



Against the Grain: Redefining the Living Unit – Advanced Slotting Strategies for Multi-Storey Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue795>

Author: Kaiser, Alex
Larsson, Magnus
Girhammar, Ulf

Year of Publication: 2014

Country of Publication: Canada

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Design and Systems

Keywords: Manufacturing
Multi-Storey
CNC

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

Summary:

Using Charles and Ray Eames’s famous 1950s House of Cards slotting toy as both design metaphor and structural precedent provides the starting point for a novel building logic (utilising three existing Swedish timber systems) that allows volumetrically slotted units to stack inside of and support each other. Contemporary computer-aided fabrication techniques based on evolutionary algorithms and CNC manufacturing strategies are used to produce a methodology for designing a kit-of-parts system at the scale of the skyscraper, based on the slotting together of cross-laminated timber (CLT) panels. A catalogue of novel slotting methods is produced, and a number of alternative slotted joint treatments identified that hold promising potential for further development, parametrically design and control volumes, understand the fabrication workflow and constructional sequence on site, and build prototypes of the chosen slotting configurations at scales ranging between 1:50 and 1:1.

Online Access: Free

Resource Link

<http://www.diva-portal.org/smash/get/diva2:1011815/FULLTEXT01.pdf>