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Planning and Design of RCC residential Building

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***Abstract*: Today the world is developing in faster manner and due to developing, land and time become most important factors in the life. Especially, in metropolitan cities this two factors are very much important. Hence, in such cases we go for multistoried building. In such we get numbers of occupants in one structure. The plan and design residential apartment using various software i.e. AUTO CAD, STAAD PRO. Using auto cad for planning of structure is drafted and using staad pro for the various loads acting on the structure is calculated and the structure is analyzed for the various load combination. designing of the building is done. Whenever we consider the design of such buildings, especially we have to deal with R.C.C. design for this purpose the most economical one developed and based on IS 456-2000 limit state method is the impressive solution.**

***Keywords*: RCC residential building.**

1. Introduction

Today, the world is developing in a fast manner, and especially due to this rapid development, time and land becomes important factor of the nature. In case of big metropolitan cities these two factor have very much importance. Hence whenever in such cities constant is taken in account we always go for the multistoried building. These multistoried buildings are essential, as no of occupants which can be accommodated are large in no's as compared to bunglows, at the same time required in compression is also reasonable. Whenever we consider the design of such buildings, especially we have to deal with R.C.C. design for this purpose the most economical one developed and based on IS 456-2000 limit state method is the impressive solution.

Structures in concrete becomes very common in civil engineering construction since last many years. A structure is an assembly of a number of members such as slabs, beams, columns, walls, etc. which are very much necessary to resist the loads and forces, changes in climatic conditions such as temperature, frost, chemical attach etc. Design of a structure includes assessing the loads and resist the assessed loads with a sufficient margin of safety. A structure is said to be efficiently designed if all the component members are so arranged that they transmit their self-weight and other imposed loads to foundation or supporting structure by cheapest means so as to satisfy the requirements of architecture, structural stability and the nature of the site with sufficient safety.

Structural design is controlled by certain regulations or codes of practices for the specific regions, still the designer has always the freedom to exercise his own judgment. In India, the design of reinforced concrete structure is mostly based upon Indian standard codes of practice inforce from time to time. At present we are adopting IS456-2000 and have strictly followed the same. The proposed building will be having a ground storey and two upper storey. Ground floor is kept for parking. Access to building is provided both through stairs.

2. Methodology

Limit state design is based on the concept of limit state. The acceptable limits for the safety and serviceability requirements before failure is called the limit state. In L.S.M. of design the structure is designed to with stand safely all the load liable to act on it during its life.

This method is modification of ultimate strength design procedure where the structure is subjected to ultimate loads and the materials are allowed to develop ultimate stresses and design values are derived from characteristic values (ultimate values). Design loads are obtained by multiplying a partial factor of safety for loads with working loads and in a similar manner, design strength of materials is obtained by dividing characteristic strength (ultimate strength) with respective partial factors of safety for materials. Member are thus proportioned to carry limit state design loads and materials are stressed to limiting design strengths.

3. Conclusion

- The planning and design of residential building in framed structure has been completed effectively in our project.
- In frame analysis is done using manual analyzing. Structural elements like slab, beam columns….etc. is designed by limit state method.
- Thus the limit state method is adopted for designing for

varies components of building. The limits state concept the structure is shall be designed to with stand safely all loads label acts as a throughout in life time.

- If this project is constructed in proposed site, it will be very useful to our people.
- The important think that we done were referring to lots of books for designing, and we are very much satisfied with exposing to field design.

References

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