv said. As well, they can be installed in a day without specialized equipment or trained personnel.

A sustainable alternative, glulam has low levels of formaldehyde and can be reused to make longer pieces of straight or curved timber. The annual glulam consumption in Australia is approximately 30,000 cubic metres, which is only 0.6 per cent of Australia's total timber consumption, according to the **Glued Laminated Timber Association** of Australia.

Pedestrian Bridges

The town of Neckartenzlingen near Nürtingen in southeastern Germany has needed a new bridge for a few years, now the town is celebrating the opening of an innovative timber structure, said *BridgeWeb* November 7.



View of the underside showing the construction of the wooden superstructure (Fotograf Walther)
SOURCE: BridgeWeb

Since the Neckar River curves at the bridge location, it seemed appropriate to choose an S-shaped plan geometry. As far as bridge type was concerned, two options were compared; a two-tower suspension bridge and an alternative with a continuous support beam mounted underneath with a 'block laminated' timber beams. This consists of glulam beams which are then glued together to form a block, hence the glueing process is in two directions.

The idea was to emulate the form of timber cantilever bridges, whereby supporting elements are stacked one on top of another on the support point. Towards the end of each cantilever arm, the number of supporting elements is reduced, thus resulting in an aesthetic narrowing towards the centre.

With a total length of 96.3m, it became obvious that dividing the bridge into three spans was a practical system, so that it crosses the Neckar River on a 44.5m-long free span in the middle of the structure, with two 25.9m-long spans, one on each side. For feasibility reasons, it was decided from the outset to provide a two-part cross-section, with a gap in the centre providing space for cable conduits.

The basis for the construction is defined as a simple, continuous three-span Gerber beam, the section height of which varies according to the bending moments. The variation in cross-section, which makes the bridge so visually distinctive, is due both to the statics and to efforts to optimise the production process of the wooden structure. For construction, glulam beams with a decreasing cross-section were simply stacked on top of one another and glued.

The choice of timber for the structure was a deliberate one, with integration into the unspoilt surroundings being one of the most important criteria. Also, the challenging geometry resulting from the two curved bridge elements particularly lent itself to the material. Economical construction can easily be achieved using compact glue-laminated timber construction.



An exploded view of the bridge superstructure (IB-Miebach) SOURCE: BridgeWeb

Proposal for Tallest Wood Building in London: Made of Wood

The conceptual 80-storey building called Oakwood Timber Tower "is the largest use of cross-laminated timber (CLT) in the U.K. and in Europe," Kevin Flanagan said at the recent Green Building Festival in Toronto, ON, according to Daily Commercial News October 17.

Flanagan is a partner at London's PLP Architecture which is behind the tower that would have as many as 1,000 residential units in about one million square feet in the heart of London. PLP has partnered with engineering firm Smith and Wallwork and Cambridge University's Centre for Natural

Material Innovation on the project.

The tower is engineered in a series of quadrants or bundled columns, much like Chicago's 1,450-foot-tall Willis Tower, formerly the Sears Tower, Flanagan said.

Flanagan's architecture firm is no stranger to innovation. It designed The Edge, an office building in Amsterdam that was awarded the Building Research Establishment Environmental Assessment Method's (BREEAM) greenest office building in the world last year. A world standard, BREEAM rates and certifies the sustainability of buildings.

TALL WOOD BUILDING IN THE US

For years, glue-laminated beams have been allowed in US construction, but now the International Code Council's ad-hoc committee on tall wood buildings, which has been meeting since 2016, is working to change the International Building Code to allow mass timber products to be used to build taller structures. In May and June, the committee tested five fire scenarios on a two-story, CLT-constructed building and were successful, said the *National Real Estate Investor*, November 1.

There's the 18-storey T3 project in Minneapolis, MN, made from pine felled by mountain pine beetles.

The Framework project in Portland, OR, which received approvals over the summer and is slated to begin construction next year, will stand at 12 stories, or 148 feet, tall—63 feet above what's currently allowed by building code and a record for the United States. It will be constructed out of a mass timber product called cross-laminated timber (CLT), which only a small number of manufacturers in the US can supply. There is also an effort to incorporate mass timber products into new code regulations to build taller structures.

In another part of Oregon, Swinerton Builders is overseeing the construction of the largest-known building that uses cross-laminated timber, according to *ENR Northwest*. The project, which will house the corporate offices of First Tech

Federal Credit Union Oregon, will be 156,000 sq. ft. in size and five stories high.

Elsewhere, Lendlease, a multinational property developer, owner and builder with many CLT projects in Australia, opened the first CLT hotel in the US, the Candlewood Suites on Redstone Arsenal in Alabama



A model of how CLT would be used in building one of the largest towers of its kind — the proposed Oakwood Timber

Tower in London, England.

SOURCE: BridgeWeb

last year. The project saw a 20 per cent faster completion time and was constructed with 30 to 35 per cent less workforce, said Ben Symons, general manager of communities and infrastructure at Lendlease to the *Investor*.

The four-story hotel, Lendlease's first US project built of CLT, was a partnership with the US Department of Defense as part of the Privatization of Army Lodging Program. For Lendlease, using CLT for this project was cost-competitive to light gauge steel frame systems, which had been used in other Lendlease hotels, the company said.

ADVANTAGES OF BUILDING WITH ENGINEERED WOOD

In the UK, the Committee on Tall Wood Buildings earlier this year conducted a test at the Fire Research Laboratory in Virginia, a state-of-the-art facility that basically lets scientists set things on fire and then watch what happens, according to *BBC* October 31. When they set alight two one-bedroom apartments made of engineered wood, the fire raged until it had burnt through the furnishings, then extinguished itself. The contents were turned to ash, but the structure itself charred and remained intact.

Other than preventing the spread of a fire, one of the most important factors is what happens to CLT when it's heated. In this respect, the material wins hands down over steel and concrete, which tend to melt and weaken.

Then there's the issue of weight. For a long time Murray Grove, a nine-storey housing block in Hackney, UK, was the highest in the world. "If we'd made it from concrete it would have taken 900 HGVs [heavy goods vehicles] rumbling through London to deliver all the material," said Anthony Thistleton, a founding director of Waugh Thistleton Architects who designed the building, to *BBC*. In the end it took only 100 heavy trucks.

As well, they're quicker to build, since even steel skyscrapers have concrete floors which can take weeks to dry. That's several weeks per floor. On the other hand wood panels can be sliced to exact dimensions in the factory and then slotted into place within a matter of hours.