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Seismic performance of mid-rise light wood frame structure connected with reinforced masonry core
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Abstract
Recent changes in building regulations in the province of British Columbia have raised the storey limit of residential light wood frame buildings to 6 storeys. The increase in height leads to more flexible buildings, potentially necessitating the need to rely on the stiffer elevator shaft and stair well core to reduce building deflection under lateral loads. A study is undertaken to investigate the seismic response of light wood frame structures (LWFS) connected to a reinforced masonry core by a ductile connection system. Numerical modelling approach is adopted through the use of commercial software ABAQUS together with a subroutine describing hysteretic performance of shear walls and connections as user-defined elements. The research effort presented in this paper has provided a preliminary indication of the interaction between the reinforced masonry core and LWFS and may eventually lead to design guidelines that can be adopted by design professionals to effectively deal with the design of mid-rise hybrid wood frame buildings.

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