# MULTI STOREY RESIDENTIAL BUILDING ANALYSIS AND DESIGN USING STADD PRO

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**Abstract: -** The analysis of a multi storeyed residential building of G+6 consisting of 5 apartments in each floor. The dead load &live loads are applied and the design for beams, columns, footing is obtained STAAD Pro with its new features surpassed its predecessors, and compotators with its data sharing capabilities with other major software like AutoCAD, and MS Excel. We conclude that staad pro is a very powerful tool which can save much time and is very accurate in Designs. Thus it is concluded that staad pro package is suitable for the design of a multistoried building.

**Keyword:-** Analysis, Multistoried Building , Design, STAAD Pro

**Introduction**

Footing shall be designed to sustain the applied loads, moments and forces and the induced reactions and to assure that any settlements which may occur will be as nearly uniform as possible and the safe bearing capacity of soil is not exceeded. 2.) Thickness at the edge of the footing: in reinforced and plain concrete footing at the edge shall be not less than 150 mm for footing on the soil nor less than 300mm above the tops of the pile for footing on piles.

**Bearing Capacity of Soil**:

The size foundation depends on permissible bearing capacity of soil. The total load per unit area under the footing must be less than the permissible bearing capacity of soil to the excessive settlements.

**Foundation Design**:

Foundations are structure elements that transfer loads from building or individual column to earth this loads are to be properly transmitted foundations must be designed to prevent excessive settlement are rotation to minimize differential settlements and to provide adequate safety isolated footings for multi storey buildings. These may be square rectangle are circular in plan that the choice of type of foundation to be used in a given situation depends on a number of factors., site plans and layout plans etc, as for the requirements.

**Material and Methodology**

**STAAD**

STAAD is powerful design software licensed by Bentley .STAAD stands for structural analysis and design ,any object which is stable under a given loading can be considered as structure. So first find the outline of the structure, whereas analysis is the estimation of what are the type of loads that acts on the beam and calculation of shear force and bending moment comes under analysis stage. Design phase is designing the type of materials and its dimensions to resist the load. This we do after the analysis. To calculate s.f.d and b.m.d of a complex loading beam it takes about an hour. So when it comes into the building with several members it will take a week. STAAD pro is a very powerful tool which does this job in just an hour's staad is a best alternative for high rise buildings. Now a days most of the high rise buildings are designed by staad which makes a compulsion for a civil engineer to know about this software. These software can be used to carry rcc, steel, bridge, truss etc according to various country codes.

**Alternatives for STAAD:**

Struts, robot, sap, adds pro which gives details very clearly regarding reinforcement and manual calculations. But these software's are restricted to some designs only whereas STAAD can deal with several types of structure.

**STAAD Editor:**

STAAD has very great advantage to other software's i.e., STAAD editor. STAAD editor is the programming. For the structure we created and loads we taken all details are presented in programming format in staad editor. This program can be used to analyze another structures also by just making some modifications, but this require some programming skills. So load cases created for a structure can be used for another structure using staad editor.

*Limitations of STAAD pro:*

1. Huge output data
2. Even analysis of a small beam creates large output.
3. Unable to show plinth beams.

**STAAD foundation**:

STAAD foundation is a powerful tool used to calculate different types of foundations. It is also licensed by Bentley software's. All Bentley software's cost about 10 lakhs and so all engineers can't use it due to heavy cost. Analysis and design carried in Staad and post processing in staad gives the load at various supports. These supports are to be imported into these software to calculate the footing details i.e., regarding the geometry and reinforcement details. This software can deal different types of foundations

**Conclusion**

1. Designing using Software's like Staad reduces lot of time in design work.
1. Details of each and every member can be obtained using staad pro.
2. All the List of failed beams can be obtained and also Better Section is given by the software.
3. Accuracy is Improved by using softwar

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