



Innovative Construction System for Sustainable Buildings

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Floors
Shear Walls

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Design and Systems

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Summary:

This paper deals with a contemporary integrated and sustainable construction technology for new residential buildings. Specifically, this research aims at developing innovative steel-timber hybrid structures which allow a rapid assembly of the individual prefabricated components, minimizing the construction times and limiting the costs of the work. The numerical analyses performed on a multi-storey building for social housing will be presented and discussed. The in-plane behaviour of the floors and shear walls will be analysed, considering in particular the types and arrangement of the different timber- and steel-timber joints. The connections to be used among the construction elements will be selected in order to develop a sufficient stiffness, ductility and bearing capacity according to the design criteria for seismic-resistant structures. These connections allow to enhance the on-site assembly operations, therefore working effectively also under harsh climatic conditions.

Online Access: Free

Resource Link

https://www.researchgate.net/profile/Cristiano_Loss/publication/281462056_Innovative_construction_system_for_sustainable_buildings/links/55e9b90808ae65b6389b2853/Innovative-construction-system-for-sustainable-buildings.pdf