



# EDIFICE

The problem is to design a G+5 storey energy efficient steel building using Tata Structura I or H and hollow steel section. We expect from participant to design most cost-effective, eco-friendly building. The location of building is assumed to be in Kolkata.

We expect from participants to do load analysis (Dead, Live, as per relevant IS Codes, WL as per latest amendment of IS:875 Part3, seismic load as per NBC 2016 and latest amendments in IS1893), Structural model framing and structural analysis by using latest version of STAADPRO V8i/ ETABS2015 and its amended version, Structural design calculations using as per IS 800 - 2007 (Latest IS code) for the followings:

1. A G+5 storied residential building whose plan parameters are attached herewith with structural centre line.  
Design the building as composite structure with suitable thickness of metal deck. Most economic and safe design for optimization of cost is of utmost importance.
2. Floor plan is attached. The floor to floor height of the building is 3.3m.
3. Design the suitable foundation for the structures net safe bearing capacity will be 7.0t per m<sup>2</sup> at a depth of 1.5m below GL for a footing size 3.0mX3.0m and 2.0m strip with 600mm sand cushioning.
4. I or H section (use Tata Structura I & H section range, Yield strength 350 MPa) for beams and Hollow sections (use Tata Structura hollow section range Yield strength 355 MPa) must be used in your building design. Grade of concrete: M25/M30

**Note:** Assumption made should be practical in line with the requirement.

# DOCUMENTS REQUIRED

1. G+5 Plan
2. Tata Structura 355 Brochure
3. Tata Structura H & I Section Brochure
4. G+5 Plan.dwg

# RULES & REGULATIONS

1. Teams must consist of a minimum of 2 and maximum of 5 participants.
2. The event will be conducted in two phases:
  - i. Online submission of abstract.
  - ii. Final presentation by shortlisted teams at IIT Kharagpur.
3. Your abstract should consist:
  - i. Description of different type of connections used in Steel Design.
  - ii. Brief about H/I, Hollow Section Beams with their advantages in various aspect.
  - iii. Load Analysis with STAAD Pro / ETABS file.
  - iv. Estimated Project Cost along-with Bill of Quantities.

**Note:** You can submit your uncompleted work of STAAD Pro/ETABS done by you till the date of your submission.
4. Shortlisted teams from abstract submission-round have to present their ideas in the form of power-point presentation during Megalith 2018 at IIT Kharagpur.
5. The abstract should be submitted with minimum font size of 11 and single line spacing and must not exceed 5 pages.
6. The abstract should be supported with valid references.
7. Relevant statistics can be added to support your claim (you may add one extra page to include stats, images and hyperlink them wherever required).
8. Mail your submission to [megalith2018@gmail.com](mailto:megalith2018@gmail.com) with subject as Teamname\_EDIFICE\_2018 on or before 25<sup>th</sup> FEBRUARY 2018, 11:59PM.
9. All the teams are requested to provide contact numbers, Email IDs and name of the college of each member along with the attached submission file in the mail.
10. The results of first round shall be given to the above listed e-mails and mobile numbers.
11. The decision of judges shall be final and binding.

# CONTACT US

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