

USE OF RC SHEAR WALLS IN STRENGTHENING OF MULTISTORIED BUILDING WITH SOFT STOREY AT DIFFERENT LEVEL

R. V. SURVE¹, Y. P. PAWAR², C. P. PISE³, S. S. KADAM⁴, D. S. JAGTAP⁵,
D. D. MOHITE⁶ & C. M. DESHMUKH⁷

¹Research Scholar, Department of Civil Engineering, SKN Sinhgad College of Engineering,
Korti, Pandharpur, Solapur, Maharashtra, India

²Assistant Professor, Department of Civil Engineering, SKN Sinhgad College of Engineering,
Pandharpur, Maharashtra, India

³Associate Professor & HOD, Department of Civil Engineering, SKN Sinhgad College of
Engineering, Korti, Pandharpur, Solapur, Maharashtra, India

ABSTRACT

Due to increasing population since the past few years car parking space for residential apartments in populated cities is a matter of major concern. Hence the trend has been to utilize the ground storey of the building itself for parking. Also for offices or for any other purpose such as intercourse hall etc. soft storeys at different levels of structure are constructed. Investigations of past and recent earthquake damage have illustrated that the building structures are vulnerable to severe damage or collapse during moderate to strong ground motion. An earthquake with a magnitude of six is capable of causing severe damages of engineered buildings, bridges, industrial and port facilities as well as giving rise to great economic losses. Experience in the past earthquake has shown that a building with discontinuity in the stiffness and mass subjected to concentration of forces and deformations at the point of discontinuity which may leads to the failure of members at the junction and collapse of building. Hence in this paper attempt has been made to study performance of a building with soft storey at different level along with at GL. The nonlinear static pushover analysis is carried out. The hinges formed in the basic models are seen at performance point and to increase the performance, when it is strengthened with shear walls. Then the result obtained for basic models and strengthened models are compared in the form of performance point and hinge formation pattern at performance point.

KEYWORDS: Soft Storey, Shear Wall, Nonlinear Static Push-Over Analysis, Plastic Hinges, Stiffness, Performance Point