




Wofford College Environmental Studies Building Cross Laminated Timber

Mass Timber from a timber framer's perspective

Daniel Wirth
April, 2021
WoodWorks

A close-up photograph of a light-colored wood surface, likely pine or spruce, showing a prominent knot and a small hole. The wood grain is clearly visible, running diagonally across the frame. The text is overlaid on the wood, centered horizontally and vertically.

Our company and team are recognized as one of the most experienced CLT/Mass Timber installers in the U.S., with more than 25 years of experience in the international engineered timber industry. We are responsible for installing many prestigious and award-winning structures in the U.S. and Central Europe.

This presentation is intended for contractors and designers interested in the use of cross laminated timber (CLT) and Glulam's (GL).

Unlike some traditional wood products, interaction with the product manufacturer, on elements such as 3D building models, building shop drawings and installation sequencing in liaison with logistics is paramount for a economically and timely successful project outcome.

Parameters of site work and pre con

- Feasibility of designed connection details
- Interface between the design team and manufacturer
- Highlight keys to successful project delivery from drawing coordination to lead time
- Including install sequencing and delivery schedule in the overall on site time
- Equipment, platform- and scissor lifts, hoisting (crane and forklifts)
- Comparing with similar projects in the past

- Include “a” manufacturer in your planning
- Prepare yourself with questions about common practice etc.
- What are the manufacturer’s capabilities in terms of volume of certain sizes and diameters

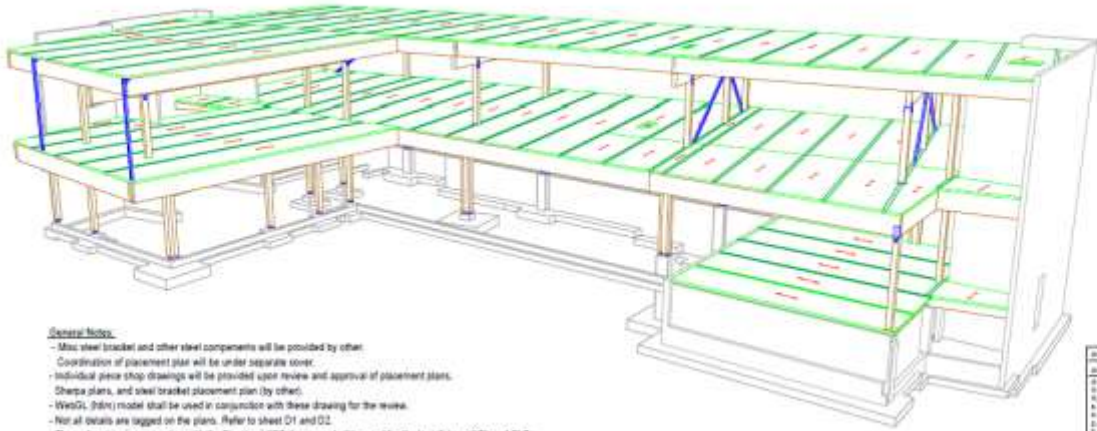
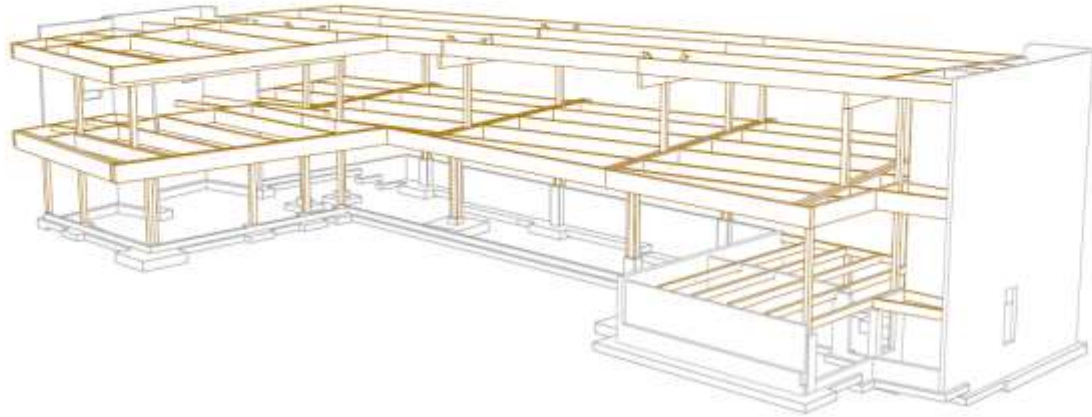
PROJECT LOCATION



THE IDEA



WOFFORD COLLEGE ENVIRONMENTAL STUDIES BUILDING
 Spartanburg, South Carolina
 GLU-LAM AND CLT SUBMITTAL



General Notes:

- Misc steel brackel and other steel components will be provided by other.
- Coordination of placement plan will be under separate cover.
- Individual piece shop drawings will be provided upon review and approval of placement plans.
- Shop plans, and steel brackel placement plan (by other).
- WersG (3dix) model shall be used in conjunction with these drawing for the review.
- Not all details are tagged on the plans. Refer to sheet D1 and D2.
- These drawings in conjunction with the Structural A/E/C drawings shall be used for the installation of GL and CLT.

NO.	DESCRIPTION
01	Site Work
02	Foundation
03	Structural Steel
04	Roofing
05	Interior Partitions
06	Exterior Walls and Windows
07	Interior Walls
08	Interior Ceilings
09	Interior Floors
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THE PROJECT

SHOPS DEVELOPMENT

- Coordinating with other trades:
 - Glulam manufacturer
 - Steel fabricator
 - Mechanical/Electrical/Plumbing
 - Concrete- Extremely important!
 - Concrete foundations must be square and level
 - Contractor performs foundation survey
 - As built dimensions



SHIPPING & LOGISTICS



- Legal load verses over-dimensional load
- Loading sequence & installation sequence
- Picking off of the truck or staging onsite
- Truck holding time
- Crane time

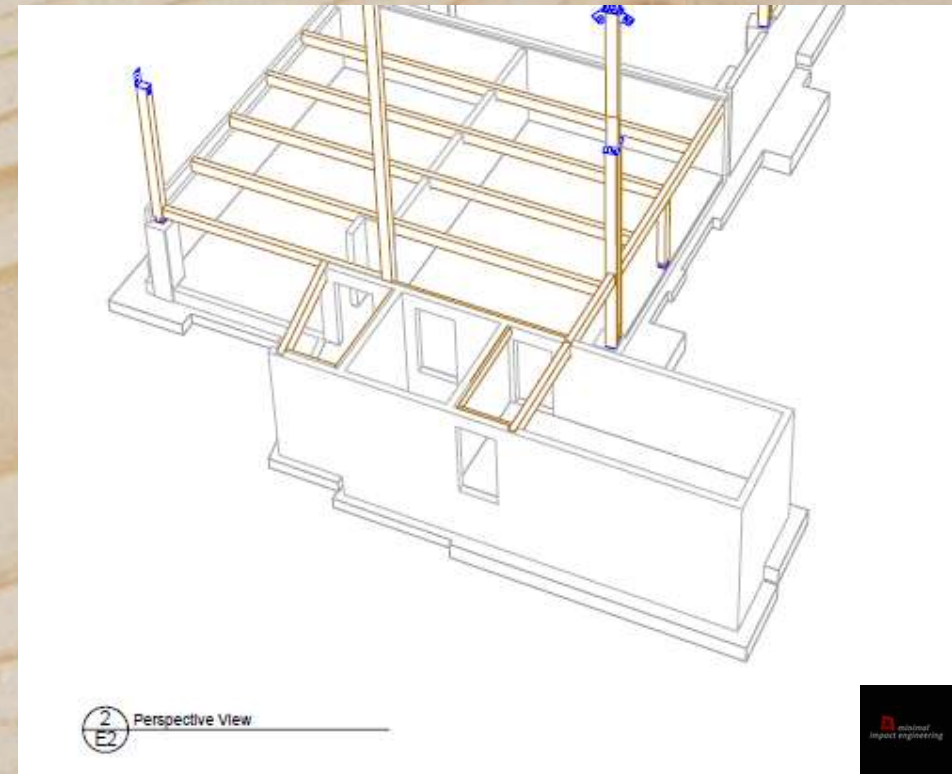
SHIPPING & HANDLING



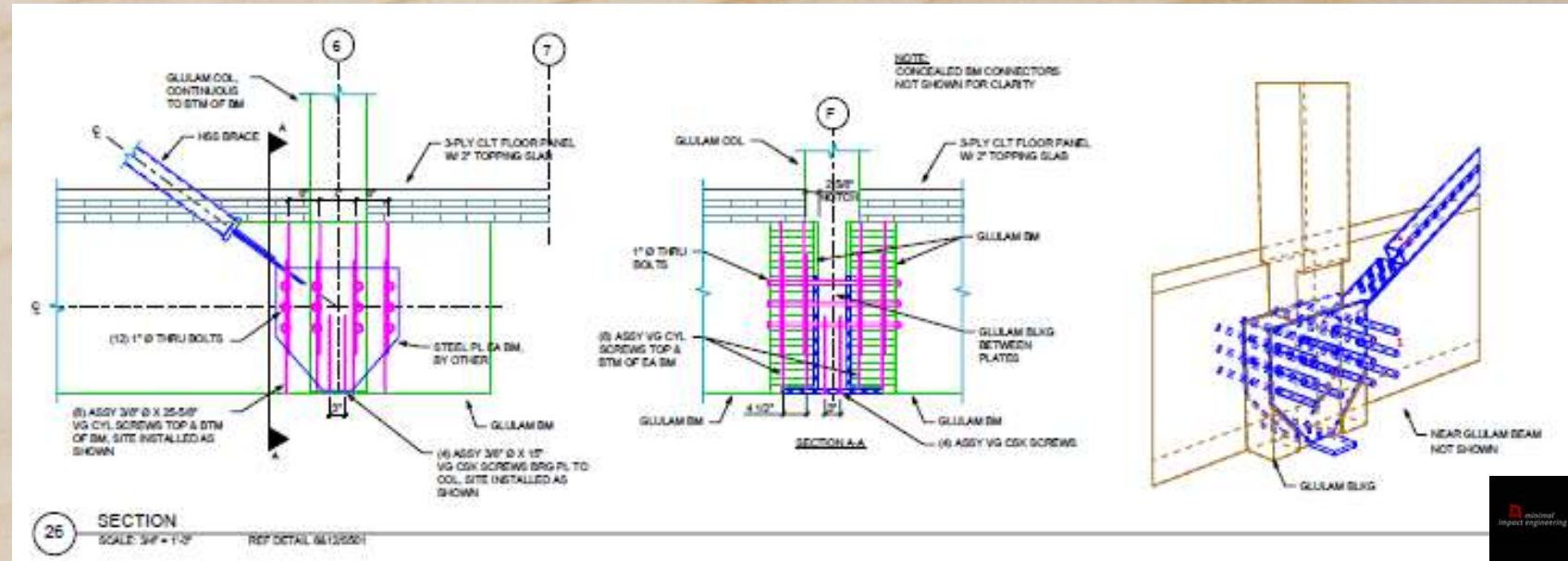
Layout and hold-downs



Constructability



Constructability theory and real life















UNDERSTANDING CLT INSTALL COST

- Who is my panel supplier?
- What are the most common sizes of manufacturer?
- Familiarize yourself with connection details, especially Glulam to Glulam
- Who is supplying add fasteners
- All steel, custom steel brackets in your scope or the manufacturer's? (by other?)
- Foundation hold-down bolts surveying, who's scope is that?
- Perimeter railing, safety railing, what are the local requirements?
- Crane location depending on panel size and weight
- Truck unloading zone in relation to crane location etc.

CLT COST

- How do I get the most bang for my buck with CLT? (Cont.)
 - Pick a manufacturer that checks all of your boxes
 - PRG-320 certification
 - SFI Chain of Custody certified/FSC Chain of Custody certified *if required*
 - Sound testing
 - Fire testing
 - Wood species
 - Services
 - Location
 - Lead time/Availability to produce and deliver on your timeline
 - Design for that manufacturer's most efficient panel size



Photo courtesy Simplehapa

QUESTIONS?