



Timber Outrigger Structures

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Summary:

The concept of outrigger in buildings follows the same principle of boat assembly that is to couple perimeter and internal structures together to resist the lateral load. This project aims to determine the optimum number and location of the outriggers in a timber building. For this purpose, six fictitious 20 - storey timber buildings were analyzed. Each structure was modeled on the same footprints, but the number and location of the outrigger and belt truss floors were different in each building. Each building was analyzed against the EL-Centro earthquake and wind load. The results of the overturning moment and lateral displacement due to earthquake and wind load and base reactions from time history response were studied to determine the lateral stiffness, optimum location, and the number of the outrigger floors.

Resource Link

<https://www.ualberta.ca/engineering/research/groups/timber-systems/research/master-of-engineering-projects.html> 