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A Review of Design and Analysis of G+8 Multistorey RCC Building using ETABS

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***Abstract*— The increasing number of people living in cities together with limited available land results in a higher demand for multi-storey residential buildings. The construction industry prefers to use Reinforced Cement Concrete (RCC) framed structures for these buildings due to their durability and extended lifespan and their economical construction costs. The research study analyzes G+8 multistorey RCC building designs through their evaluation of Indian Standard (IS) code requirements. The literature review includes studies about structural modeling which focus on load calculations and gravitational as well as lateral load assessment and the design process for structural elements including slabs and beams and columns and foundations. ETABS has become the most efficient and reliable software for three-dimensional modelling, analysis, and design of multistorey structures, thus enabling accurate prediction of structural behavior under different loading conditions. The review identifies which aspects of seismic effects and material properties and soil conditions must be assessed to ensure safety and operational performance. The findings from earlier research indicate that combining software-based analysis with manual verification delivers architectural designs which meet safety requirements while remaining cost-effective. The research paper aims to bring together current studies while showing present design methods and providing complete knowledge about RCC multistorey building design with ETABS.**

***Index Terms*— G+8 RCC Structure, ETABS, Structural Examination, IS Codes, Multistorey Tower Assembles.**

I. INTRODUCTION

The combined effects of urban growth and population expansion have created an immense need for land resources especially in developing nations which include India multiple areas that already face high population density. The construction of multi-storied buildings has emerged as an environmentally sustainable solution which allows cities to expand their residential and commercial spaces. Buildings use reinforced cement concrete (RCC) systems as their main structural framework because these systems provide exceptional strength and durability while enabling architectural design requirements to be fulfilled at an affordable cost [1].
The analysis and design process for multistorey RCC buildings requires detailed evaluation of multiple elements which include loading patterns and material characteristics as well as structural layout and soil properties and seismic behavior.

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The structural analysis process used traditional methods which employed simplified analytical techniques that required extensive time for execution while their ability to handle complex geometrical designs remained limited. The software package ETABS has become a fundamental tool in structural engineering because it enables engineers to create accurate three-dimensional designs and conduct efficient analyses of high-rise buildings through its advanced computational capabilities [2].

ETABS serves as the preferred software tool which architects use to analyze and design tall buildings because it accurately simulates how structures respond to various gravitational and wind and earthquake forces. The system provides complete design outputs which include details about structural moments and shear and axial forces and building displacements and storey drifts which engineers need to create safe structural design [3]. Researchers have demonstrated through multiple studies that ETABS functions as a design tool which helps shorten design time while decreasing human mistake rates when compared to traditional hand calculation methods [4].

The Indian Building Code begins with multiple standards and codes which establish construction requirements that include IS 456:2000 for concrete design and IS 875 (Part 1 and Part 2) for dead and live loads and IS 1893 (Part 1):2016 for seismic analysis. The building code establishes multiple conditions which architects must follow to ensure their structures will remain structurally sound and durable and flexible during earthquakes. Seismic forces create large demands on mid-rise buildings like G+8 which requires their structures to withstand both environmental and structural loads and their designs to undergo assessment for potential enhancements [6].

The G+8 building requires multiple residential units on each level which creates a need for an effective system which transfers weight from building slabs through their beams to the columns and from there to their foundation base. The floor system serves two functions because it supports vertical loads while creating a rigid diaphragm which distributes lateral forces to vertical support components [7]. Engineers must design floor systems together with slab and beam and column and foundation systems to ensure safe performance of entire structures.

The earlier research studies demonstrated that software output produces accurate results, but manual verification together with code-based testing remains essential for validating results and evaluating practical implementation. The design economy and safety of a project depend mostly on three factors which include member dimensions, reinforcement types, and foundation selection.

The purpose of this literature review is to compile research work that investigates the analysis and design of G+8 multistorey RCC structures through the application of ETABS software. The article examines modeling methods, loading standards, and design techniques that the literature examines. The research work combines multiple studies to provide readers with an overview of current design practices for RCC multistorey buildings, while also serving as a valuable resource for students and researchers who study structural engineering concepts.

II. PROBLEM IDENTIFICATION

The rapid urbanization and the increment in the population have been the major causes of mid-rise residential buildings, such as G+8 RCC structures, getting built on a large scale, thus the efficient use of the limited land resources. On the contrary, wrong structural analysis and insufficient design practices may lead to buildings that are unsafe, uneconomical, or in non-compliance, especially in regions where earthquakes are likely to occur. One of the major drawbacks of many traditional design methods is the heavy reliance on oversimplified assumptions that do not represent the multidimensional response of multistorey buildings subjected to the simultaneous action of gravity and lateral forces [1].

In moderate seismic zones, the neglect or the underestimate of the lateral load effects might cause an excessive dislocation between the floors, so cracking and even the total collapse of the structure can happen during the earthquakes [2]. Moreover, the incorrect calculation of dead and live loads, the inappropriate dimensions of the members, and the insufficient detailing of the reinforcement can weaken serviceability and durability. Though the advanced software named ETABS is widely accepted in practice, the poor modeling techniques and the insufficient understanding of IS code provisions still contribute to the unreliable analysis outputs [3].

The research requires systematic work because it needs to find proper modeling methods and load application techniques and design procedures which comply with Indian Standards to create safe and economical structural solutions for G+8 RCC buildings through testing with the ETABS software.

III. LITERATURE REVIEWS

A. Literature Survey

A. K. Sharma et. al. 2025, The current study uses ETABS software to create a model of multi-storey RC frames which tests different shear-wall arrangements and measures their seismic response through three parameters which include base shear and story drift and displacements. The paper models several plan configurations and systematically varies shear-wall locations to evaluate effectiveness in reducing lateral deformation and torsion. The main focus of this study investigates how different wall layouts affect global stiffness and load paths while material nonlinearity remains secondary to this investigation. The results demonstrate that proper shear wall installation leads to significant interstory drift reduction which results in consistent deformation patterns. The paper underlines practical design recommendations: use symmetric shear-wall arrangements where possible and combine frame action and walls for economical designs—especially effective for mid-rise buildings modeled in ETABS.

Shehzad Choudhary et al., 2024, The study evaluates the seismic performance of RC buildings with different architectural designs through ETABS and response spectrum analysis. The authors study how diaphragmatic discontinuity affects storey responses by building three standard building designs which they evaluate using IS 1893 spectrum. The research demonstrates that plan irregularities together with diaphragm gaps create alterations in dynamic properties which result in changes to natural periods, mode shapes, and modal mass participation used for seismic force distribution. The study emphasizes that ETABS requires specific mesh refinement procedures and diaphragm definition to achieve successful modeling. The study shows that architects should implement either continuous diaphragms or specific modeling for their discontinuities while using mass modifiers with caution. The paper helps mid-rise designers who want to use commercial software to measure the impact of plan shape on their designs.

P. R. Deshmukh et. al. 2024, The review demonstrates standard procedures which begin with AutoCAD and continue through ETABS to end at manual evaluation processes. The study compares two educational projects which use STAAD and ETABS to produce results that researchers verify through hand calculations while showing the most common student mistakes which include selecting incorrect load combinations and using inadequate mesh refinement and failing to follow code requirements for detailing work. The review shows software solutions decrease the time needed to perform analysis work but they do not offer replacement for human decision making because both manual verification and IS 456 detailing work must be performed. The research examines typical design results which show standard beam and column dimensions used in structures ranging from G+5 to G+10 while establishing a checklist requirement for ETABS modeling which includes correct section properties and mass assignments and load patterns and boundary conditions. The practical review serves as an effective introductory resource for undergraduate students and junior engineers who need to learn ETABS-based design implementation.

V. Kumar et. al. 2024, The investigation demonstrates that both static assessment methods and dynamic response assessment methods based assessment methods use equivalent methods to evaluate standard RC buildings which have mid-to-high height. The authors use ETABS to create two building models which include G+10 and G+25 designs for different seismic zones. The research shows that equivalent static methods can provide conservative results for some building parameters but they will produce inaccurate lateral demand results based on building height and mode shape patterns. The dynamic analysis method provides better results for taller models because it includes higher-mode effects while static methods only handle fundamental model components. The research supports the use of two methods together by recommending static evaluations for initial testing while using response spectrum or time-history analysis to confirm final design requirements for irregular or tall building structures.

M. A. Rahman et. al. 2024, This review synthesizes experimental and numerical studies on two-way slabs with openings, which research three structural components together with their respective reinforcement techniques for openings. The study provides proof that opening size and position together with corner restrictions of a slab system lead to different patterns of internal forces and decrease its capacity to resist punching forces. The paper reviews comparisons between code predictions (ACI/EURO/fib) and laboratory tests, which demonstrate both conservative and non-conservative behavior of the codes. The study presents reinforcement detailing methods which include extra perimeter bars U-stirrups and negative moment regions together with two methods of strengthening which use FRP and steel plates. The review offers apartment slab designers effective methods to create MEP duct and stair opening details which will achieve proper deflection control and shear strength maintenance.

Jaiswal et al., 2020, The survey evaluates how seismic performance of RC frame structures changes when they have both vertical and horizontal design irregularities that consist of mass and stiffness elements together with geometric features. The study presents case examples which demonstrate that floating columns together with re-entrant corners and soft story designs create concentrated structural demands that resulted in previous building failures. The review summarizes mitigation strategies which require the introduction of shear walls together with structural changes to column grids and the addition of bracings while establishing a rule to prevent sudden stiffness transitions. The document examines analytical tools which include ETABS and pushover and nonlinear time history methods while it advises site-specific seismic evaluation according to IS 1893 standards. The research paper evaluates building design through a comparison between simplified code standards and advanced nonlinear testing methods while establishing testing requirements for G+8 structures with design deviations which require additional testing.

S. Patil et al. 2023, The research paper presents measurements of maximum horizontal displacement and story drift between two analysis methods which include equivalent static analysis and response spectrum analysis for G+7 RC frames. The researchers found that static methods tend to overestimate drift but they underestimate the responses of taller structures to higher modes. The research study assesses how changes in zone factor and mass eccentricity impact results while stiffness distribution through infill wall presence creates major changes in results. The study examines various ETABS modeling options which include mass distribution and rigid diaphragm assumptions and the impact of infill modeling on stiffness calculation. The authors present practical estimation methods which include dynamic analysis default conditions and they emphasize that code-required load combinations must be followed to maintain safety standards.

A. Qsymah et al., 2024, The article demonstrates finite element (FE) modeling results for two-way slabs which have been strengthened through externally bonded FRP sheets. The FE model demonstrates flexural and punching performance while testing different FRP pattern and anchorage methods. The research provides apartment designers with information about local strengthening methods which enable them to extend slab spans and create open penetrations. The paper investigates the interaction between concrete and FRP materials while studying mesh sensitivity and nonlinear material behavior. The modeling technique can be applied to create ETABS sub-models or develop simplified methods for strengthening design. The study requires researchers to use boundary conditions and constitutive laws throughout their experiments because code regulations for strengthened slabs have different levels of safety.

R. S. Pawar et al. 2025, The article presents multiple case studies from ETABS which describe their modeling methods that use shear walls and diaphragm continuity and mass distribution. The authors compared irregular and regular cases through response spectrum and time-history analyses while they found that ETABS results matched simplified code estimates when the model was correctly configured. The report highlights common pitfalls which include incorrect mass source definitions that exclude floor finishes and boundary condition errors at supports and excessive mesh use for slab analysis. The paper provides practical guidance for engineers and students because it requires following IS code load combinations and performing manual checks of critical member tests which go beyond software results.

K. S. Reddy et al. 2019, This article compares linear static and dynamic analyses for buildings with plan irregularities through building studies which show how mode shapes and participation factors change according to building designs. The authors create six scenarios which include testing bare frames and frames with shear walls positioned at multiple locations to measure storey displacements and drifts and base shear. The research shows that equivalent static analysis produces two results because it overestimates drift in certain situations while it fails to detect higher-mode effects in other situations. The paper demonstrates how shear walls help redistribute demands and introduces a process which starts with static analysis for preliminary assessments before using dynamic analysis to validate results. The recommendations align with IS 1893 guidance.

A. Sharma et al. 2024, The paper presents essential concepts for RCC slab design together with details about reinforcement and practical issues encountered during construction and the common failure modes which include punching and excessive deflection. The research integrates traditional plate theory with slab design standards for both two-way and one-way systems and contemporary building techniques which use FRP materials and high-strength concrete to achieve long-span structures. The paper presents moment coefficient formulas together with shear testing methods and serviceability standards while comparing IS 456 with other building codes. The review provides practical guidance about minimum reinforcement requirements and deflection control methods and construction quality assurance which apartment designers can use to their advantage. Furthermore, the study demonstrates that multistory buildings require continuous slab structures and shared load distribution for effective diaphragm function.

S. Kumar et al. 2019, The research study conducts three types of analysis which include static analysis dynamic analysis and progressive collapse analysis for a G+10 RC frame system that was assessed using ETABS. The study investigates how critical element removal together with extreme load conditions will lead to successive system failures. The research paper combines linear dynamic response assessment with nonlinear collapse evaluation to discover essential weak points which include soft stories and insufficient joint continuity. The study provides practical robustness recommendations which include continuous reinforcement together with appropriate ties and adequate load path redundancy. The research paper advises designers of mid-rise apartment buildings to evaluate accidental loads and robustness according to applicable standards while they primarily assess gravity and seismic loads.

K. Senthil, 2020, This article reviews the performance of RC elements when loaded with blast and very strong impulsive loads, and it also reflects on the corresponding properties of the materials in terms of ductility, detailing, and heavy-load resistance. The paper, though predominantly discussing the subject of blast loading, does not shy away from transmitting the messages that are quite similar in the case of earthquakes, such as the need for confinement, ductile detailing, and adequate tie spacing to retain post-peak strength. It goes through the experimental and numerical research on cored, beamed, and sliced structures and then provides a concise understanding of the reinforcement methods that prevent the occurrence of brittle failures. The paper does not talk about ETABS modeling but its discussion of detailing and confinement is relevant for seismic design where ductility is the parameter determining the prevention of collapse. For the designers of residential mid-rise, the review clearly indicates that the proper detailing (as per IS 456 and the ductility requirements of the seismic codes) is an absolute must.

M. Kulkarni et al. 2024, The technical report examines the combined design approach for grid (ribbed) slabs used in multistorey frame structures which demonstrates the relationship between material consumption and structural stability and building performance. The authors present ETABS modeling tips for grid slabs (equivalent plate properties vs explicit rib modeling), and compare load transfer and deflection outcomes. The report shows that grid slabs enable builders to decrease slab thickness and overall weight but they need to create precise models and detailed reinforcement plans for rib intersection areas. The document provides essential details about the construction process and the necessary formwork requirements needed for apartment building development. Grid slabs become a cost-effective solution for G+8 buildings when used on extended distances designers need to assess punching and shear forces at rib-column connections and utilize ETABS or sub-models to study specific local impacts.

B. Literature Summary

- Recent survey results demonstrated that ETABS is a reliable and frequent software application in the field of analysis and design of multistory RCC buildings.
- Most of the researchers deal with G+5 to G+15 types of buildings, which indicates that they are trying to find out how the gravity and seismic loads affect the structures.
- Seismic analysis performed with the response spectrum and time-history methods is considered more accurate than static analysis for mid- and high-rise buildings, as evidenced by the literature.
- There is a consensus in various studies that implementing shear walls and bracing systems can lead to a significant decrease in both storey drift and lateral displacement.
- Two-way slabs and grid slabs are found to be more advantageous in terms of load distribution and structural efficiency, which is the result of research on slab systems.
- Researches done on different building designs conclude that diagonally placed and vertically irregular buildings tend to get more and central seismic effects, therefore they are more vulnerable during an earthquake.
- The majority of authors suggest that it is necessary to do a software-based analysis along with manual design checks as per IS codes.
- In summary, literature asserts the accuracy, efficiency, and safety in the design of RCC multistorey using ETABS based modeling.

C. Research Gap

- Research shows insufficient studies about G+8 RCC buildings because researchers choose to examine either low-rise buildings or high-rise buildings.
- The research studies seismic analysis but they do not provide a comparison between gravity-only load behavior and combined load behavior.
- There exists a research gap about how to manually verify ETABS output according to IS 456 and SP 16 standards.
- The research investigates economic optimization of member sizes but safety and serviceability requirements must remain intact during this process.
- Mid-rise building analysis usually ignores how soil-structure interaction affects building performance.
- Research has not been conducted to study actual construction problems which include construction practices and issues related to reinforcement layout.

- The studies investigate how different material grades and load combinations affect code compliance but they do not consider this aspect.
- The building design needs to conduct an in-depth analysis which meets all building code requirements through ETABS testing to determine safety and serviceability while assessing economic performance of the G+8 RCC building.

IV. Research Methodology

A. Criteria for selecting this study

There exists urgent demand for effective mid-rise residential buildings because cities keep growing while land resources remain scarce. G+8 RCC structures fulfill present needs because their design delivers fundamental solutions to current urban development issues. The G+8 building structure functions as a boundary area which experiences primary gravity load impacts while seismic forces begin to show their effects. The construction method which uses RCC frame structures stands as the primary choice used in Indian building projects therefore it requires thorough examination. The research establishes a high level of value because ETABS software serves as a widely used instrument in professional work environments. The study works according to the Indian regional standards which include Indian Standards IS 456:2000 IS 875 and IS 1893:2016. The existing research literature contains insufficient studies which demonstrate the complete design process for G+8 building systems. The project combines software analysis methods with manual design checks to create a system which produces more trustworthy results. The research results provide direct value to actual residential apartment construction work which helps both students and professional engineers.

B. Method of analysis

The architects use AutoCAD software to create their architectural plans and structural designs. The design team creates an RCC framed three-dimensional model which they build using the ETABS software. The engineers establish material characteristics by using IS codes to define M25 concrete and Fe 500 steel specifications. The IS 875 (Part 1 & Part 2) standard defines dead and live loads. The load combination is developed in accordance with IS 456:2000 and IS 1893:2016. The gravity load analysis calculates bending moments and shear forces and axial loads. The seismic analysis uses two methods which are equivalent static analysis and response spectrum analysis. The manual design of structural elements (namely slabs, beams, columns, and footings) includes checking them for safety, serviceability, and economy.

C. Comparison and Analysis

TABLE I: COMPARISON AND ANALYSIS FROM LITERATURES

Sr. No.	Author(s) & Year	Analysis Method Used	Structural System / Focus	Key Observations
1	Sharma et al., 2025	Static & Response Spectrum (ETABS)	RCC frame with shear walls	Shear walls significantly reduced storey drift and lateral displacement.
2	Choudhary et al., 2024	Dynamic Seismic Analysis	Diaphragm discontinuity	Discontinuity increased torsion and storey displacement.
3	Deshmukh & Patil, 2024	Gravity Load Analysis	G+8 RCC framed building	Manual design validation improved safety and economy.
4	Kumar & Mehta, 2024	Static vs Dynamic Comparison	Regular and irregular RCC frames	Dynamic analysis captured higher-mode effects accurately.
5	Rahman & Hossain, 2024	Numerical & Experimental Review	Two-way slabs with openings	Openings reduced punching capacity without additional reinforcement.
6	Jaiswal et al., 2020	Response Spectrum Analysis	Irregular RC buildings	Irregularity increased seismic vulnerability.
7	Patil & Kulkarni, 2023	Static & Dynamic Analysis	Mid-rise RCC buildings	Static method acceptable for regular low-rise buildings only.
8	Qsymah et al., 2024	Finite Element Analysis	FRP-strengthened slabs	FRP improved flexural and punching performance.
9	Pawar & Kute, 2025	Seismic Analysis (ETABS)	Multistorey RCC building	Correct mass modeling critical for accurate results.
10	Reddy & Rao, 2019	Static & Dynamic Analysis	RCC frames with shear walls	Shear walls reduced displacement and base shear.
11	Sharma & Jain, 2024	Review Study	RCC slab systems	Proper detailing controls deflection and cracking.
12	Kumar & Prasad, 2019	Progressive Collapse Analysis	G+10 RCC building	Redundancy improves structural robustness.

13	Senthil & Prakash, 2020	Extreme Load Review	RC beams and columns	Ductile detailing enhances post-peak capacity.
14	Kulkarni & Joshi, 2024	Static & Dynamic (ETABS)	Grid slab system	Grid slabs reduce dead load but need careful shear checks.

The literature comparison highlights key insights into structural behavior and analysis methods of RCC systems. Studies show that shear walls play a crucial role in reducing storey drift and lateral displacement, improving seismic performance. Dynamic analysis methods, such as response spectrum and finite element analysis, provide more accurate results by capturing higher-mode effects, especially in irregular structures. Structural irregularities, diaphragm discontinuities, and slab openings significantly increase vulnerability, torsion, and displacement if not properly addressed. Research also emphasizes the importance of proper mass modeling, detailing, and reinforcement to ensure safety and performance. Advanced techniques like FRP strengthening enhance slab capacity, while redundancy and ductile detailing improve structural robustness under extreme loads. Additionally, static methods are suitable mainly for regular low-rise buildings, whereas complex structures require dynamic analysis. Overall, careful design, accurate modeling, and appropriate analysis methods are essential for safe and efficient structural performance.

V. DISCUSSION

A. Synthesis of findings from literature

- The literature shows that ETABS functions as a reliable and efficient tool which architects and engineers use for multistorey RCC building design and analysis.
- The studies demonstrate that dynamic seismic analysis methods which include response spectrum and time-history analysis produce better results than equivalent static analysis methods for mid- to high-rise structures.
- The analysis results change when engineers properly model the mass properties and diaphragm behavior and boundary conditions of the system.
- The addition of shear walls or bracing systems results in significant reductions of both storey drift and lateral displacement from the building structure.
- The research shows that plan and vertical irregularities create additional torsional effects which make buildings more susceptible to seismic damage.
- The choice of slab system (two-way or grid or conventional slabs) determines how loads distribute throughout the structure and how effectively the system operates.
- Engineers require manual design verification of software outputs because it ensures both code compliance and constructability to build projects.
- The combination of software analysis together with IS code-based design methods guarantees that RCC multistorey buildings will achieve safety standards while maintaining operational functionality and cost effectiveness.

B. Methodology for future research directions

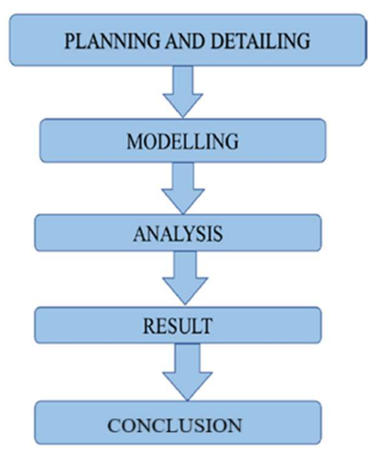

Figure 1. Flow Diagram of system

The flow diagram represents the systematic procedure followed in the study. It begins with planning and detailing, where architectural layout and design requirements are defined as per standards. Next, modelling is carried out using ETABS to create a 3D structural model with assigned material properties and loads. In the analysis stage, the structure is evaluated under gravity and seismic loads to determine forces, displacements, and drifts. The result stage interprets these outputs for safety and performance. Finally, conclusion summarizes structural adequacy, serviceability, and economic feasibility based on design outcomes.

The research study uses a systematic research method which combines software analysis with manual design according to Indian Standard codes. The G+8 residential building's architectural layout is first created using AutoCAD software which conforms to building regulations.

The architectural layout is followed by the creation of a 3D RCC framed structural model which is built in ETABS. The material properties include M25 grade concrete and Fe 500 grade steel which are assigned according to IS 456:2000. The dead loads and live loads are calculated and applied according to IS 875 (Part 1 and Part 2). The seismic parameters are established according to IS 1893 (Part 1):2016 and the corresponding load combinations are produced.

The structure undergoes analysis which tests gravity and lateral loads to determine internal forces and storey displacements and drifts. The design process for structural components which include slabs and beams and columns and footings uses IS code provisions for manual design work. The study results undergo evaluation to determine safety and serviceability and economic efficiency.

Plan of Model:

- The building design uses a rectangular plan which measures 35.20 meters by 15.35 meters.
- The building consists of nine floors which use a G+8 RCC framework to support its structure.
- The building contains four residential units on every level of its structure.
- The building uses a column grid system which enables efficient weight distribution throughout the structure.
- The building includes two staircases which designers positioned at equal distances from each other to enable building access for all users.
- The lift core position exists at the building's central region.
- The building design uses a regular plan layout which helps reduce torsional movements.

Building Parameters:

Type of structure: RCC framed structure
Number of storeys: G+8
Floor-to-floor height: 3.0 m
Column size: 230 mm × 600 mm
Beam size: 230 mm × 450 mm
Slab thickness: 125 mm
Concrete grade: M25
Reinforcement steel: Fe 500
Soil type: Medium soil
Safe bearing capacity of soil: 300 kN/m²

VI. CONCLUSION

The review paper provides an extensive study of multistory RCC building analysis and design which specifically examines G+8 residential structures that were evaluated through ETABS software. The literature review shows that advanced structural analysis tools together with Indian Standard code compliance bring better building design results through improved accuracy and safety and operational performance. The studies found that gravitational load assessment needs to be done for determining member sizes but seismic assessment needs to be included for mid-rise structures which exist in areas with moderate seismic activity. The analysis results depended on proper modeling techniques which required accurate mass definition and diaphragm action assessment and specific load combination selection. The studies which had been reviewed showed that shear walls together with regular building layouts and appropriate floor systems function as essential elements for controlling lateral displacements and storey drift. The manual checking of software results still remains a necessity for the assurance of code compliance and constructability. The studies which were reviewed demonstrated that architects should combine ETABS analysis with code-based design procedures to create multistorey RCC buildings which meet safety requirements and serviceability standards while remaining cost-effective.

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