**CONSTRACTION PLANNING OF G+6 BY USING STAAD PRO**

**ABSTRACT**

In order to compete in the ever growing competent market it is very important for a structural engineer to save time. As a sequel to this an attempt is made to analyze and design a multistoried building by using a software package staad pro. For analyzing a multi storied building one has to consider all the possible loadings and see that the structure is safe against all possible loading conditions.

There are several methods for analysis of different frames like kani’s method, cantilever method, portal method, and Matrix method. The present project deals with the analysis of a multi storied residential building of G+6. The dead load &live loads are applied and the design for beams, columns, footing is obtained

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.

**Assumptions and Notations used:**

The notation adopted throughout the work is same IS-456-2000.

**Assumptions in Design:**

1. Using partial safety factor for loads in accordance with clause 36.4 of IS-456-2000 as ϒt=1.5

2. Partial safety factor for material in accordance with clause 36.4.2 is IS-456-2000 is taken as 1.5 for concrete and 1.15 for steel.

3. Using partial safety factors in accordance with clause 36.4 of IS-456-2000 combination of

Load.

D.L+L.L 1.5

D.L+L.L+W.L 1.2

|  |  |  |
| --- | --- | --- |
| **Density of materials used:** |  |  |
| **MATERIAL:** |  | **DENSITY** |
| i) Plain concrete |  | 24.0KN/m3 |
| ii) Reinforced |  | 25.0KN/m3 |
| iii) Flooring material(c.m) |  | 20.0KN/m3 |
| iv) Brick masonry |  | 19.0KN/m3 |
| v) Fly ash |  | 5.0KN/m3 |
| **4. LIVE LOADS:** In accordance with IS. 875-86 |  |
| i) Live load on slabs | = | 20.0KN/m2 |
| ii) Live load on passage | = | 4.0KN/m2 |
| iii)Live load on stairs | = | 4.0KN/m2 |

**DESIGN CONSTANTS:**

Using M30 and Fe 415 grade of concrete and steel for beams, slabs, footings, columns.

Therefore:-

|  |  |  |
| --- | --- | --- |
| fck | = | Characteristic strength for M30-30N/mm2 |
| fy | = | Characteristic strength of steel-415N/mm2 |

**Assumptions Regarding Design:**

1. Slab is assumed to be continuous over interior support and partially fixed on edges, due to monolithic construction and due to construction of walls over it.
2. Beams are assumed to be continuous over interior support and they frame in to the column at ends.

**Assumptions on design:-**

1. M20grade is used in designing unless specified.
2. Tor steel Fe 415 is used for the main reinforcement.
3. Tor steel Fe 415 and steel is used for the distribution reinforcement.
4. Mild steel Fe 230 is used for shear reinforcement.