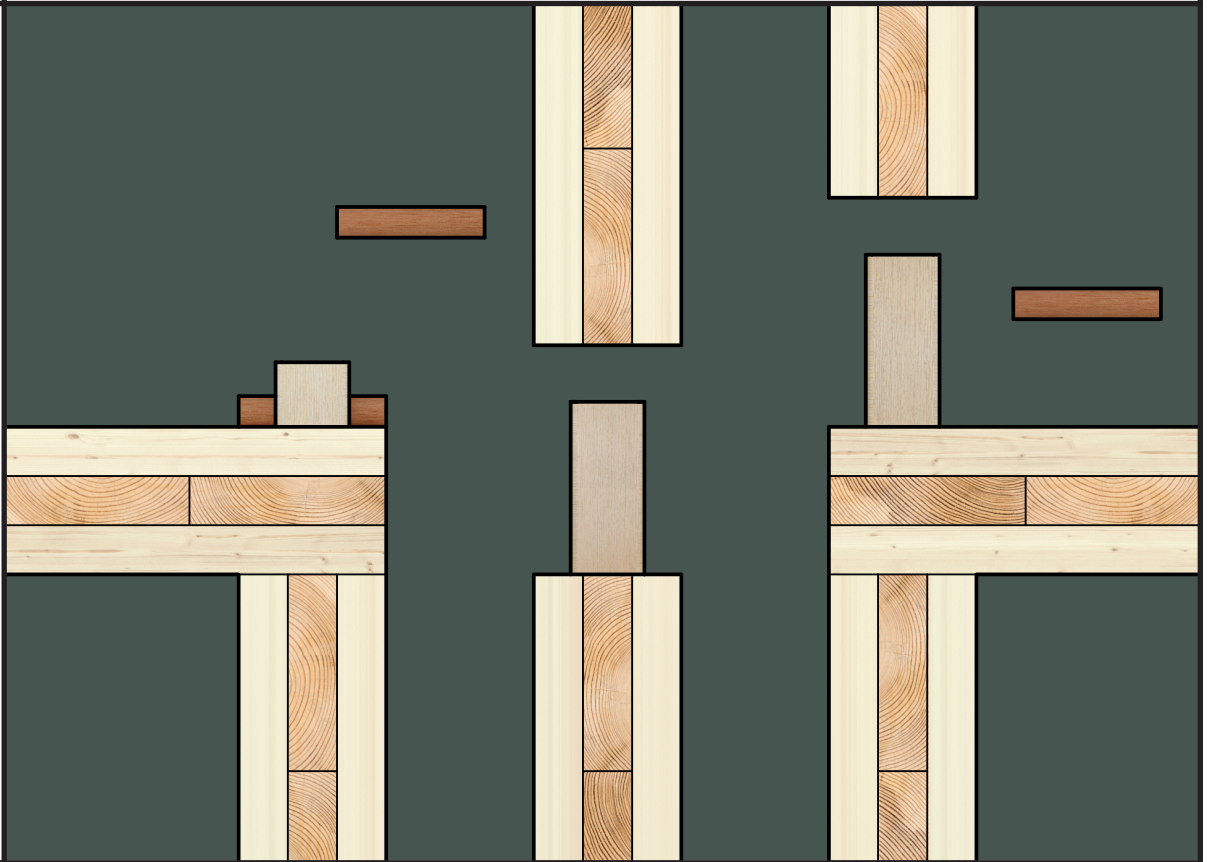


JOHAN WALL

## WOOD WORKS



An innovative system of wood connections, originating in state-of-the-art circular design principles and traditional joinery craftsmanship, is developed for a structural system of engineered wood products. The joinery system is an architectural exploration aimed at demonstrating how timber structures could be assembled to facilitate easier deconstruction and increase the reuse potential of structural components.

This circular approach to timber design is a response to the building industry's linear and non-disruptive state of affairs which results in significant negative climate impact and geophysical catastrophes as consequences. The linear production process defining the building industry is unsustainable and a direct contradiction to our shared vision of a circular future. These challenges are becoming increasingly recognized around the world, but the building industry is moving slowly, and Sweden is no exception.

The way we use resources for constructing our built environment results in a fine-tuned and highly efficient method for producing unmanageable amounts of greenhouse gas emissions and mountains of waste. We must transition to a circular design process which better utilizes resources – fossil as well as renewable – and enables reuse of processed building components. As being a significant part of the problem, the industry is also a significant part of the solution.

This thesis identifies the climate crisis and related sustainability challenges along with reports on methods for counteracting the current downward spiraling course of action. A substantial design solution is demonstrated which performs according to principles of circularity and utilizes both innovative and traditional technologies for refining wood.

### Keywords:

Architecture, Circular Design, Engineered Wood Products, Joints, Timber Structures, Wood Innovations.

## HOUSING

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