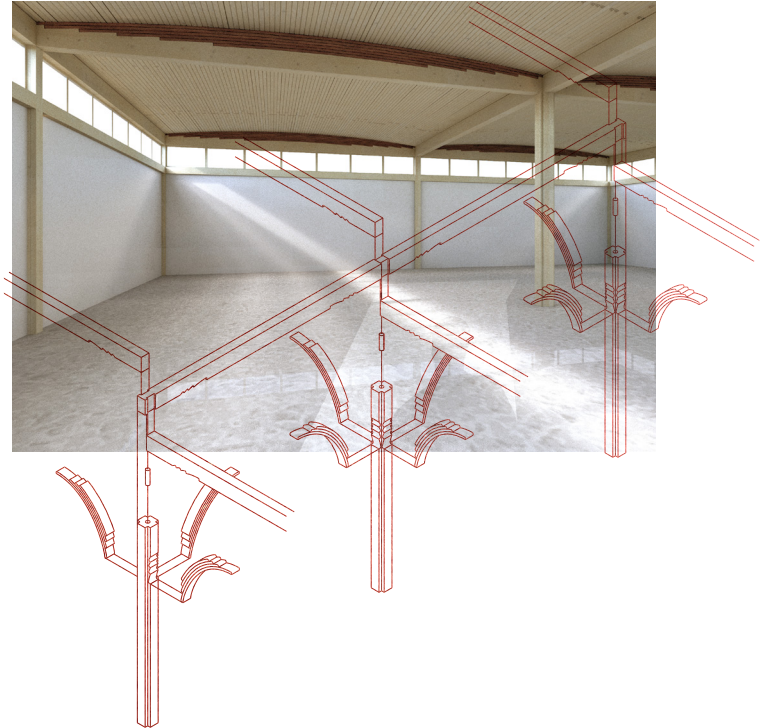
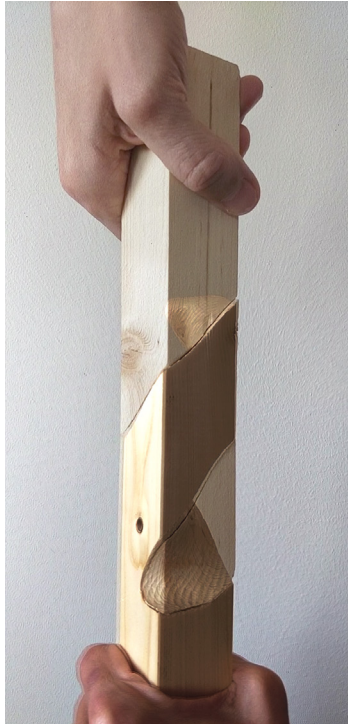


MARKUS GUSTAFSSON

## CRAFTSMANSHIP BY MACHINERY



### MATTER SPACE STRUCTURE

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This thesis is an investigation into how to reinterpret vernacular wooden joints, where craftsmanship is replaced with computerized tools, for modern building techniques in a Swedish context.

The industrial revolution changed the role of the craftsmen. The need for handcrafted joinery were no longer needed with the introduction of new materials and fabrication methods. Wood was also replaced as the primal go to material, for tools buildings etc. The old profession, with the deep knowledge of wood and wood joinery was forgotten. The iron bridge, built 1781 by Abraham Darby the third, marks an interesting turning point. The bridge was built with the new material cast iron but with traditional wooden connections, since Darby did not know how to design in the new material. Today we use wood at a higher rate again, but as CLT we treat it as a monolithic material to be used with monolithic building systems.

Looking at historical wooden buildings the connections are expressive and a visible part of the whole. The structural logic of the building can be read and the precision of the connections give the buildings structure an ensuring impression. To be able to implement the building methods of old in modern building environment computerized tools is the only realistic path, due to higher labour cost. With the help of digital

machines the precision required can once again be reached and the forgotten art of joinery can even be developed further.

By looking at history, with the aid of modern digital tools and machines, this thesis hopes to contribute to the reinvention of traditional joints and help shape a new design language more appropriate for the material wood in our current context.

**Keywords : Detail, Joinery, Wood, Tradition, Computational, Robotics**