

CODE DEVELOPMENT RESEARCH ON MASS TIMBER

Speaker

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Abstract

Mass timber is attracting global attention among designers, contractors, developers and building regulators. While the number of tall wood buildings is gradually increasing, continued research is necessary to improve design efficiency, safety and economics of mass timber structures. Over the last 15 years, extensive research programs have been conducted in Canada to generate the required design specifications and construction technologies for mass timber systems. The most significant impact of these research programs has been the raising of the height limit from 4 to 18 storeys for timber buildings, with the latest increase from 12 to 18 storeys announced by the Province of British Columbia in April 2024. In this presentation, an overview of these research programs at Canadian universities will be provided. Selected research projects at the University of Alberta will be highlighted to illustrate the link between the research methodology and subsequent code implementation. These projects address timber-concrete composite floor systems, resilient connections for mass timber seismic force resisting systems, and mass timber foundation.

Biography

Dr. Ying-Hei Chui is currently Professor and Director of Nasser School of Building Science and Engineering in Department of Civil and Environmental Engineering at University of Alberta. Prior to joining the University of Alberta, he was New Brunswick Innovation Research Chair in Advanced Wood Products and Director of the Wood Science and Technology Centre at the University of New Brunswick. Dr. Chui is one of Canada's leading experts in the field of timber engineering, specializing in engineered wood products, timber connections and timber construction. He has over 30 years of research experience and published over 300 articles in refereed journals and conference proceedings in these disciplines. Dr. Chui is currently leading a multi-institutional research project known as Next Generation Wood Construction. This project supports over 50 graduate students at 14 Canadian universities. Dr. Chui is actively engaged in building code and design standard development in North America and at the international level. He is currently a Fellow of Canadian Academy of Engineering (CAE), member of a Standing Committee on Structural Design of the National Building Code of Canada, and member of a number of CSA technical committees on design of timber structures and wood products. He also chairs ASTM Technical Committee D.07 'Wood' and ISO Technical Committee 165 'Timber structures'.



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