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Multi-story timber frame buildings in Finland

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Every year, Finland's forests grow and produce more than 105 million cubic metres of wood and some 65 per cent of this is utilised. The utilisation of wood could be significantly increased (by approximately 20 million cubic metres per year) through, for example, use for bioenergy, for construction purposes, and in the wood-product industry. Residential buildings account for more than 65 per cent of Finland's building stock. The greatest potential for growth in wood construction lies in the building of multi story structures, public buildings, and hall-like buildings; energy-efficiency upgrades to the façades of existing suburban concrete blocks of flats; construction of additional storeys; and in-fill developments. Wood as a local, renewable, and environment-friendly energy source and construction material of domestic origin will be an increasingly competitive raw material. In Europe, Finland is second to Spain in the ratio of blocks of flats to population: some 44 per cent of all residences in Finland are in multi-story buildings. Concrete has dominated the multi-story building market for the past 60 years. Wood-based construction has undergone intense development in Finland since the early 1990s, through close co-operation with other EU countries. Development efforts have focused particularly on building of multi-story wooden buildings. According to the fire codes currently in force in Finland, residential buildings and office premises with a wooden frame and façade can be built to eight storeys. The cross-laminated timber (CLT) technique is becoming more common in multi-story timber frame buildings' construction in Finland.

Biography

Markku Karjalainen is an Architect (1988), D.Sc. (Tech.) (2002), Docent of timber construction and wood architecture (2008) and Associate professor (Architectural Construction) at the Tampere University of Technology (TTY), School of Architecture (2015 –). He has been advancing Finnish large-scale industrial timber construction (multi-story timber apartment buildings, wooden public buildings, wooden halls, and wooden bridges) full time for the past 20 years.

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