

Analysis and Design of Shopping Centre Building

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Abstract

The fast growing of cities leads to develop various types of structures such as multi-story residential building, offices, shopping centre buildings ... etc. Shopping centre building (mall centre) either single story or multi-story are increasingly important to be explored.

The present project deals with the analysis and design of a shopping centre building.

The study was divided into three stages:

Stage 1: in this stage, the architectural drawing was studied. Then appropriate structural system (statical system) for columns and slabs was developed.

Stage 2: was focused on identify the loading system (Dead Load, Live Load, ... etc) according to materials properties and Saudi Building Code (SBC 301).

Stage 3: computer software programme (ETABS) was learned to carry out the analysis of building. Then a model was created using ETABS to get the internal forces (bending moment, shear force, axial force) and foundation reactions.

The design will be carried out in the next semester. Consequently, a complete structural drawing will be drafted along with analysis and design recommendations.

Objectives

The overall objective of this study is to design shopping centre building which satisfied the client and community needs of new commercial centre. The specific objectives of this project are:

- To carry out a complete analysis of main structural element of a shopping center building (multi-story building) include: a) slab; b) beam, c) column; d) foundation using software program.
- To carry out a complete design of main structural element of shopping center building as per Saudi Arabia Building Code (SBC) specifications.
- To create precise drawing used in construction and manufacturing.
- To get real life experience with engineering practice.
- To be familiar with structural analysis software design practice.

Significance to the Kingdom

If you look around, you will find that shopping centres are everywhere. The main reason shopping centres are so popular is that they are very convenient. Most of them include clothing stores, a food court, movie theatres, arcade rooms, and much more. Not all shopping centres mall are the same, but in general, they all have the same functions. Which are shopping and a place to hang out and cruise with your friends, maybe even meet new people.

Methodology

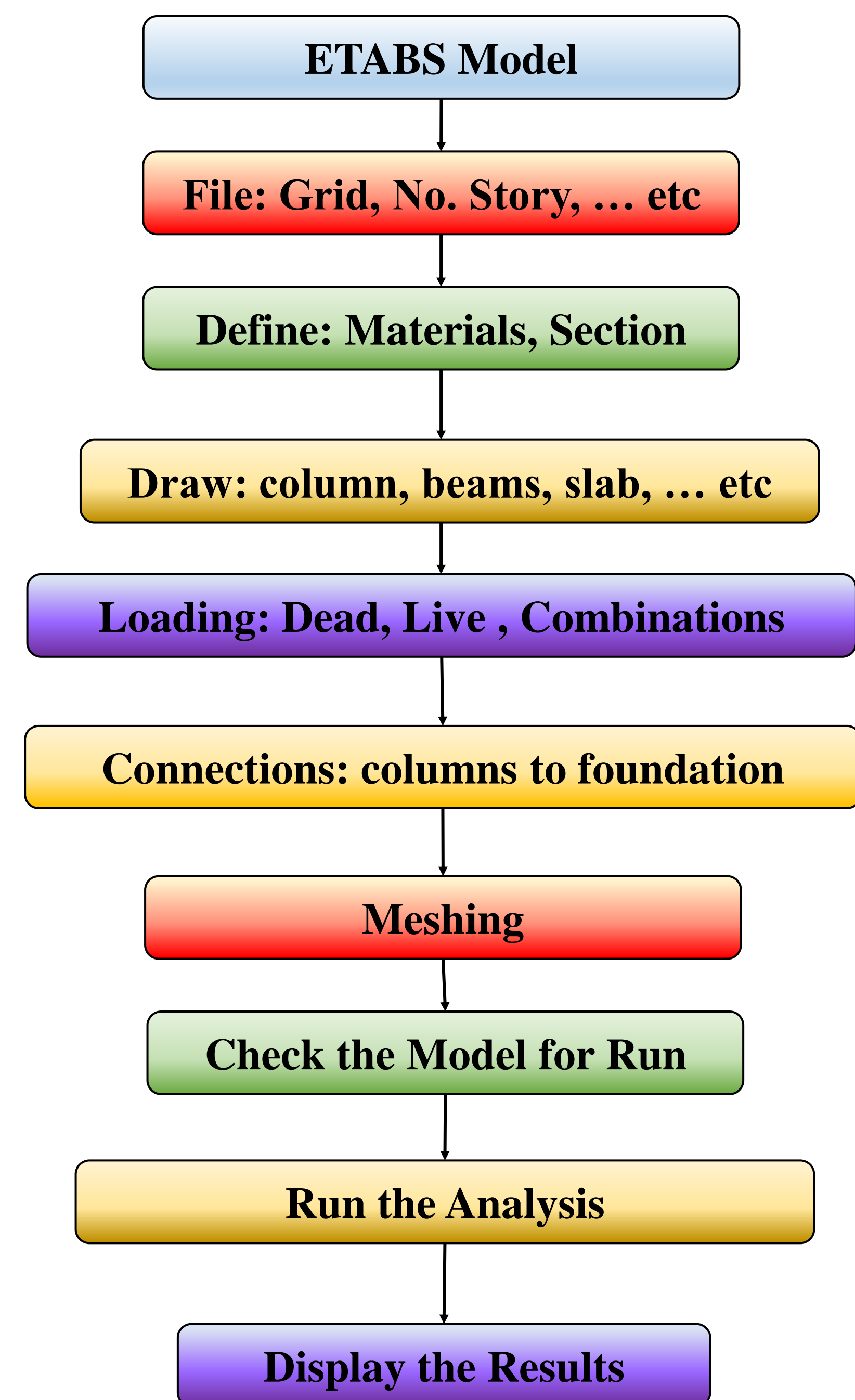


Figure 1: Modelling Process

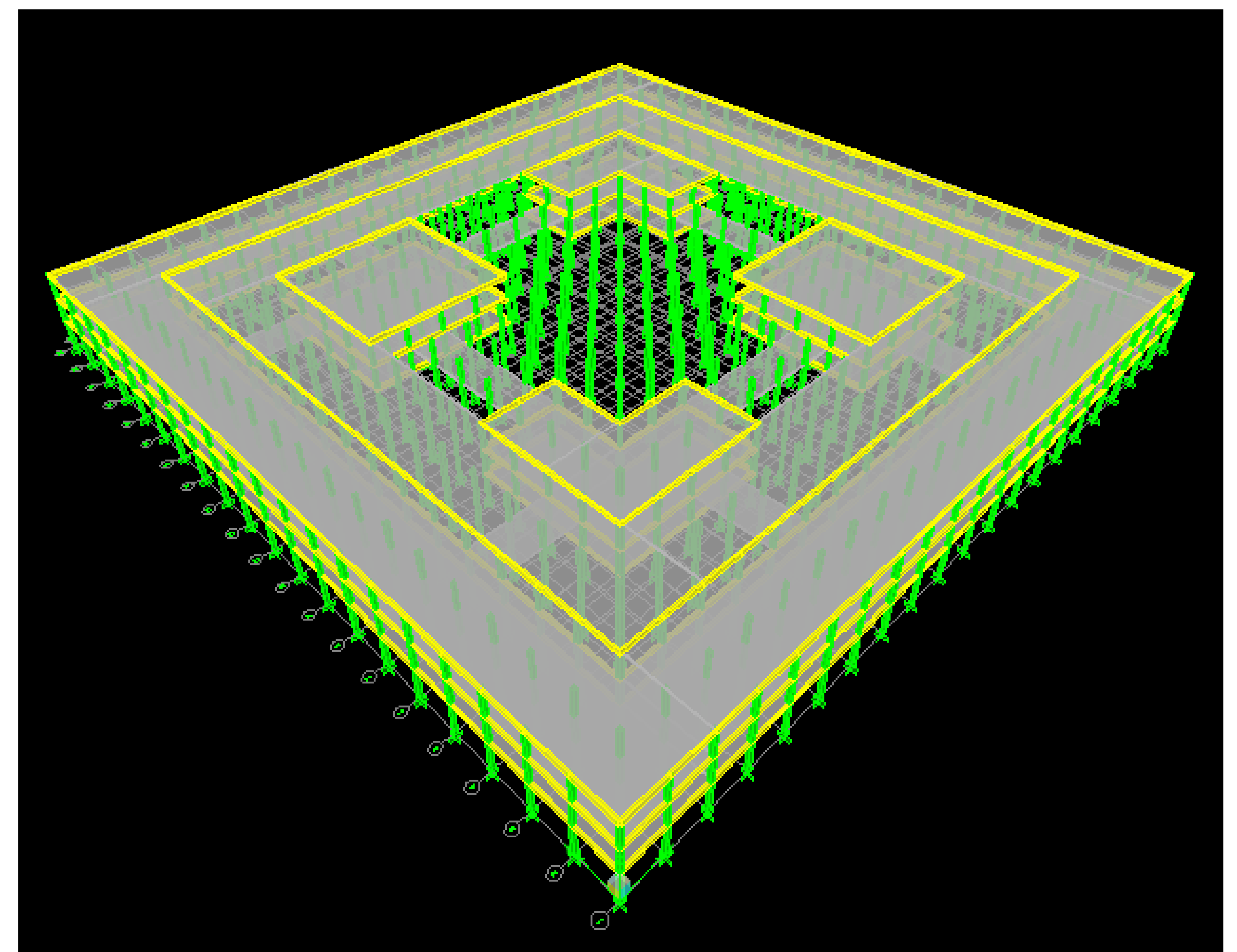


Figure 1: 3D-Model

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