

 **X-LAM**
DOTHAN AL
Plant Layout

 **INTERNATIONAL
BEAMS**



Metropol Parasol, Seville, Spain
is the world's largest wooden structure.
e. By Jurgen Mayer H. Architects, ..

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01



About International Beams

A Lebcorp Company

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Our Facilities / Sales and
Distribution



What We Do

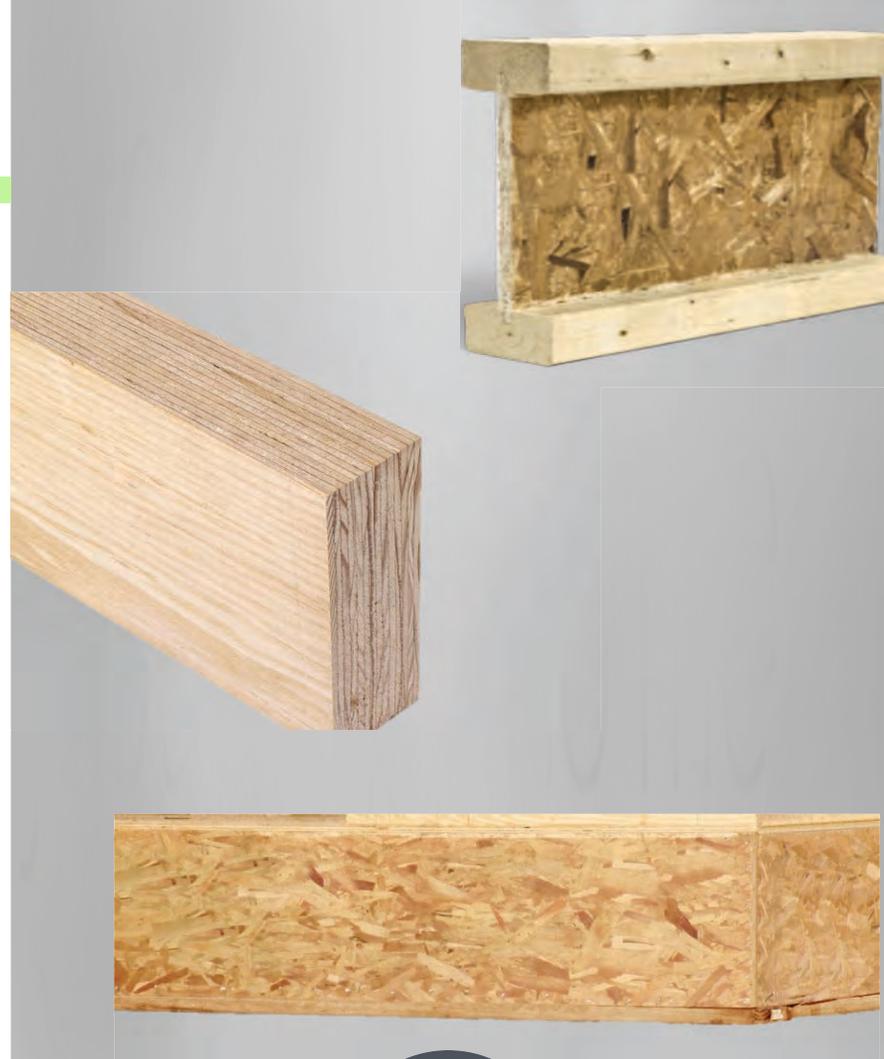
 **MAX-CORE I-JOIST**

 **MAX-CORE LVL**

 **MAX-CORE RIM**

International Beams provides a variety of engineered wood products designed to meet strict performance requirements for the construction markets.

These products can be used for joists and beams that replace steel in many building projects. They are used in a variety of applications, from home construction to commercial buildings to industrial products.



**THREE MAJOR PRODUCT
LINES**

Adding new products to the Family...

 **MAX-CORE I-JOIST**

 **MAX-CORE LVL**

 **MAX-CORE RIM**

 **MAX-CORE[®] CLT**

 **MAX-CORE GLULAM**



FIVE PRODUCT LINES

Our facilities

ONTARIO	ALABAMA	QUEBEC
Tillsonburg Factory <ul style="list-style-type: none">• <i>75 Employees</i>• <i>215 million annual linear foot capacity</i>• <i>Producing since 2014</i>	Dothan Factory <ul style="list-style-type: none">• <i>100 Employees</i>• <i>100,000 m3 annual capacity</i>• <i>Production will start in 2018</i>	Pohenegamook Factory <ul style="list-style-type: none">• <i>55 Employees</i>• <i>65 million annual linear foot capacity</i>• <i>Producing since 1995</i>

Sales & Distribution

Sales & Marketing Office in Sarasota, Florida

- Sales throughout the US and Canada
- Distribution in over 30 states and 4 provinces



Section

02



Industry / Market Analysis

1

CLT Description

2

CLT Market Analysis



What is Cross Laminated Timber (CLT)?

“...the building material of urban America’s future...”
- *The Smithsonian*

Brief History of CLT

In the early 1990’s, a new and innovative wood product, Cross Laminated Timber, was introduced in Austria and Germany. This product was designed to become a complement to existing light frame and heavy timber options, as well as a potential replacement for concrete, masonry and steel in certain building construction applications.

In the early 2000’s, construction with CLT increased all over Europe. The growing popularity of CLT is in great part due to the green building movement accompanied by an increased public awareness in reducing construction’s environmental footprint. The implementation of CLT as a heavy construction system was facilitated by the inclusion of CLT in European building codes. Thousands of projects in Europe and now worldwide have been completed in CLT.



A harmonized North American CLT product standard, *Standard for Performance-Rated Cross-Laminated Timber (ANSI/APA PRG 320)*, has been developed by the ANSI/APA CLT Standard Committee and published in December 2011 (ANSI, 2011).

The ANSI/APA PRG 320 standard has been approved by the Structural Committee of the International Code Council (ICC) for the **2015 International Building Code (IBC)**.

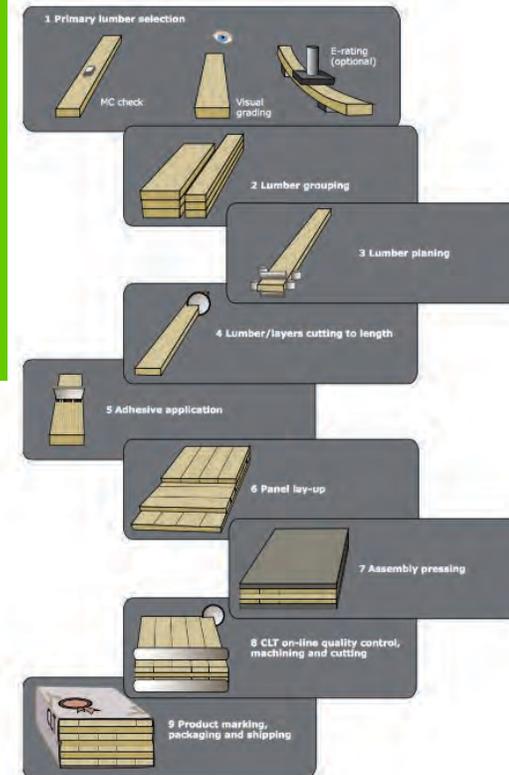


CLT Basics

- Structural engineered wood product
- Consists of several layers of kiln-dried lumber boards stacked in alternating directions
- Each layer with wood grain oriented perpendicular to the adjacent layer
- Bonded with structural adhesives
- Pressed to form a solid, straight rectangular panel
- Panels consist of an odd number of layers (usually, 3 to 7)

The introduction of CLT in North America is fairly recent, with the first manufacturing facility opening in 2011. As of late 2015, four CLT manufacturers were operating in North America.

As CLT becomes more widely adopted in the building codes of the various US jurisdictions, architects, engineers and contractors will see this innovative wood product as a viable and cost-effective alternative to existing building systems for residential and non-residential applications.



Key CLT Advantages

1

Cost effectiveness

A recent study by FPInnovations compared the cost of CLT versus certain concrete, masonry and steel building types. Excluding the installation time and foundation costs, CLT was found to be particularly competitive in mid-rise residential (5% less), mid-rise non-residential (15 to 50% less), low-rise educational (15 to 50% less), low-rise commercial (25% less), and one-story industrial buildings (10 %less).

2

Fast installation / Reduced job site waste

The fact that the CLT panels are prefabricated reduces the installation time on site compared to traditional building systems, which in return, reduces the capital requirements and results in faster occupancy. Advantages on the job site include a reduced demand for skilled workers and little waste since all panels are precut prior to assembly.

3

Environmental advantages

CLT manufacturing uses wood from sustainably managed forests. Wood is the only building material that grows naturally and is renewable, and it has a lighter carbon footprint, requires less energy to produce and results in less greenhouse gas emissions than other building materials like concrete and steel.

4

Thermal performance and energy efficiency

The precision of the CNC machinery allows for tighter fits for the CLT panels minimizing the airflow through the CLT panels and joints, and allowing for a better insulation and better energy efficiency for the structure. As a result, the heating / cooling cost for the finished structure is reduced to one-third of regular cost for buildings made of other materials.

5

Fire protection

CLT's thick cross-section provides valuable fire resistance because panels char slowly. Once formed, char protects the wood from further degradation.

Myths about CLT

MYTH #1 - It's wood , it will catch on fire !!



Actually, the char protects the CLT. It's like trying to start a campfire with a tree log! Mass Timber provides excellent fire resistance and unlike steel, it remains structurally stable when exposed to high temperatures

MYTH #2 – CLT is not environmentally friendly since we need to cut down whole forests to produce it!!

Wood products typically have less embodied energy, are responsible for lower air and water pollution, and have a lighter carbon footprint than other commonly used building materials. During the last 50 years, less than 2% of the standing tree inventory in the U.S. was harvested each year, while net tree growth was three percent.



Section

04

PLANNING



Project Description

1

Site Location

2

Facilities

3

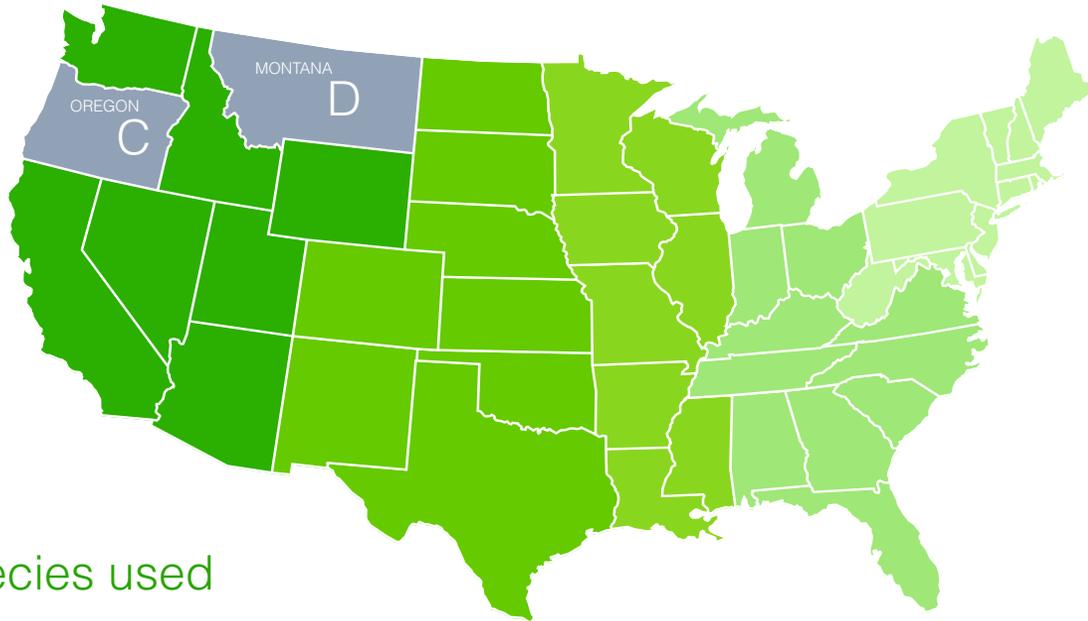
Raw material description

4

Project schedule

North American CLT Manufacturers

North America produces around 56,000 cubic meters a year



Species used

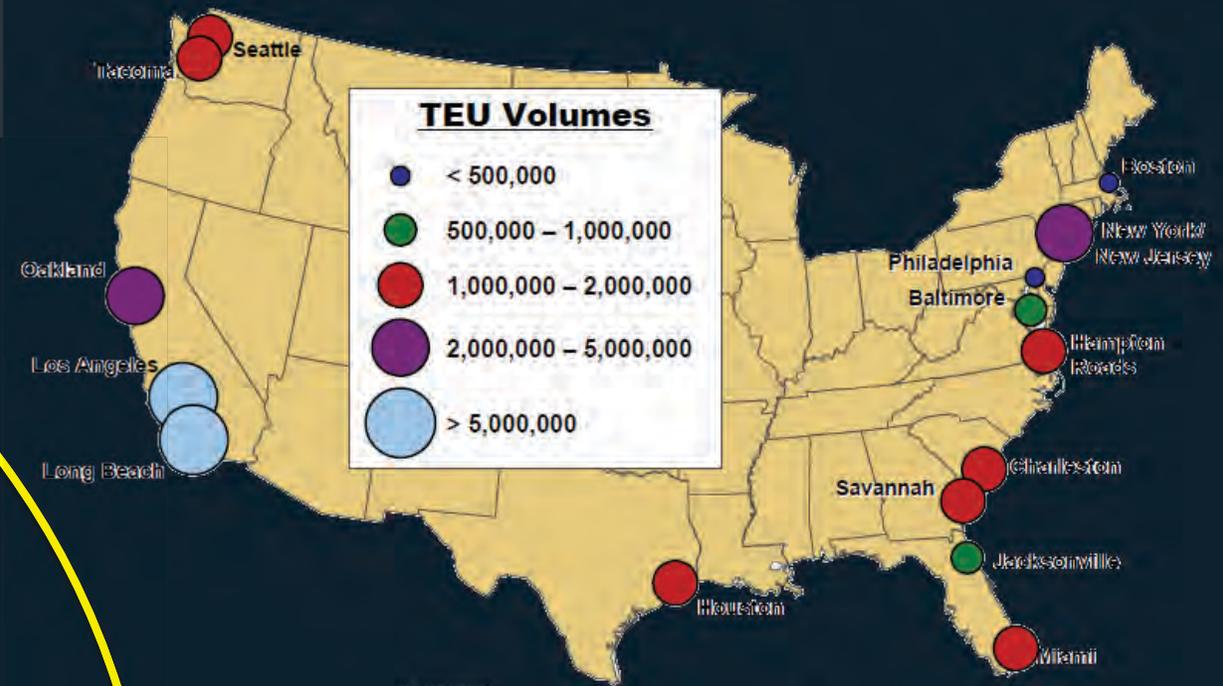
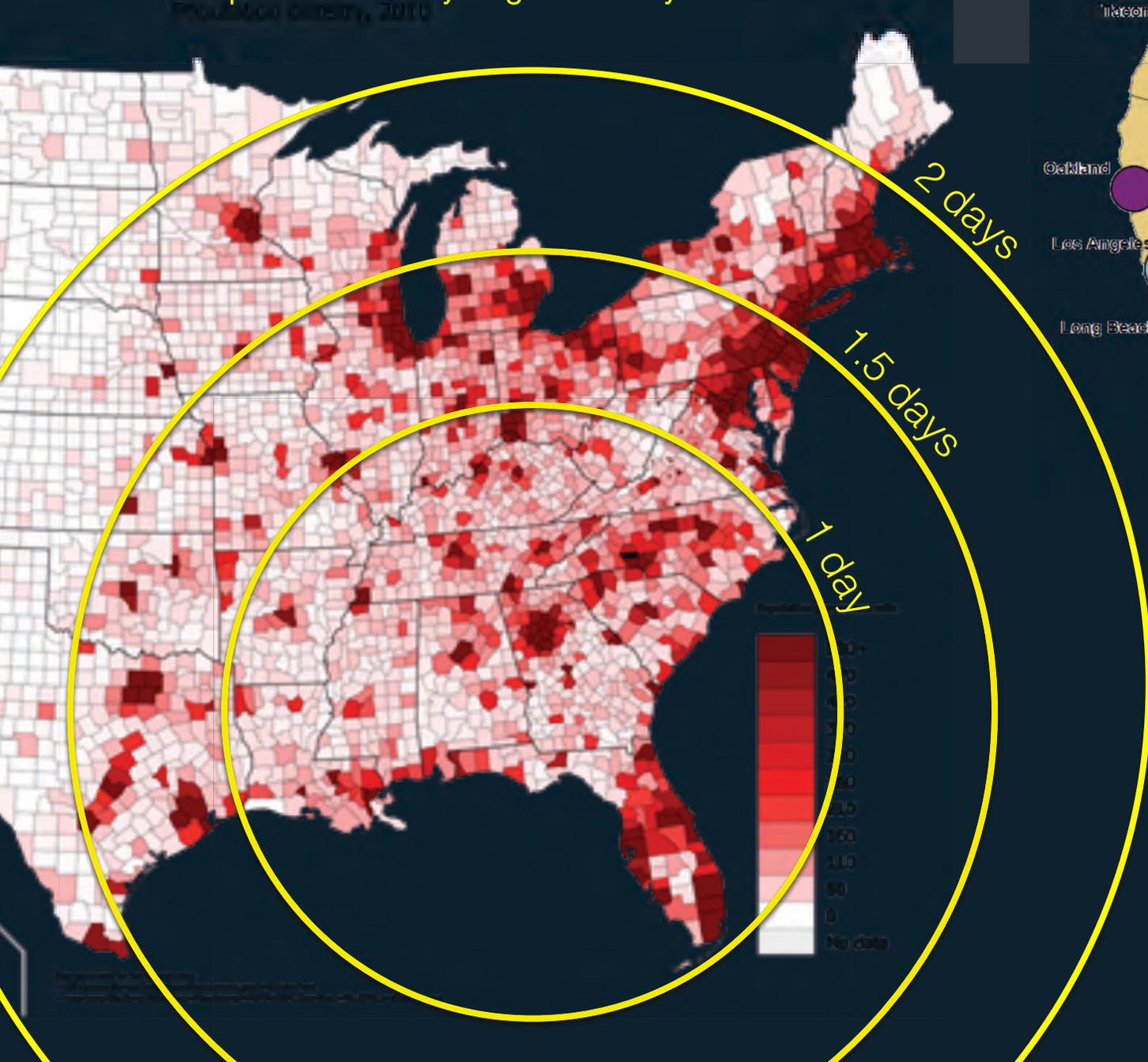
- A** Eastern Spruce
- B** Douglas Fir, Spruce, Pine, Fir, Alaska Cedar
- C** Douglas Fir, Port Orford Cedar, Alaska Cedar
- D** Douglas Fir, Western Larch, Englemann Spruce, Lodge Pole Pine, Alpine Fir



CLT Manufacturers

- A**
- B**
- C**
- D**

Population reach by freight truck days driven



- Distance to ports:
- Savannah 300 miles (480 km)
 - Miami 580 miles (930 km)
 - Houston 650 miles (1,050 km)

76.5% of US population in reach of 2 days road freight

More than 40% is less than 1 day away

Using Southern Yellow Pine for CLT

The Southern Yellow Pine (SYP) group consists of four main species — shortleaf, longleaf, loblolly, and slash. Recognized for its strength and density, lumber design values for SYP are the highest of all softwood species commonly used in structural applications. SYP has long been the preferred species for pressure treatment because of its unique cellular structure that permits deep, uniform penetration of preservatives. Southern Pine offers a distinct grain pattern and an appealing golden color. Because of this natural beauty, exposed Southern Yellow Pine provides architectural appeal.

Key advantages of using Southern Pine



Green Building Material

Southern Pine forests are some of the most productive and sustainable timberlands in the world, capturing large amounts of carbon from the air and storing it in lumber used every day. Southern Pine is grown and manufactured in the Southern U.S., further improving local economies, reducing transportation costs and minimizing impacts on the environment.



Cost Savings

Wood products are the most cost-effective building material on the market. Southern Pine is competitively priced because of an abundant timber supply, manufacturing expertise and established market preference.



Widespread Availability

Southern Pine is an abundant and renewable resource, growing in a vast band across the southern United States from east Texas to Virginia. These forests are in close proximity to hundreds of Southern Pine lumber manufacturing facilities, offering ready availability to major markets.



Proven Quality

Southern Pine lumber is graded in accordance with the Southern Pine Inspection Bureau (SPIB) Standard Grading Rules for Southern Pine Lumber.



Best Treatability

Southern Pine has long been the preferred species for pressure treatment because of its unique cellular structure that permits deep, uniform penetration of preservatives. 85% of all pressure-treated wood produced in the U.S. is Southern Pine.



Highest Density

Southern Pine has the highest specific gravity of all common structural lumber species, providing superior fastener-holding power and load-bearing capacity.



Comparable Strength and Stiffness

Design values for Southern Pine are comparable to other softwood species used in residential and commercial construction. Users can choose from a variety of visual grades and an increasing supply of mechanical grades providing a wide range of dependable strength and stiffness properties to meet the needs of any project.



Dimensional Stability

Southern Pine dimension lumber 2 in and less in thickness must be dried to a maximum moisture content of 19%. This minimizes shrinkage associated with green lumber and provides long-term stability.



✓ Alabama is No. 7 nationally in lumber production and No. 8 in wood panel production

✓ Forestry is Alabama's second largest manufacturing industry, ranking No. 1 in the U.S. in pulp production and No. 3 in paper production.

✓ Timber expansion in the state outpaces removals by 34 percent.



✓ Alabama sports 1,400 tree farms with 2.2 million acres certified under the Tree Farm program.

✓ Exports of forest products average 1.2 million tons annually. More than 90 percent of Alabama woodlands are privately owned.

✓ Forest products are second only to coal as the leading export commodity at the Port of Mobile.

Dothan, ALABAMA

CLT Manufacturing Site Considerations



Economy

\$13 Billion Annual Industry



Industry

650 Forest Product Companies



Lumber Supply

22.9 Million Acres of Forest



Energy costs

Average Electricity Rate for All Sectors 9.37 cents per kWh – 21st lowest in the US



Transport Access

RAILROAD
Chattahoochee Bay Railroad
U.S. HIGHWAYS
US-84, US-231, US-431
PORT
Mobile, Alabama



Workforce

47,000 Employed Skilled Labor Force

Forestry and wood products have historically been a major industry for the state. For this reason, there are many laborers in the state who are trained for these particular jobs. Additionally, workers can receive higher training through forestry-specific programs like the Alabama Center for Paper and Bioresource Engineering and Natural Resources Management & Development Institute.

Manufacturing Facility

LOCATION

1371 Hodgesville Road, Dothan, AL

LAND

Plant Site: 36± acres
Excess Property: 48± acres

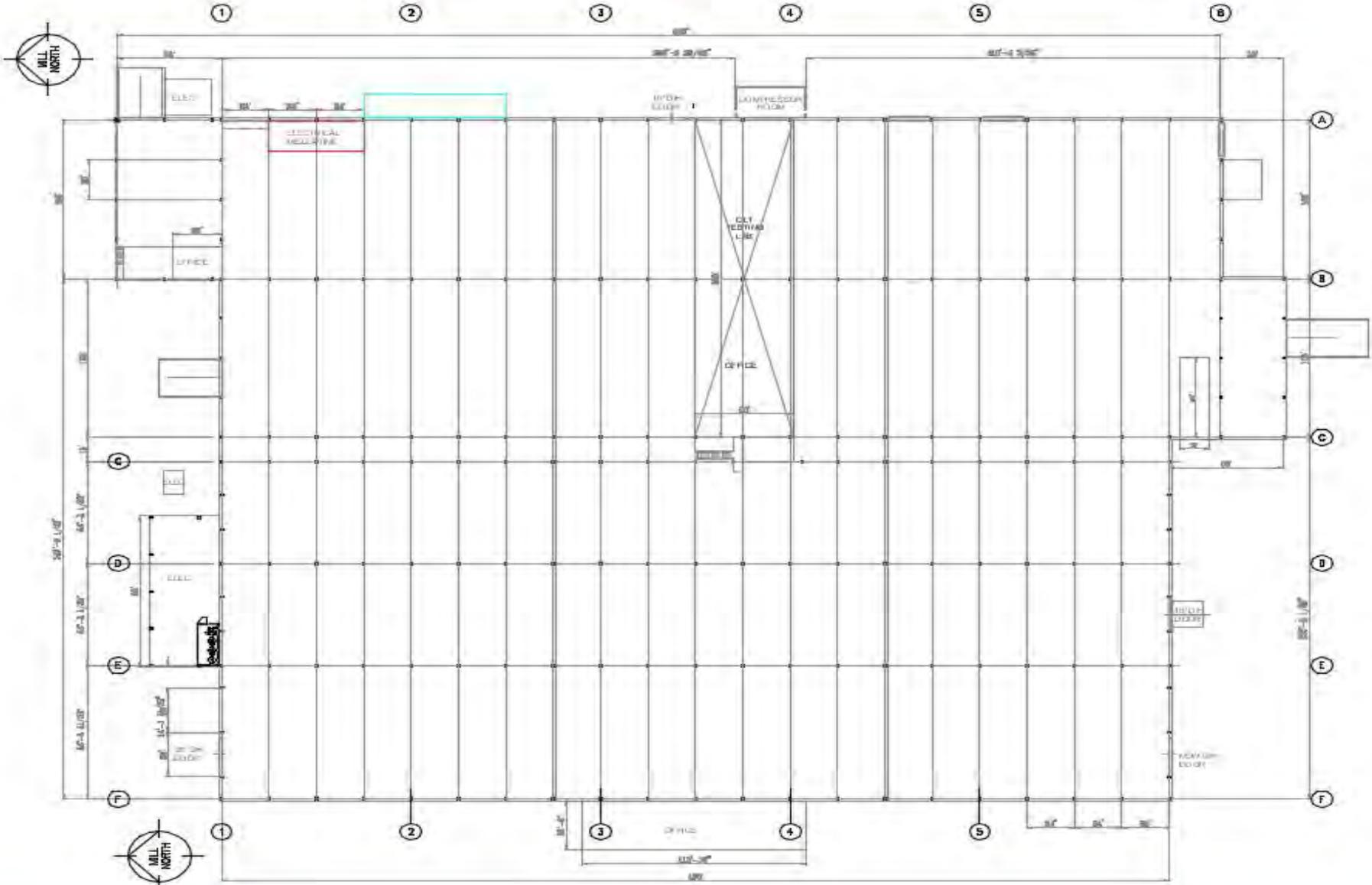
BUILDING SIZE

227,400± square feet total
3,600± square feet main office
4,800± square feet plant office



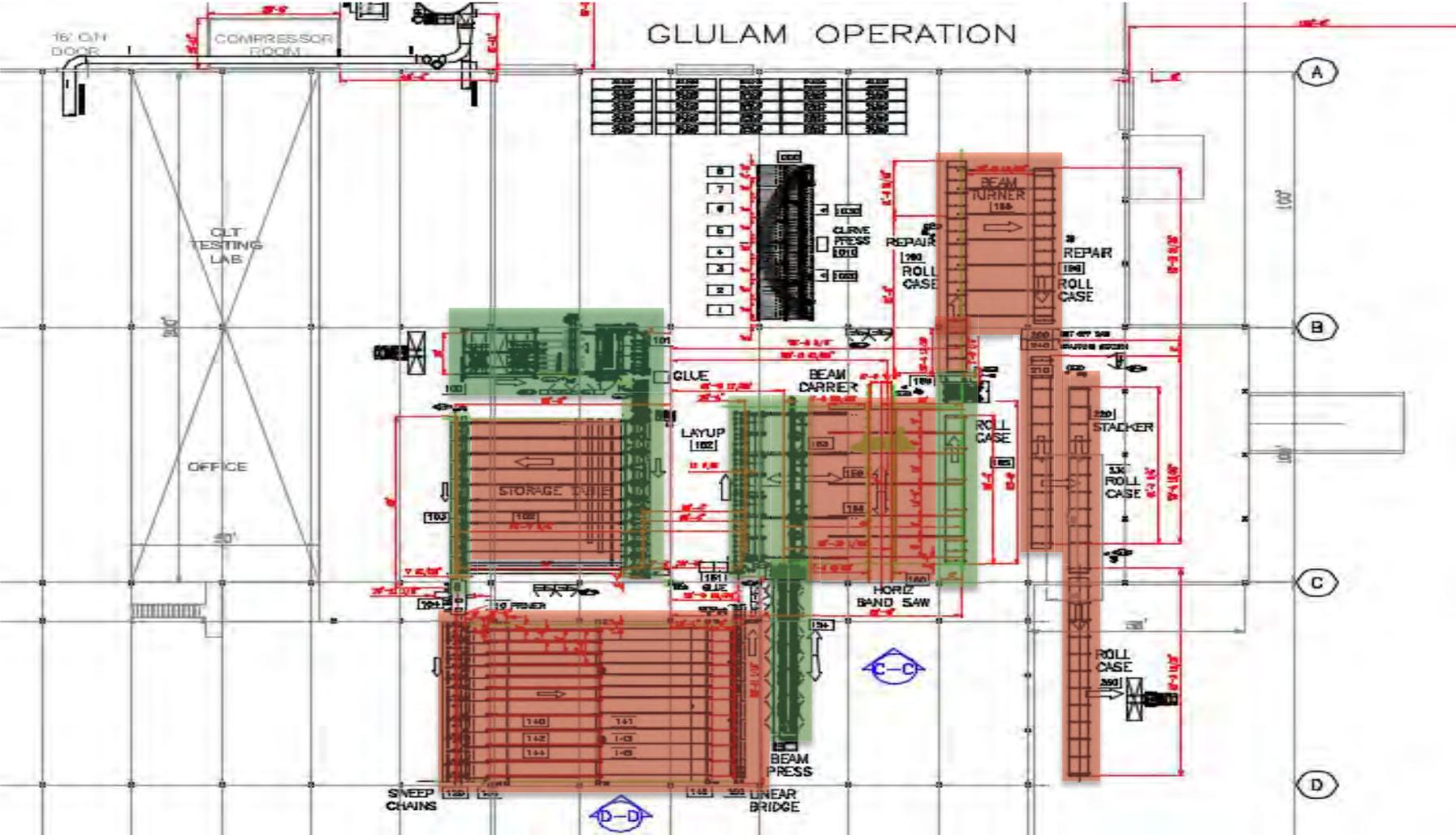
Property Specifications	
Fab Building	23,000± square feet, no utilities in place
Construction	Structural steel, metal walls, white membrane roof over bar joists, 5" to 6" foundation
Ceiling Heights	42'± and 25'±
Electrical	7,800 Amps/480/277 Volts, no internal distribution other than to lighting and mechanical
Loading	(5) Dock doors / (9) Drive-in doors

Plant Layout



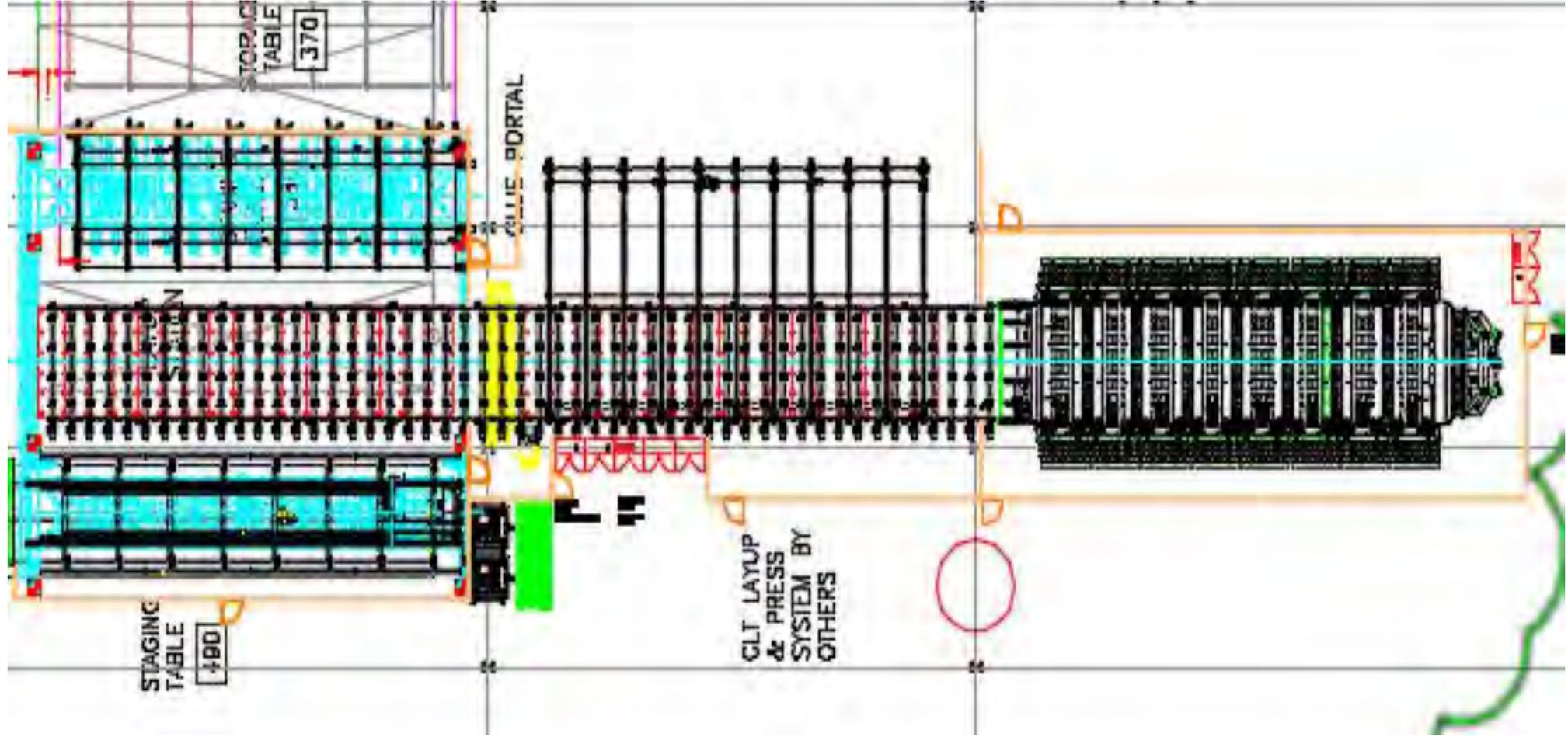
Plant Layout

Fingerjoint line



Plant Layout

LEDINKE CLT assembly line

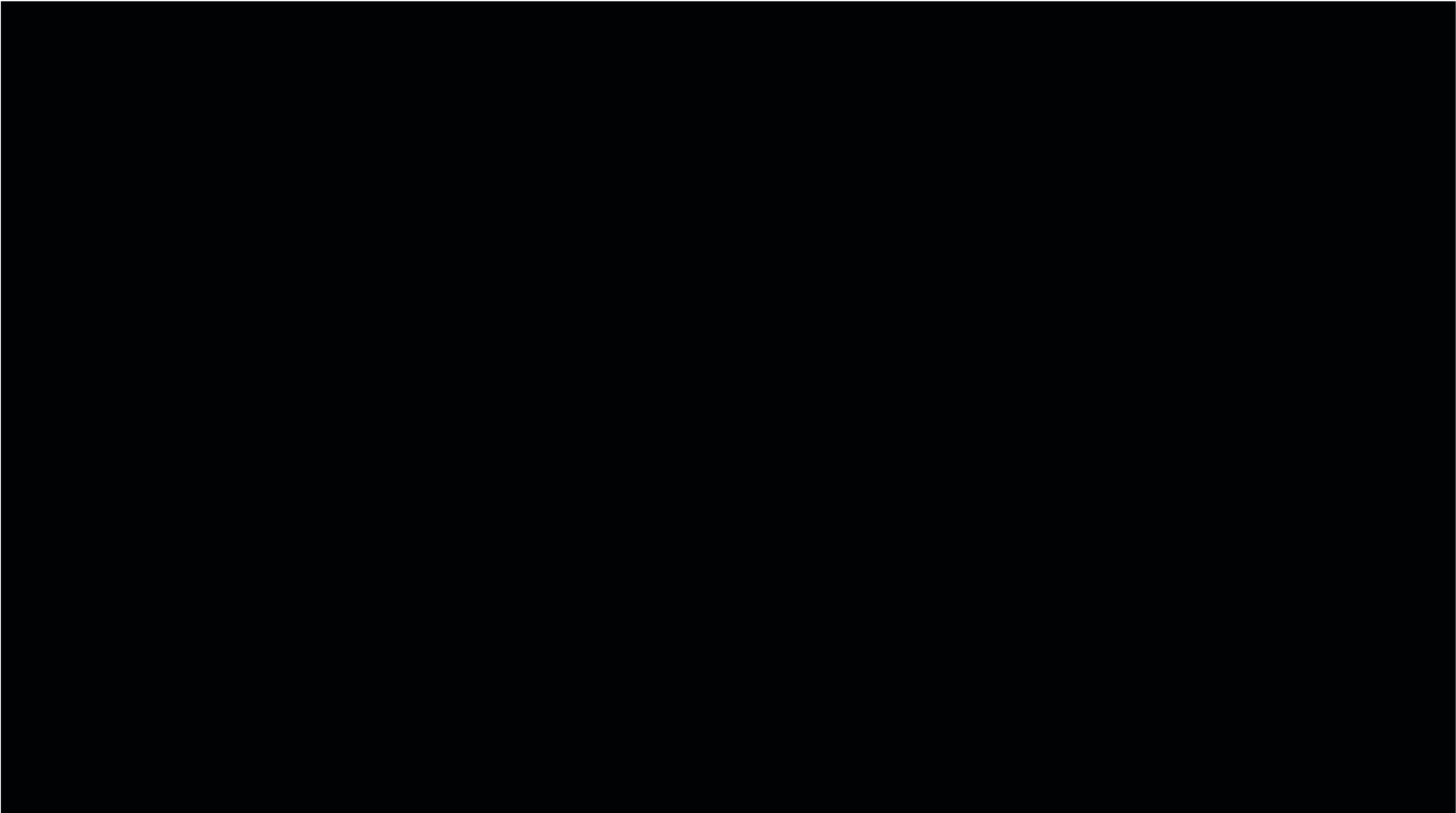


Long Lamella Vacuum Layup Table



Cross Lamella Vacuum Layup Table



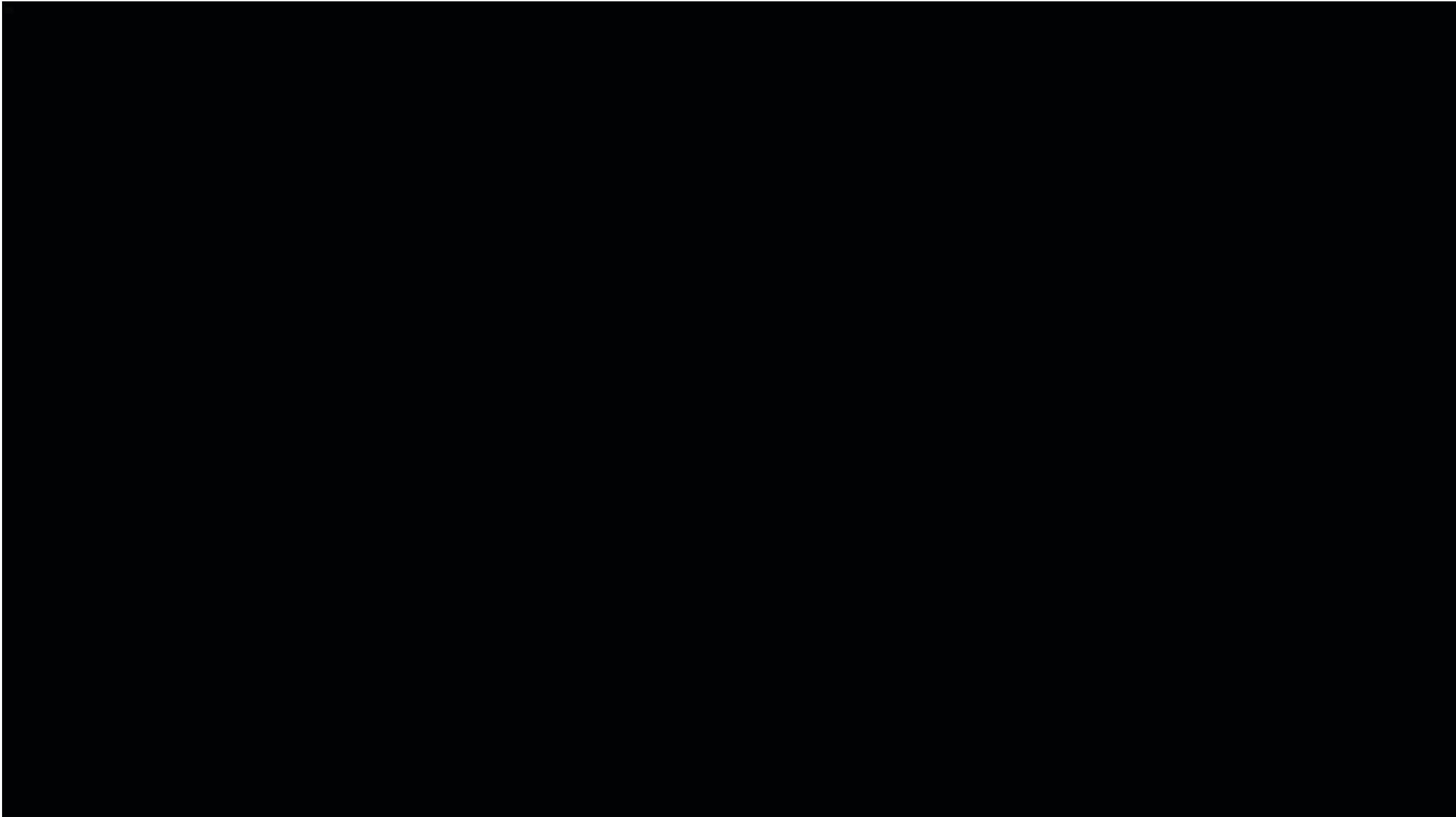


Ledinek X-Press



Uniteam EXTRA BM3 Portal CNC

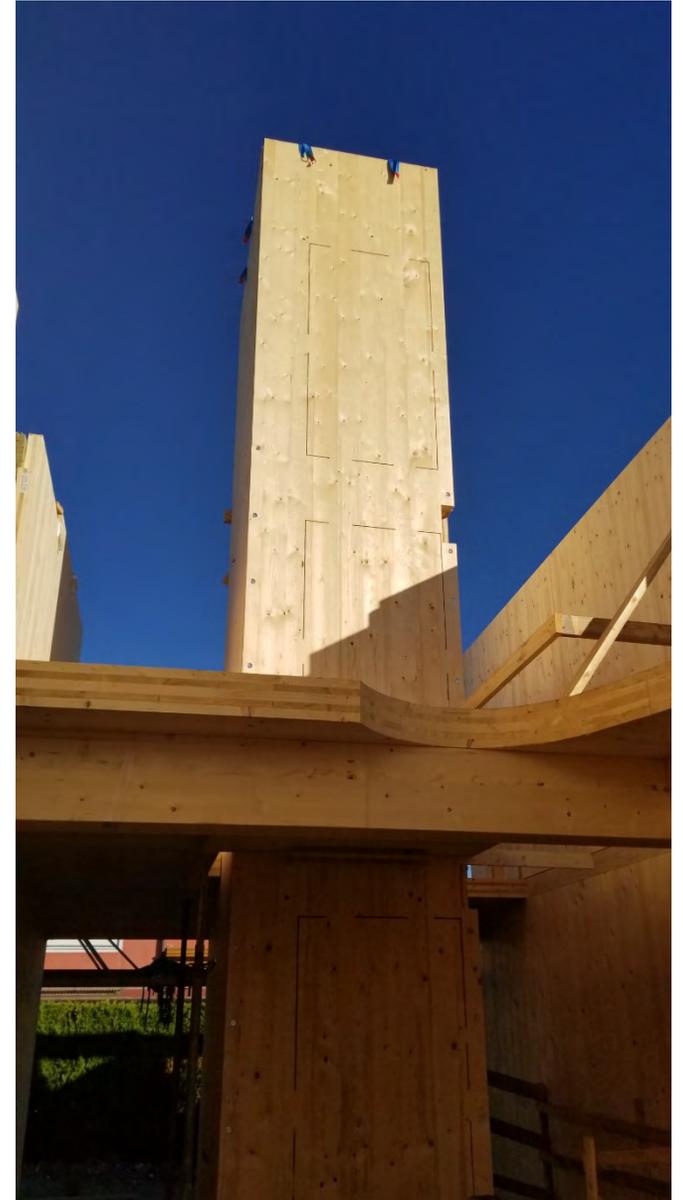




Uniteam EXTRA BM3 Portal CNC



JOB SITE USAGE





Section

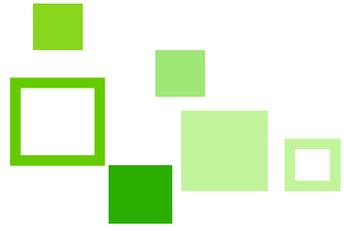
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News



AUBURN
UNIVERSITY

- On February 24, 2017 International Beams signed an agreement with Auburn University. This partnership will give access to vast research and development capacities. International Beams is also proud to help create the future working force and thinking minds for the Massive Timber industry.
- On June 8th, 2017 International Beams became an official partner with KLH Massiv-holz, the pioneer of CLT manufacturing since 1999 and the world leaders in this field. This partnership will bring an immense amount of knowledge and experience, as well as a considerable advantage in the recognition of International Beams as the future leader in the development of CLT in America.



Thanks for watching
this



DOTHAN AL
CLT PLANT START
UP
PRESENTATION

