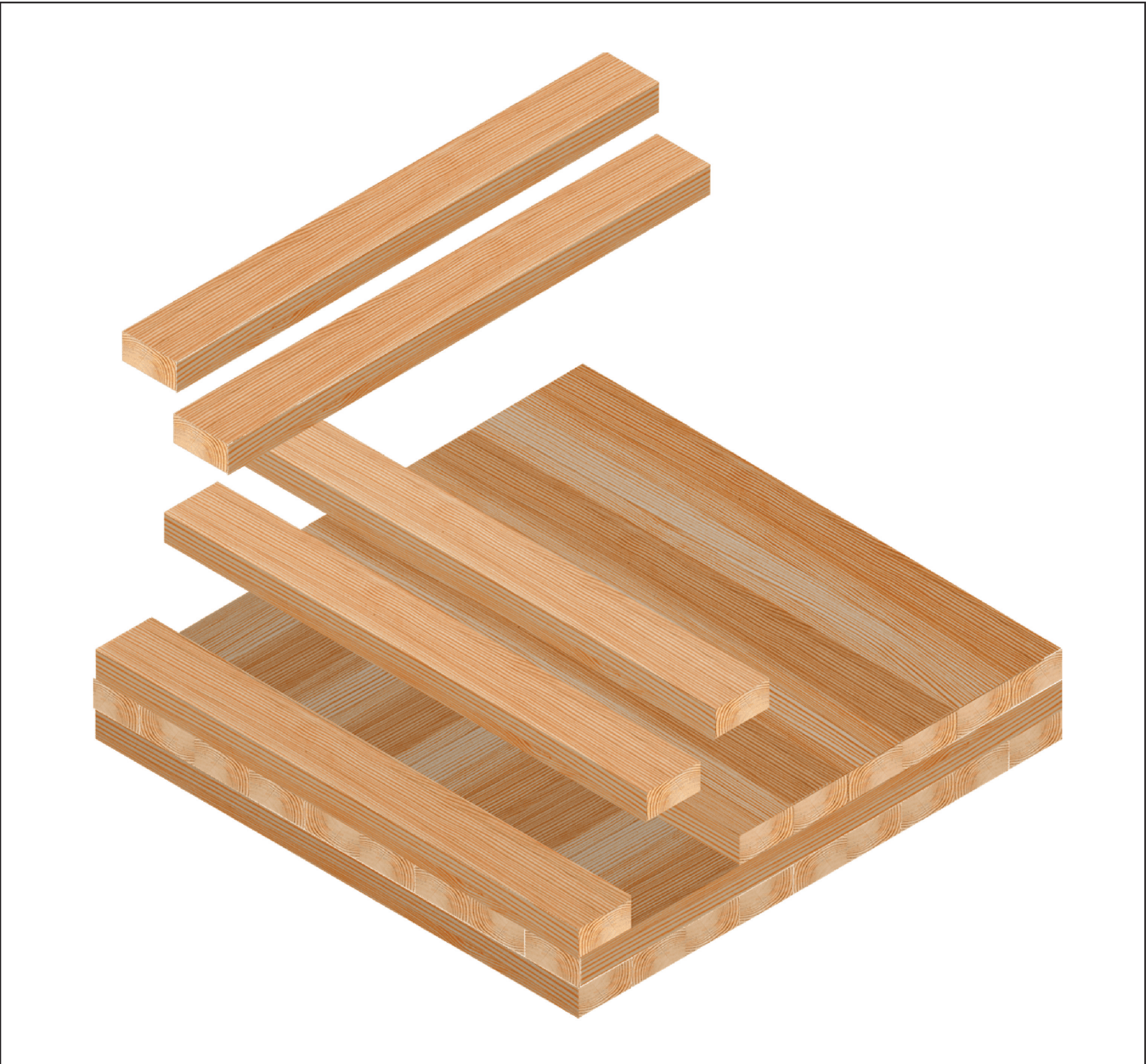


CLT System Furniture

Cincinnati, Ohio

Using Sustainable Material Castoffs: Cross Laminated Timber



Cross Laminated Timber is a new way of using 2x6s that allows it act like a stonger material like concrete, making it suitable for using for large spans in buildings including walls and floors instead of another material. It is made by layering rows of 2x6s in alternating directions in three, five, or even seven ply.

This material is better because it is pre-fabricated off the construction site, keeping disruptions and waste associated with working on a construction site down.

It also saves on labor costs. Less appealing looking 2x6s can also be used to make CLT by sandwiching them between the outer layers of prettier wood. Wood is a much more sustainable resource than concrete too, just by a factor that is renewable.

However, using this material does leave off-cuts because CLT is fabricated in panels and door and window holes need to be cut out for a functioning building to exist. This project aims to repurpose these castoffs and make this material even more sustainable.



Common Sense Design: Material Inspiration and System Creation

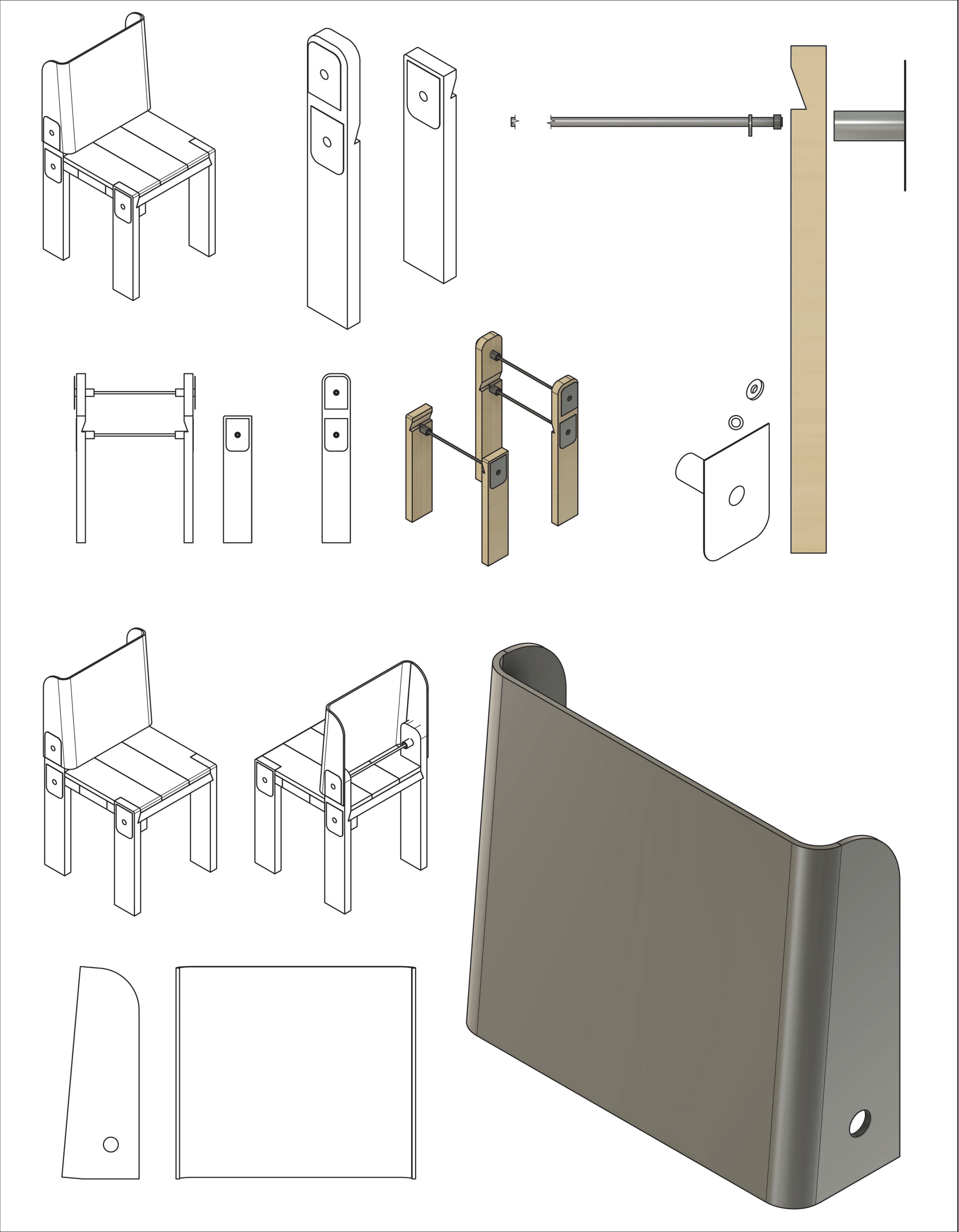


Cross Laminated Timber and its hardware (seen above) served as the inspiration for the look and feel of the chair and the larger system of furniture. The principles of Common Design were used in the designing of this product. The goal was to create a system of furniture that would feel at home in a home made of CLT and its industrial hardware while also making use of the off-cuts that are a natural result of the use of the material.

Steel and other metals are featured in the design as the back of the chair, hardware, and stretchers alongside the repurposed off-cuts in the seat and legs.

The goal of this project is to make the physical chair shown in the design on this poster but also to have a system of compatible furniture also using the off-cuts. The core of the system are the legs and stretcher and plate hardware. The legs secure onto the base of the furniture through dovetail joints. A steel plate braised to a pipe intersects the leg as well, and a washer is braised to the inside of the pipe. With two facing legs, there is a threaded rod going between them and through the holes in the washers on both sides. A knut is screwed down on both sides of the threaded rod to create tension to prevent the furniture from racking.

The ends of the pipes line up on the inside of the body of the furniture. The flat vertical side of the plate is rotated to be parallel and closest to the plane of the seat. The back of chair is designed to be made out of aluminum to be lighter, and it be featured in other furniture in the system. Screws put into the legs will keep the plates from moving.



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