Design Application Procedures of 15 Storied 3D Reinforced Concrete Shear Wall-Frame Structure

Authors : H. Nikzad, S. Yoshitomi

Abstract : This paper presents the design application and reinforcement detailing of 15 storied reinforced concrete shear wallframe structure based on linear static analysis. Databases are generated for section sizes based on automated structural optimization method utilizing Active-set Algorithm in MATLAB platform. The design constraints of allowable section sizes, capacity criteria and seismic provisions for static loads, combination of gravity and lateral loads are checked and determined based on ASCE 7-10 documents and ACI 318-14 design provision. The result of this study illustrates the efficiency of proposed method, and is expected to provide a useful reference in designing of RC shear wall-frame structures.

Keywords : design constraints, ETABS, linear static analysis, MATLAB, RC shear wall-frame structures, structural optimization **Conference Title :** ICCSSE 2018 : International Conference on Composite Structures in Structural Engineering

Conference Location : Vancouver, Canada

Conference Dates : September 17-18, 2018