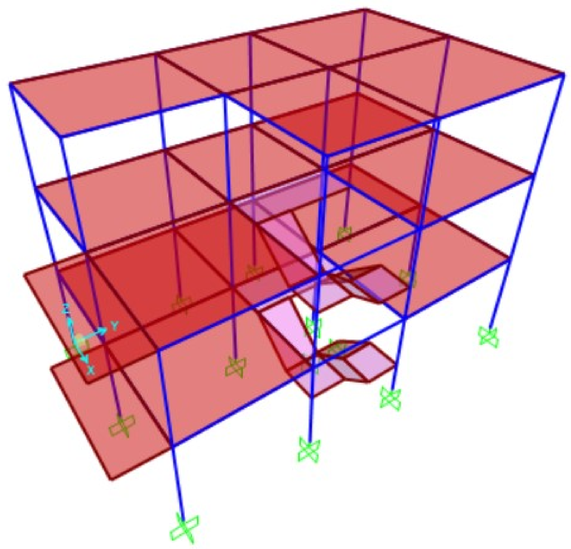
STRUCTURE SUPER-COMBO

Design and Construction Society, IIT KANPUR

INTRODUCTION

Structure Super-Combo is a project related to SAP2000 software. We learned about trusses, ILD, FEM, etc. Apart from this we learnt to solve big truss problems in the software instead of doing it manually.

SAP2000 is a structural analysis and design software developed by csiamerica. It is a very powerful software that can design almost any kind of civil engineering structure. SAP2000 is used for the design of beam and columns only.



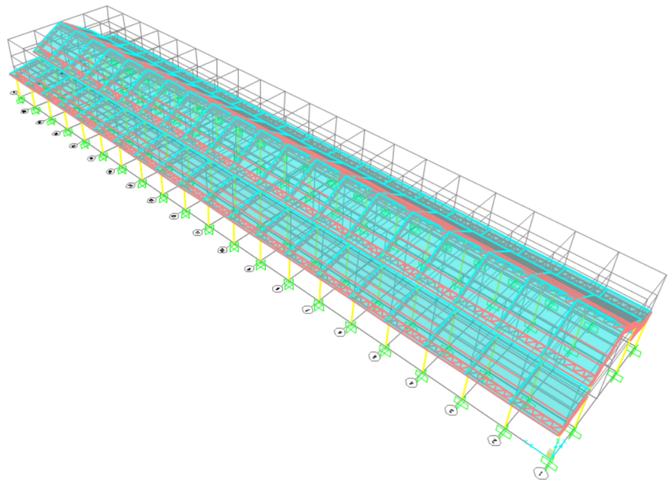
WORK DONE

We designed and analyzed the truss bridges and we also found out the reason for instability in one of the bridges.

We further designed a 100m long railway station shed. It was totally based on our imagination. We also calculated the cost it would incur if we made it in reality.

Then, we designed and analyzed a stable residential three-stories building. We gave live loads, dead loads and earthquake loads to the building.

And at last, we designed two buildings 100 ft apart and made a railway bridge above them. It was the best part of the project. We learnt how we can think out of the box and know if it is really possible or not. This can be done only by designing it in the software and analyzing it.



OBSERVATIONS

It was awesome to see the results of all the models we designed. We observed that how only a single beam or column can make a bridge stronger and how it can be dangerous if removed. We observed that only a little change can make a building or a bridge stable if done in a positive way.