

## CORTON GLOBAL TIMBER FUND

Update Report – January 12, 2020

### MASS TIMBER, CLT, and INDUSTRIALIZED WOOD-BASED OFFSITE CONSTRUCTION

#### Background

- There are a number of new building trends which are developing all over the world. These new trends, which include **Industrialized Wood-Based Offsite Construction and Mass Timber Construction** are spurring the growth in demand for new wood products such as **Cross-Laminated Timber (CLT)**, as well as other existing engineered wood products such as OSB.
- The key drivers behind these building trends include: housing affordability challenges, skilled labour shortages, demographics, and the emergence of “net zero” carbon construction. Wood-based construction materials are carbon neutral.
- While other industries, such as the automotive, have made quantum leaps in productivity, construction is stuck in the 1950s. According to **Forest Economic Advisors (FEA)**, wood-based offsite construction is a **potential \$1.6 trillion market opportunity**.<sup>1</sup>
- The demand for CLT – a panel that is made of dimension lumber (2X6, 2X8) arranged and glued in perpendicular layers – is growing exponentially. Modular wood-based construction reduces the need for cement and uses sustainably-produced wood construction materials which have the same strength properties. Carbon sequestration (capture) in the building further reduces environmental impacts. In a recent analysis *The Outlook for North American Cross Laminated Timber Markets* prepared by **Resource Information Services Inc. (RISI)**, CLT consumption in North America is estimated to grow from 39,700 m<sup>3</sup> in 2014 up to 3.5 million m<sup>3</sup> in 2030.<sup>2</sup> ***This is equivalent to 1.5 billion board feet of new demand for lumber or approximately 2.5% of total lumber consumption in North America in 2019.***
- ***There are no publicly traded Offsite Construction or CLT companies in North America.*** However, a number of the publicly traded holdings in the **Corton Global Timber Fund** either have investments in Mass Timber and Offsite Construction companies, are sawmill companies, or are producers of engineered wood products.



- The **Mass Timber** movement has been driving interest in CLT as builders and architects look to move away from traditional building materials, like steel and concrete, to reduce greenhouse gas (GHG) emissions. The production of cement contributes an estimated 7% of the world's carbon dioxide emissions.<sup>3</sup> Using CLT for structural construction/mass timber buildings can also save builders time and reduce labour costs and worksite waste.
- The largest CLT producer in North America is a privately-held company, **Katerra**. In early 2018, the Company opened a 270,000 square foot CLT plant in Spokane, Washington with the capacity to produce 185,000 m<sup>3</sup> of CLT per year. In late 2018, the Company opened a 250,000 square foot factory plant in Phoenix, Arizona with the capacity to build 10,000 apartments per year. A second 577,000 square foot factory is being built in Tracy, California with the capacity to build 12,500 multi-family units per year.
- Apart from Katerra, there are five other CLT producers in the U.S., operating six CLT plants: **SmartLam** (Columbia Falls, Montana and Maine), **Vaagen Timbers** (Colville, Washington), **Ligna CLT** (Millinocket, Maine), **D.R. Johnson** (Riddle, Oregon), and **International Beams** (Dotham, Arkansas).
- In Canada, there are three CLT companies: **Structurlam Mass Timber** (Okanagan Falls, B.C.), **Nordic Structures** (Chibougamau, Quebec), and **Element5** (Ripon, Quebec). **Element5** is building a second CLT plant in St. Thomas, Ontario. Annual capacity is 45,000 m<sup>3</sup> of CLT.
- On December 9, 2019, **Structurlam** announced that it was expanding its operations into the U.S. with a plant in Conway, Arkansas. The new plant, which ironically is being built in a former steel plant, will have an annual capacity of 150,000 m<sup>3</sup> of CLT and is set to open in mid-2021.

### Mass Timber Construction in North America

- In November 2018, **The Beck Group**, published a **Mass Timber Market Analysis**, in which the consultant identified that from fewer than 20 mass timber projects in the U.S. in 2014, the number of projects had grown to well over 200 by the end of 2018. Today there are well over 300 mass timber projects underway in Canada and the U.S.
- In Canada, the largest proposed mass timber development worldwide, is **Alphabet's Sidewalk Labs'** proposed development in downtown Toronto.
- In the U.S., **Walmart**, the world's largest retailer, is building the largest "campus" project in the U.S. that will use 1.1 million cubic feet of mass timber in its new Home Office campus in Bentonville, Arkansas.

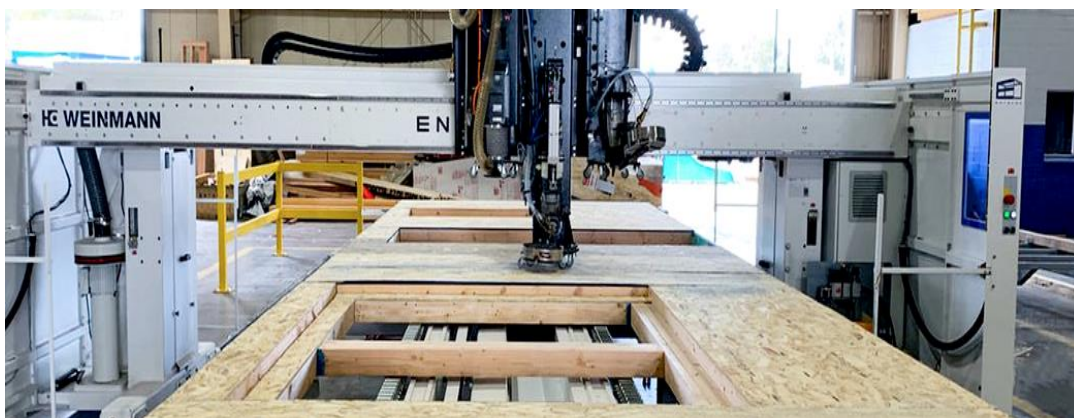
- As illustrated in the following table, North American CLT capacity is expected to grow four-fold over the next four years.

**North American Announced CLT Capacity by Mill**  
(‘000 Cubic Metres)

<b>Company</b>	<b>Location</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
DR Johnson	Oregon	8.0	10.0	10.0	10.0	10.0	10.0	10.0
Nordic Structures	Quebec	60.0	60.0	60.0	60.0	60.0	60.0	60.0
SmartLam	Montana	30.0	60.0	60.0	60.0	60.0	60.0	60.0
SmartLam	Maine	0.0	0.0	50.0	100.0	100.0	100.0	100.0
Structurlam Mass	B.C.	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Vaagen Timbers	Washington	30.0	60.0	60.0	115.0	115.0	115.0	115.0
International Beam	Alabama	0.0	60.0	60.0	60.0	60.0	60.0	60.0
Katerra	Washington	0.0	60.0	120.0	145.0	145.0	185.0	185.0
Ligna CLT	Maine	0.0	25.0	43.6	62.2	80.6	99.4	115.0
Element5	Quebec	0.0	20.0	25.0	25.0	25.0	25.0	25.0
Element5	Ontario	0.0	0.0	0.0	25.0	45.0	45.0	45.0
Structurlam Mass	Arkansas	0.0	0.0	0.0	35.0	125.0	150.0	150.0
<b>Total</b>		<b>198.0</b>	<b>450.0</b>	<b>558.6</b>	<b>767.2</b>	<b>935.6</b>	<b>979.4</b>	<b>995.0</b>

Source: RISI

## INDUSTRIALIZED WOOD-BASED OFFSITE CONSTRUCTION



The largest offsite construction manufacturer in the U.S. is a company called **Entekra**. Founded in late 2016, Entekra is completing a 200,000 square foot (\$35 million) factory in Modesto, California. The factory will have the capacity to build 10 single-family (2,000 sqft) homes per day. The Company’s largest customers are the major home builders who are looking for less expensive housing units. One of the holdings in the **Corton Global Timber Fund** became a significant shareholder in Entekra with a \$45 million investment in 2018.

The benefits of offsite construction include:

- prototyping and co-ordination of designs that minimize mistakes and delays in the field,
- speed of construction means less labour and less training - most of the work is automated,
- no weather delays,
- increased workforce - the factory environment/safety opens up construction jobs for women,
- greater efficiency and quality – fewer warranty issues.



**Sources:**

- <sup>1</sup> FEA – *Industrialized Wood-Based Construction Conference* November 2019 - Boston
- <sup>2</sup> RISI – *Outlook for North American Cross Laminated Timber Markets 2018* – page 83
- <sup>3</sup> *Offsite News* – Building Solutions in Wood – July 3, 2019

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