Q. What is MPP (Mass Plywood Panels)?
A. MPP is a patent-pending, veneer-based engineered wood product developed by Freres Lumber Co. MPP is a Mass Timber Panel assembled by combining extremely thin layers of Douglas Fir veneers, which are densely layered together, creating a large-format wood platform that may be engineered to exact specifications and cut with advanced CNC technologies. MPP is strong, fire-resistant, and lighter per volume than traditional building materials such as concrete or steel.

Q. Are 4X8 sheets of plywood used to make MPP? In what thickness?
A. Although its name may suggest otherwise, the MPP is composed of 1” layers of Structural Composite Lumber (SCL), a veneer-based engineered wood product certified under ASTM D5456. Unique SCL layups allow the Mass Timber Panel to be constructed with stability across both axis of the panel.

Q. What dimensions can MPP be provided in?
A. MPP is extremely versatile. While it can be cut to almost any shape and size, and with required joints, the raw panel size is limited to 12’ wide by 48’ long by up to 24” thick. MPP products can be used for almost any structural wood element in a mass timber building. Current operations limit cut panel thickness to 12”, although plans are in the works to allow processing up to 24”.

Q. How many layers of veneer are in a 12” thick MPP?
A. There are 108 veneer layers within a 12” deep MPP. We like to think of it as 108 layers of versatility to create the appropriate panel for your needs. Each veneer layer can be engineered by density, orientation and grade, allowing flexibility for every panel.

Q. How will MPP be used in construction?
A. Freres MPP can be used as pre-fabricated timber panels to allow rapid construction on multi-story structures. MPP is also available in thicknesses as thin as 2”, potentially allowing cost effective use in single-family residential structures. While current PRG-320 certification allows for the current use in plank orientation, in the future we anticipate the use of MPP for columns, beams, floors, roofs and walls.

Q. How do you measure its strength?
A. We have APA Product Reports for our SCL products as well as our MPP products. Product design values are listed within the product reports. Typical measures of product strength are stiffness, moment capacity and shear. These values have all been established in the product report. Please visit www.apawood.org to view the product report and design values. Note that as additional testing is completed more product reports will be added to our product list.

Q. What tests has Freres done on the integrity of MPP?
A. Freres MPP products have been subjected to rigorous product testing. The APA has performed extensive testing to certify our products under ASTM D5456 and PRG 320. However, we are also working to establish design values outside those required by those standards with partners at Oregon State University, The Tallwood Design Institute and other labs across the country. These tests include:
   - cyclical loading
   - monotonic loading
   - compression
   - acoustics
   - fire testing
   - seismic performance and impact

Q. What is Cross Laminated Timber (CLT)?
A. CLT is a type of Mass Timber Panel constructed of either machine graded or visually graded dimensional lumber typically consisting of odd layers of dimension lumber oriented perpendicular to one another and then glued to form structural panels.

Q. How is MPP different from CLT products?
A. MPP uses veneer as the primary raw material to create an SCL panel, which is then used to create a Mass Timber Panel. MPP can be engineered to be as strong or stronger than a CLT of equivalent thickness. Each veneer is electronically graded, and the use of veneer effectively distributes and reduces the effect of defects such as knots. As a result, the panels have a more predictable performance than lumber-based products.

Q. How strong is MPP compared to CLT?
A. The minimum design values for MPP exceed the minimum design values of E2 CLT defined by PRG-320 in each comparable thickness in the major force direction. E2 CLT is the most comparable grade of CLT in terms of engineering and species that we have to compare to MPP.
**Q.** What made you think of this design? Why is this product necessary? What hole in the market are you filling?

**A.** Freres Lumber has invested more than $35 million in the development of the MPP product and the construction of its state-of-the-art production facility. In addition, employees and managers have invested an extraordinary amount of time and effort into building this product from concept to reality.

**Q.** What was your biggest obstacle in developing MPP?

**A.** The idea for MPP began in the summer of 2015. It has taken three years, but a significant time and effort, to bring the first MPP facility online.

**Q.** The biggest obstacle we have faced is that Freres is blazing a trail that no one has walked before. It has been a trial every step of the way. Being the first product to blaze the trail, we have leveraged all of our relationships and partnerships to create the product.