

Cost Comparison between R.C.C. Structures and Composite Columns Structures

Authors : Assad Rashid, Umair Ahmed, Zafar Baig

Abstract : A new trend in construction is widely influenced by the use of Steel-Concrete Composite Columns. The rapid growth in Steel-Concrete Composite construction has widely decreased the conventional R.C.C structures. Steel Concrete composite construction has obtained extensive receiving around the globe. It is considering the fact that R.C.C structures construction is most suitable and economical for low-rise construction, so it is used in farming systems in most of the buildings. However, increased dead load, span restriction, less stiffness and risky formwork make R.C.C construction uneconomical and not suitable when it comes to intermediate to high-rise buildings. A Base + Ground +11 storey commercial building was designed on ETABS 2017 and made a comparison between conventional R.C.C and encased composite column structure. After performing Equivalent Static non-linear analysis, it has been found that construction cost is 13.01% more than R.C.C structure but encased composite column building has 7.7% more floor area. This study will help in understanding the behavior of conventional R.C.C structure and Encased Composite column structure.

Keywords : composite columns structure, equivalent static non-linear analysis, comparison between R.C.C and encased composite column structures, cost-effective structure

Conference Title : ICSCECI 2021 : International Conference on Sustainable Civil Engineering and Civil Infrastructures

Conference Location : San Francisco, United States

Conference Dates : September 27-28, 2021