Company Profile

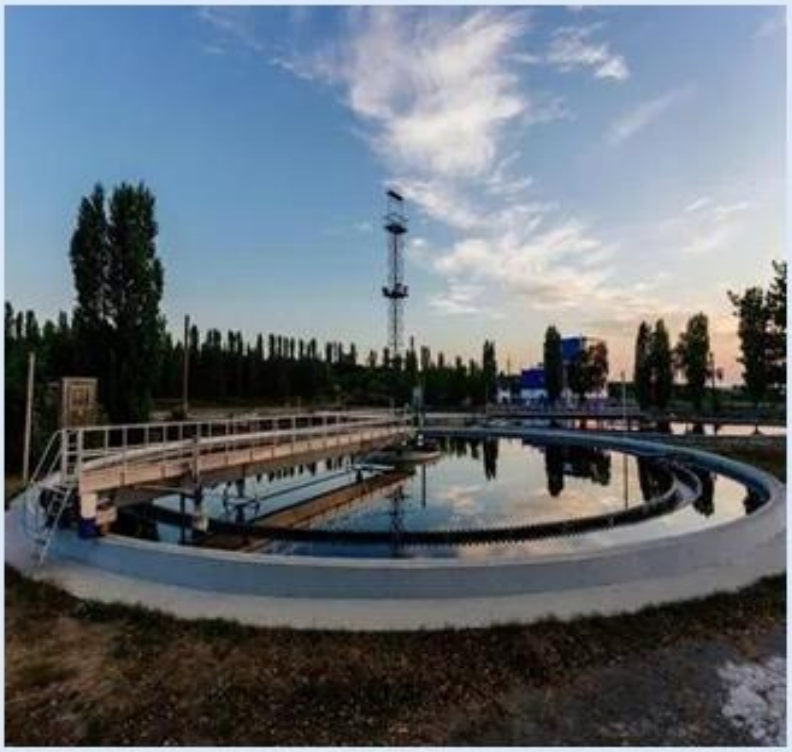
OUR SOLUTIONS ARE CONSISTENT WITH THE GOALS OF OUR CLIENTS

www.4ddesign.co.in

4TH D DESIGN
STRUCTURAL CONSULTANTS

2026

CONTENT



ABOUT US

4TH D Design Structural Consultants has been delivering engineering design services for the built environment since 2012 in Nagpur, providing reliable and efficient structural solutions across Residential, Commercial, Industrial and Infrastructure sectors.

The organization is supported by a team of highly qualified professionals possessing diverse experience, specialized technical skills, strong administrative capabilities and a commitment to excellence.

With over fourteen years of operational experience, the firm takes pride in delivering high-quality services through a multidisciplinary team with expertise across various domains.

4TH D Design Consultants is directed by Mr. M. B. Saiwala (M.Tech-Structural Engineering, VNIT Nagpur). Drawing on extensive experience with top-tier engineering organizations, Mr. Saiwala provides the technical vision and strategic leadership that define our firm's commitment to structural excellence and innovation.

We stay at the forefront of the industry by utilizing an advanced suite of legal engineering software including ETABS, SAFE, STAAD.PRO, RCDC and ADVANCED STEEL.

This allows us to provide high-precision structural analysis and value engineering that significantly reduces material waste while maximizing structural performance.

CLIENT ORIENTED COMMITMENT

Share your objectives, vision, schedule and budget so we can assess the feasibility of your project. This allows us to provide the most economical and efficient design.

From the initial feasibility studies through planning, development and design we help you deliver a quality solution on time with considering safety and economy.

4TH D DESIGN prides itself on listening to your goals and recommending the most efficient design. We work closely with our clients to ensure every technical detail aligns with their long-term vision.

We are pleased to work directly with Architectures, owners, large government agencies, contractors and support of other engineering firms.

Our extensive experience across the Indian region over the last **14 years** speaks to the true value that **4TH D DESIGN** brings to the project team. We provide innovative designs utilizing proven technologies—all delivered safely, on schedule, and on budget, every time.

Our commitment is to transform complex engineering challenges into streamlined, durable, and cost-effective realities.

OUR VISION

The organization is driven by a vision to deliver world-class engineering solutions that support the development of modern, safe and sustainable cities.

OUR MISION

To deliver high-quality, efficient and innovative engineering solutions while creating ideal projects that meet global standards and to expand our presence in India and Overseas.

OUR VALUES

We operate on a strong foundation of core values and principles shaped by the contributions of our team and founder. The company is committed to maintaining the highest standards of quality in every service delivered to clients, providing innovative, efficient, and value-driven solutions.

OUR WORK PROCESS

- **INITIAL MEETING**

  The initial meeting is conducted to understand the project requirements, functional needs, and design criteria. We review available data such as architectural drawings, site details, and project specifications to establish the design basis.

- **PROPOSAL & PRELIMINARY DESIGN**

  Based on project inputs, we prepare a design proposal and develop preliminary structural schemes. Various options are evaluated considering structural efficiency, safety, and economy.

- **STRUCTURAL ANALYSIS & DESIGN DEVELOPMENT**

  Detailed structural analysis is carried out using advanced software tools. The design is developed with proper consideration of loads, stability, and code requirements, along with preparation of structural layouts and key design details.

- **DETAILED DESIGN & DOCUMENTATION**

  Final structural drawings and detailed design documents are prepared for execution. This includes reinforcement details, connection designs, material specifications, and calculation reports, ensuring clarity for construction and compliance with relevant standards.

DIRECTOR
Mr. Mangesh .B .Saiwala

QUALIFICATIONS :

- **Academic Qualification: -**

  B.E (civil), M-Tech (Structure) from V.N.I.T.

MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS (LICENSEE/ASSOCIATE) :

- Nagpur Municipal Corporation (NMC/L - 631)
- Nagpur Municipal Corporation structure (NMC STR. - 03/SEPWD/CQC/2013)
- Nagpur Improvement Trust (NIT - 2327)
- Chartered Engineer (AMIE - AM154055-9)
- Indian Institute Of Valuer (F-27235)
- Pimpri - Chinchwada Municipal Corporation (Structural Engineer)
- Pune Municipal Corporation (Structural Engineer)

EXPERIENCE :

- 16+ year's experience of working as a consulting civil engineer and structural Designer.

- Worked over projects like Residences, Residential schemes, Industrial Projects, Minor Bridges, Complexes, Temples, Space frame structure, PEB structures, Sewage and Water Treatment Plant etc.

OUR TEAM

- Mr. Sanket N. Thawri (Engineer)
- (B.E. Civil, M.Tech Structural Engineering)
- 2+ year experience on Structural Analysis and Design of R.C.C Structure.

- Ms. Snehal K. Shinde (Engineer)
- (B.Tech Civil, M.Tech Sructural Engineering)
- 2+ year of experience on Structural Analysis and Design of Steel Structure.

- Mr. Ketan D. Khadse (Engineer)
- (B.Tech Civil, M.Tech Structural Engineering)
- 1+ year of experience on Structural Analysis & Drafting of R.C.C Structure.

- Mr. Harish G. Bhoyar (Engineer)
- (B.E Civil)
- 5+ year of experience in Structural Drafting.

- Mr. Harshal D. Kotangale (Engineer)
- (DCE Civil)
- 3+ year of experience in Structural Drafting.

OUR SERVICES

With over **14+ year's** experience and real focus on customer satisfaction, you can rely on us for your next project, we provide **Structural Design Services, Engineering Services Project Management & Structural Audit Services Across all over India.**

Engineering Services

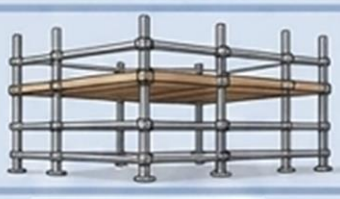
Structural Design Services

We give the best services to your business.

Project Management Services

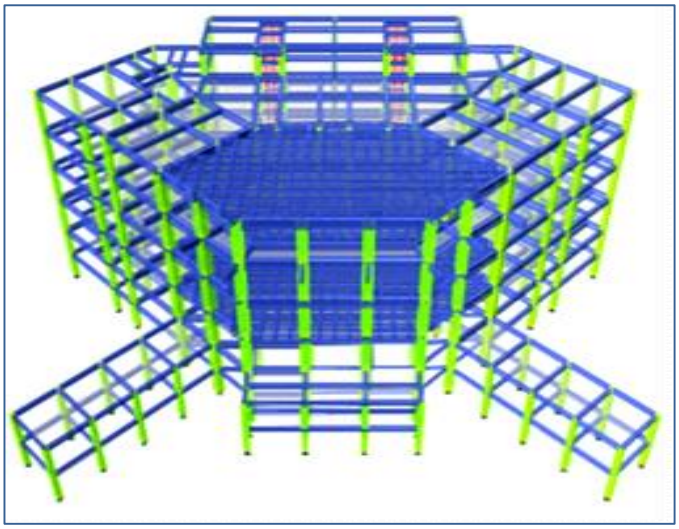
Structural Audit Services

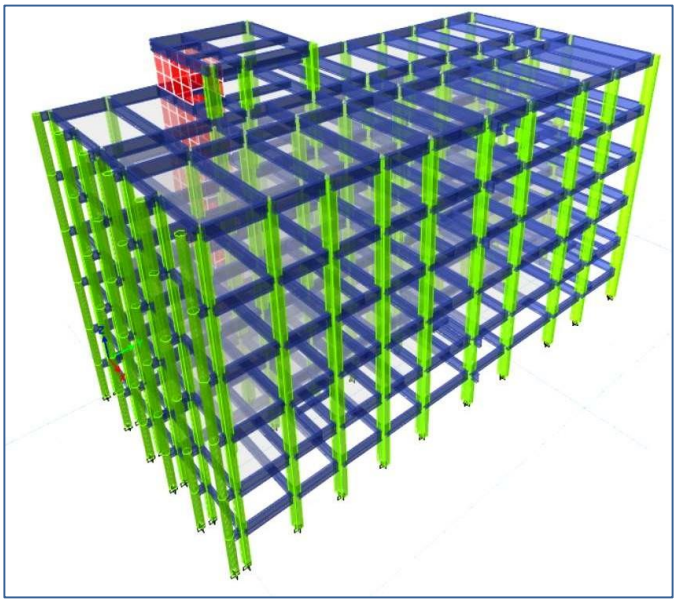
SERVICES WE OFFERS

01		ANALYSIS AND DESIGN OF RCC STRUCTURES.
02		WATER RETAINING STRUCTURES (WTP/STP).
03		INDUSTRIAL STRUCTURE LIKE TRUSS, SHED, PIPE RACK, CONVEYERS ETC.
04		PRE ENGINEERED BUILDING (PEB) DESIGN SERVICES.
05		SCAFFOLDING / SHUTTERING DESIGN.
06		STRUCTURAL DRAWING VETTED FROM IIT AND NIT.
07		STRUCTURAL ASSESSMENT AND EVALUATION.
08		STRUCTURAL AUDITS.
09		RENOVATION / ADAPTIVE REUSE OF EXISTING STRUCTURES.

ZILA PARISHAD, AMARAVATI

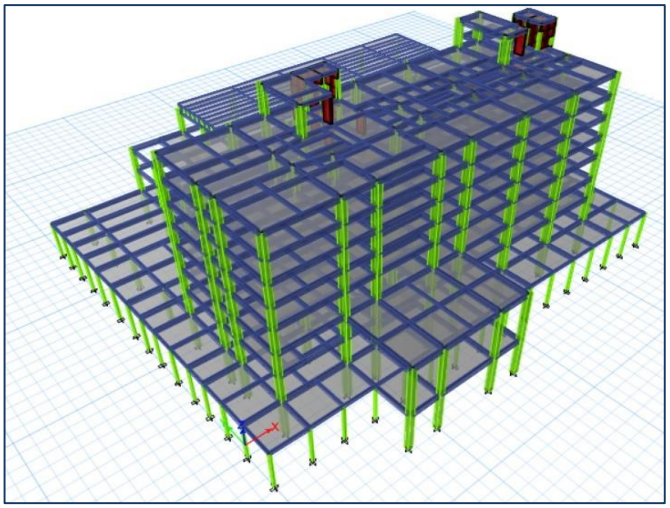
- The Zila Parishad Amravati building, located in Amravati, measures 140x19 meters and stands 21.7 meters tall.
- This G+4 (Ground plus four floors) structure is situated in Seismic Zone II, indicating a moderate earthquake risk.
- As Building length is 140m, it has three expansion joints.
- To enhance safety, the building is designed with an importance factor of 1.5 and a response reduction factor of 5, which reflects its ability to effectively withstand seismic forces and Soil Site Factor II, representing average soil conditions.
- As public building, it employs the Response Spectrum method for seismic analysis and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.

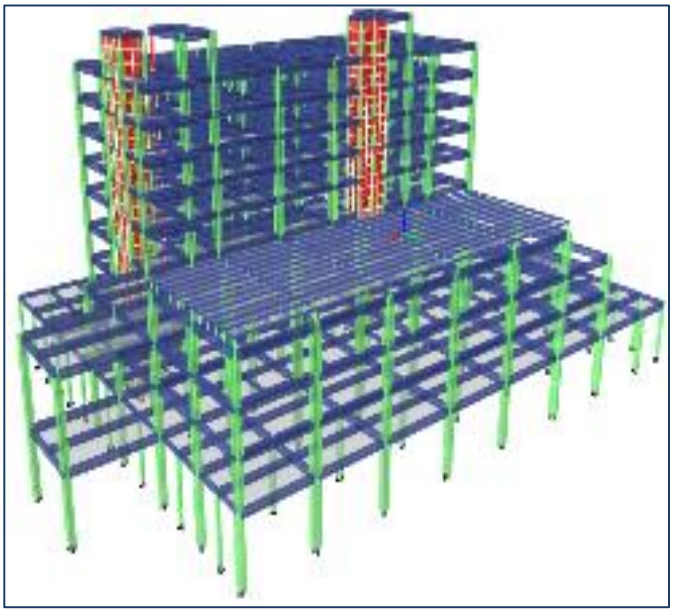




FERN HOTEL, ITANAGAR, ARUNACHAL PRADESH

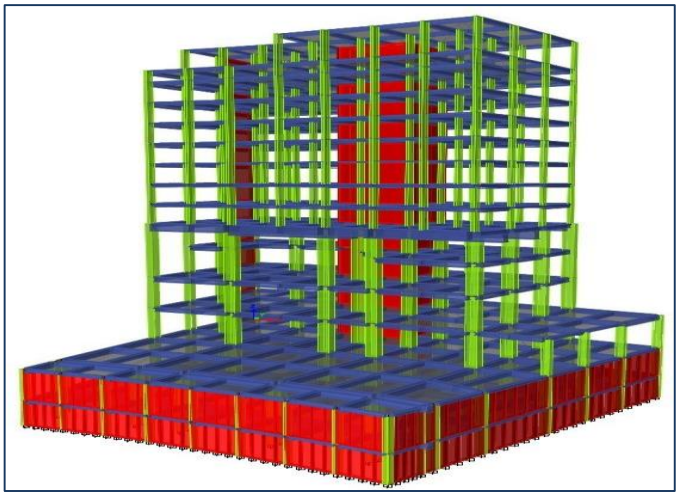
- The Fern Hotel located in Itanagar Arunachal Pradesh, has plan dimensions of 62.5 m × 51 m with an overall height of 30.2 m.
- The structure falls under Seismic Zone V as per IS 1893 (Part 1): 2016, representing a very high seismic risk region in India.
- Temperature stresses is also considered for the analysis of building to avoid expansion joint.
- To enhance safety, the building is designed with an importance factor of 1.2 and a response reduction factor of 5, which reflects its ability to effectively withstand seismic forces and Soil Site Factor II, representing average soil conditions.
- Seismic analysis of the structure has been carried out using Response Spectrum method for seismic analysis and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.

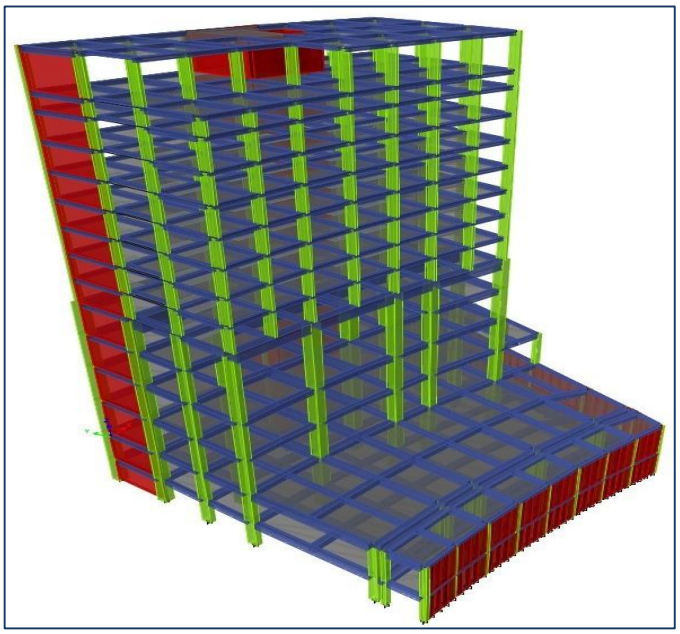




TAJ VIHANTA, BHOPAL

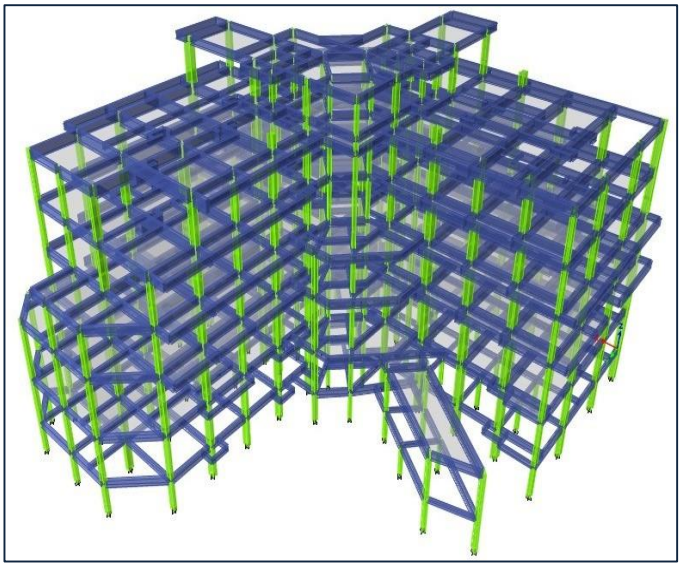
- The Taj Vihanta Hotel, located in Bhopal Madhya Pradesh, has overall height of 48.2 m.
- The structure falls under Seismic Zone II as per IS 1893 (Part 1): 2016, representing a low seismic risk region in India.
- To enhance safety, the building is designed with an importance factor of 1.5 and a response reduction factor of 5, which reflects its ability to effectively withstand seismic forces and Soil Site Factor II, representing average soil conditions.
- Seismic analysis of the structure has been carried out using Response Spectrum method for seismic analysis.
- Design codes used are IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.

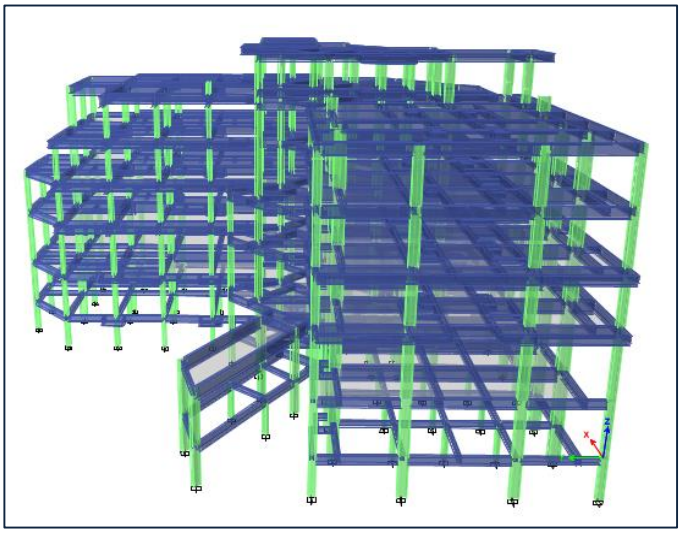




CIRCUIT HOUSE, BHOPAL

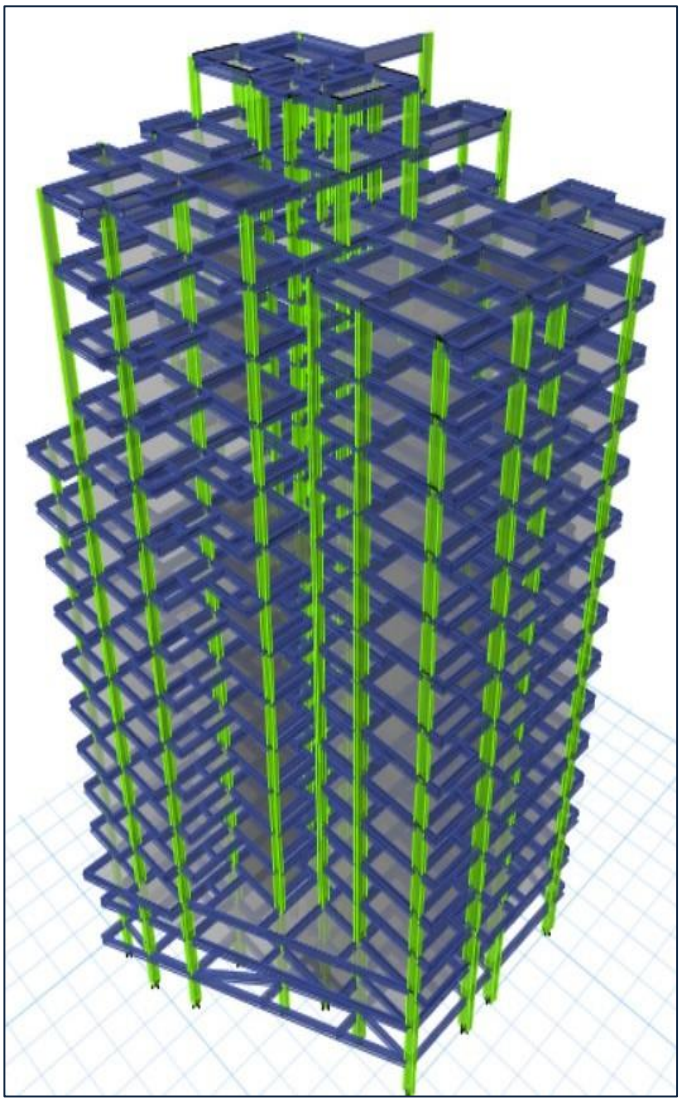
- The Circuit House, located in Bhopal Madhya Pradesh, has plan dimension 43.4m X 39m with an overall height of 24m.
- The structure falls under Seismic Zone II as per IS 1893 (Part 1): 2016, representing a low seismic risk region in India.
- The Structural Design of this project is reviewed and vetted from VNIT Nagpur.
- To enhance safety, the building is designed with an importance factor of 1.5 and a response reduction factor of 5, which reflects its ability to effectively withstand seismic forces and Soil Site Factor II, representing average soil conditions.
- Seismic analysis of the structure has been carried out using Response Spectrum method for seismic analysis and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.





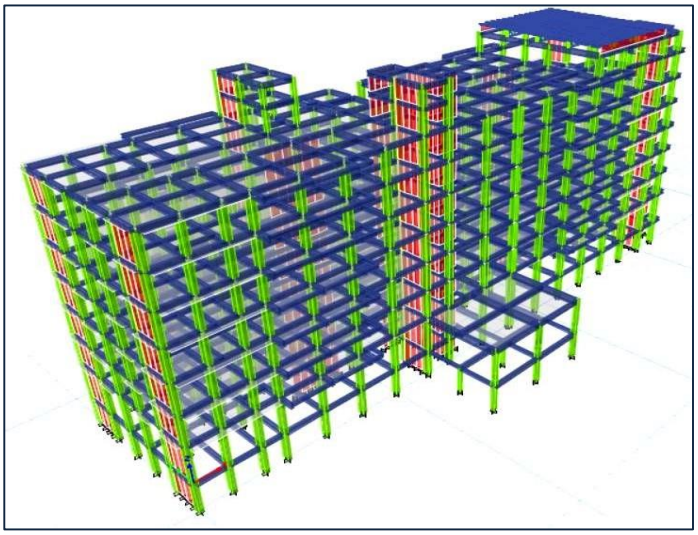
SHRADDHA COMPLEX, CHANDRAPUR

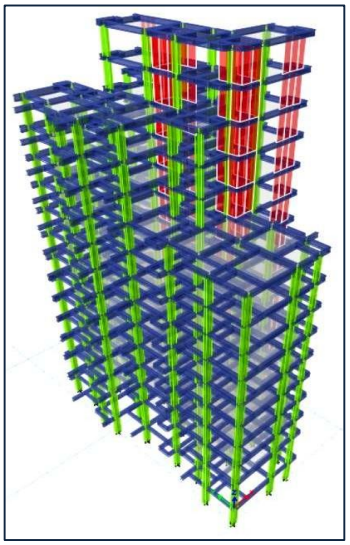
- The Shraddha Complex, located in Chandrapur, Maharashtra has plan dimensions of 35 m × 28.41 m and a total height of 52 m, configured as a G+14 Storey building.
- The structure is located in Seismic Zone II as per IS 1893 (Part 1): 2016, which corresponds to a moderate seismic risk region in India.
- To ensure adequate seismic performance, the building is designed with an importance factor (I) of 1.2 and a response reduction factor (R) of 5, reflecting a structure with moderate ductility and enhanced safety considerations.
- Seismic analysis has been carried out using the Response Spectrum Method in accordance with IS 1893 (Part 1): 2016. Additionally, ductile detailing provisions as per IS 13920:2016 have been incorporated to improve the overall seismic resilience, structural integrity and performance of the building during earthquake events.

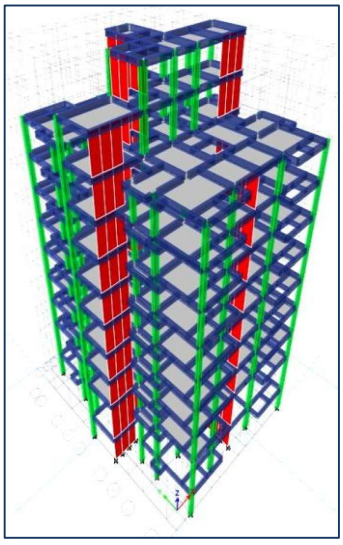


FSL, NAGPUR

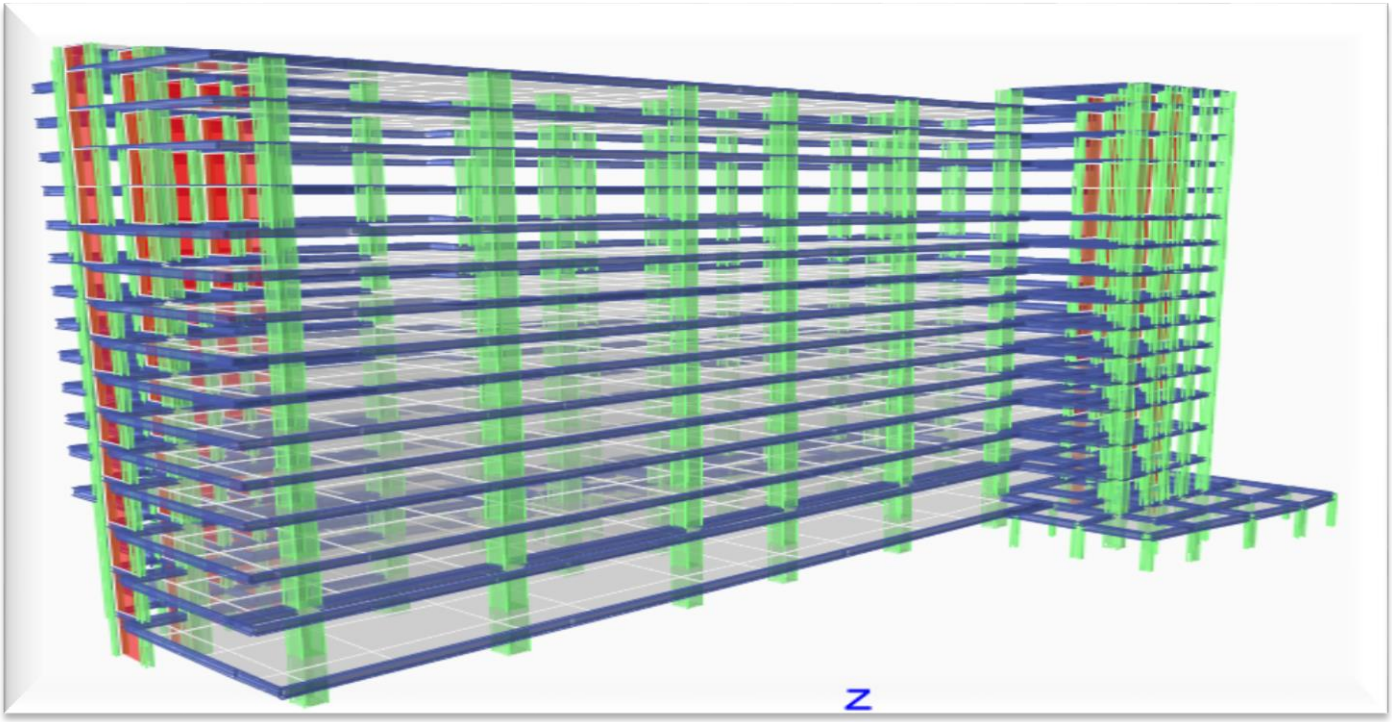
- The Forensic Building, located in Nagpur, Maharashtra, including Building-1(G+6), Building-2(G+7) and Building-3(G+11).
- The structure falls under Seismic Zone II as per IS 1893 (Part 1): 2016, representing a low seismic risk region in India.
- The Structural Design of this project is reviewed and vetted from VNIT Nagpur.
- Building is provided with one expansion joint.
- Seismic analysis of the structure has been carried out using Response Spectrum method for seismic analysis and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.



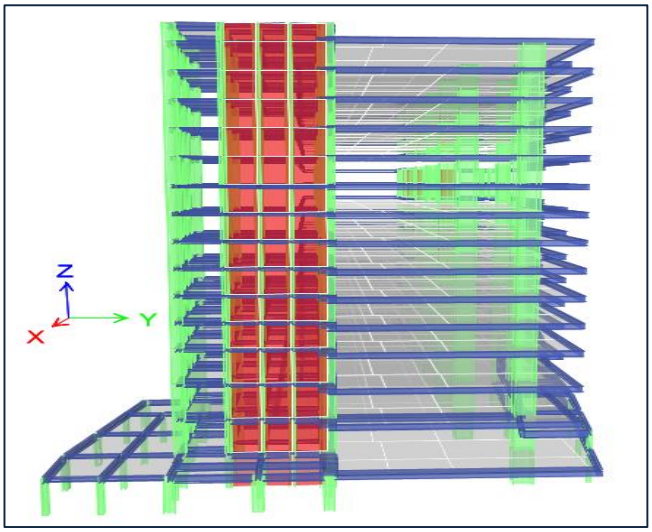


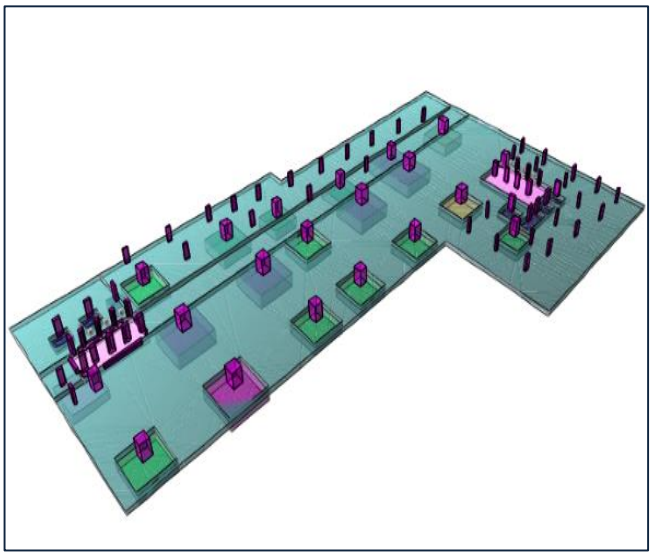


ORANGE CITY MALL, NAGPUR



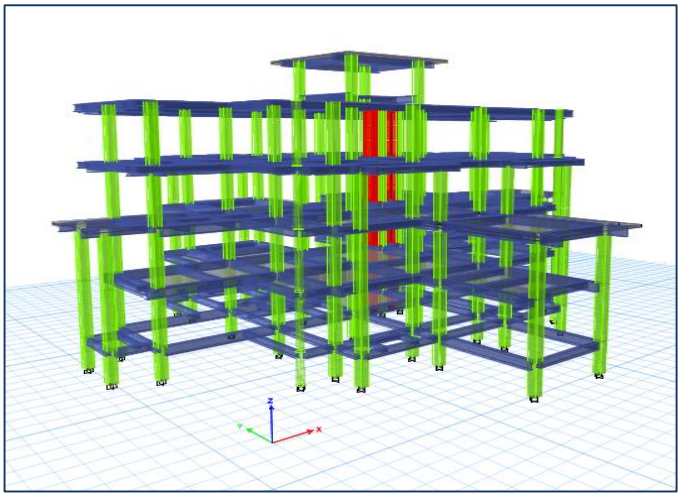
- The Orange City Mall (OCM), located in Nagpur spans 90x41 meters and rises to a height of 49.15 meters.
- This LB+UB+G+12 structure is located in Seismic Zone II, the moderate earthquake risk zone in India.
- To ensure enhanced seismic safety, the building is designed with an importance factor of 1.5 and a response reduction factor of 5, indicating high seismic resilience.
- As a public building, it employs the Response Spectrum method for seismic analysis using ETABS software and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with stringent seismic safety standards.
- Foundation is designed using SAFE software.

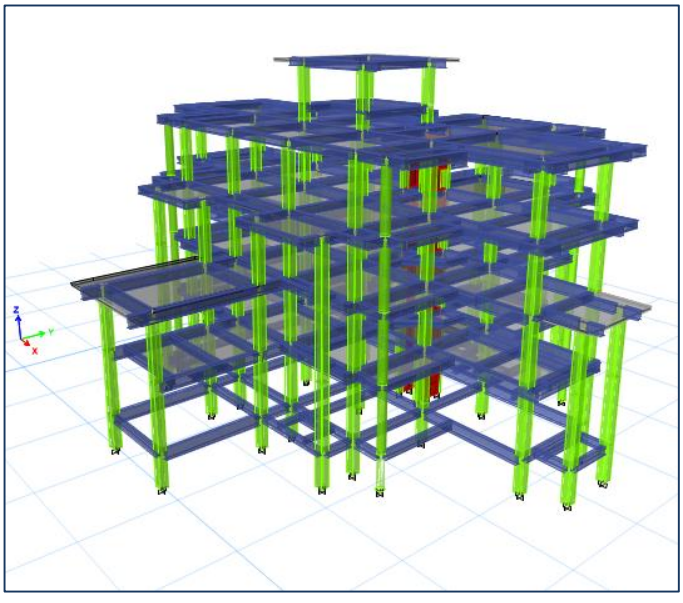




TECHI TAMA BUNGALOW, ARUNACHAL PRADESH

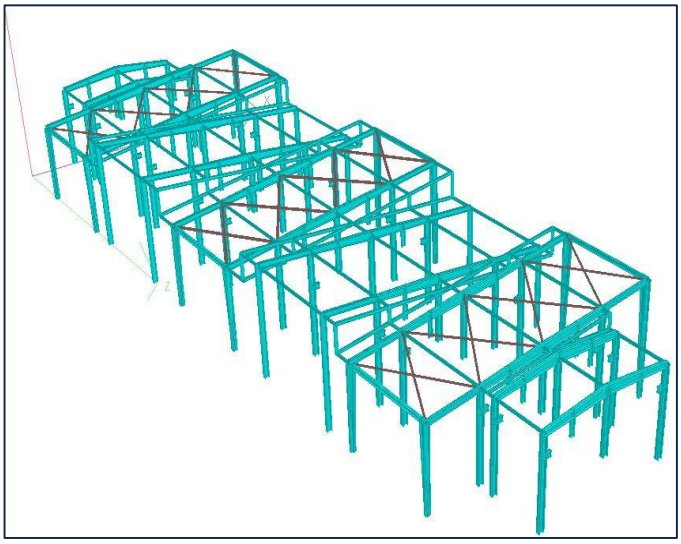
- Techi Tama Bungalow, located in Arunachal Pradesh, has three storey building.
- The structure falls under Seismic Zone V as per IS 1893 (Part 1): 2016, representing a high seismic risk region in India.
- A harmonious blend of elegance and function, this architectural creation showcases timeless design with modern living.
- To enhance safety, the building is designed with an importance factor of 1 and a response reduction factor of 5, which reflects its ability to effectively withstand seismic forces and Soil Site Factor II, representing average soil conditions.
- Seismic analysis of the structure has been carried out using Response Spectrum method for seismic analysis and adheres to the design codes IS 1893:2016 and IS 13920:2016 to ensure structural integrity and compliance with seismic safety standards.





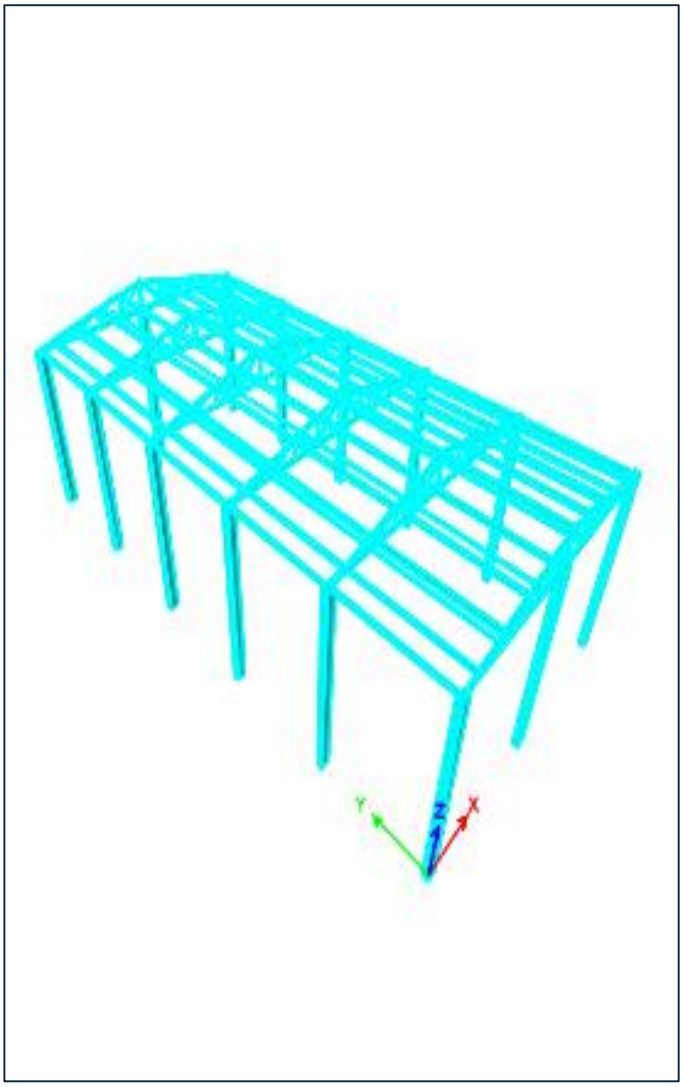
ZHANSI RANI METRO STATION TRUSS, NAGPUR

- The Zhasi Rani Metro Station PEB Roof, located in Nagpur, Maharashtra measures 78x23 meters and has a height of 8.7 meters.
- The image illustrates the STAAD model developed for the structural design.
- The design focuses on optimizing steel usage while ensuring structural stability, safety, and long-term performance under various loading conditions, including dead load, live load, wind load, and seismic forces as per relevant codes.
- Advanced structural analysis and modeling tools were utilized to achieve an economical and robust design. Special attention was given to connection detailing, serviceability criteria, and ease of fabrication and erection to ensure smooth project execution.

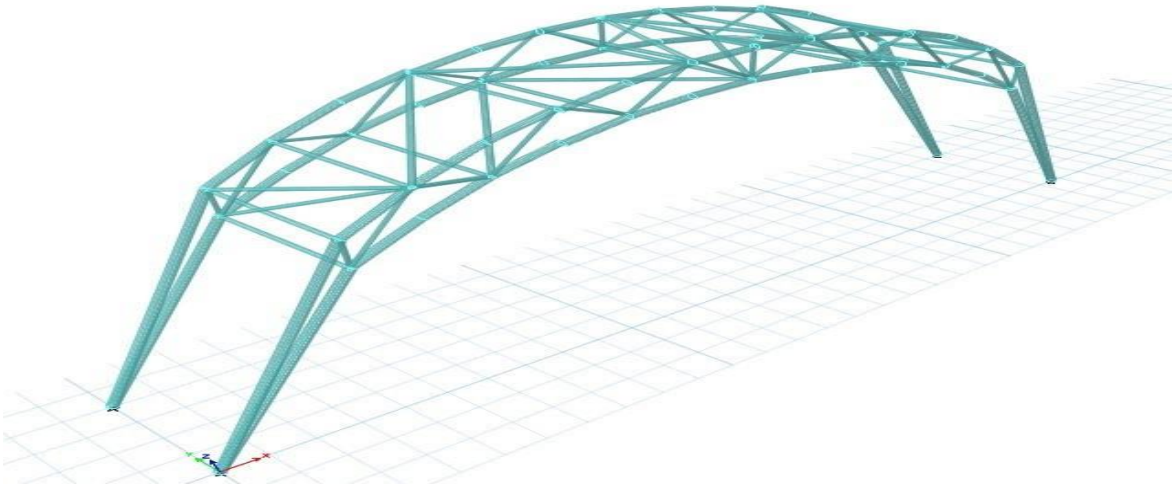


TRUSS

- Trusses of various types—such as Pratt, Howe, Warren, and Fink—are designed to meet structural efficiency and project requirements.
- Trusses of spans 8 m, 10 m, 16 m, and 20 m are designed to meet project requirements efficiently.
- Design is carried out using STAAD.Pro and ETABS software.
- All designs are carried out in accordance with relevant Indian Standard codes (IS 800, IS 875, IS 1893), ensuring safety, reliability, and compliance.
- Detailed drawings of joint, connections & sections are provided.



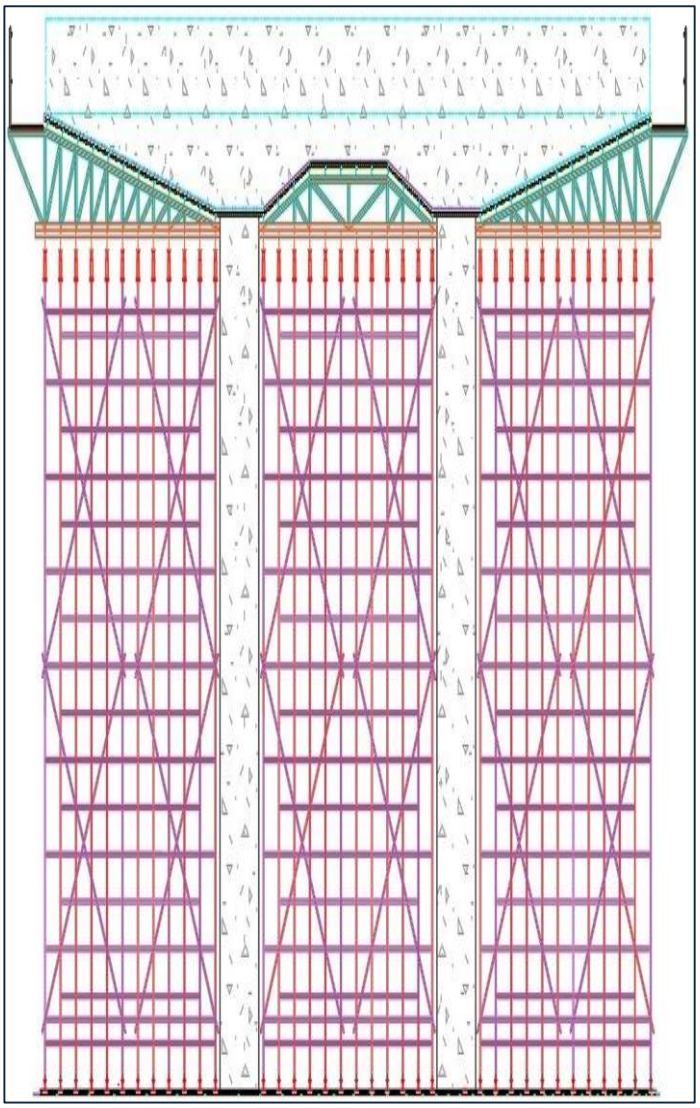
GREAT HORNBILL GATE, ARUNACHAL PRADESH



- The Great Hornbill Gate in Arunachal Pradesh is an iconic steel structure designed for both aesthetics and structural safety. The structure is modeled and analyzed using ETABS software, with detailed wind analysis carried out as per IS 875 (Part 3).
- The steel framework is designed to effectively resist wind loads, ensuring stability, strength, and controlled deflection. Proper member sizing and bracing systems are incorporated to meet safety and serviceability requirements.

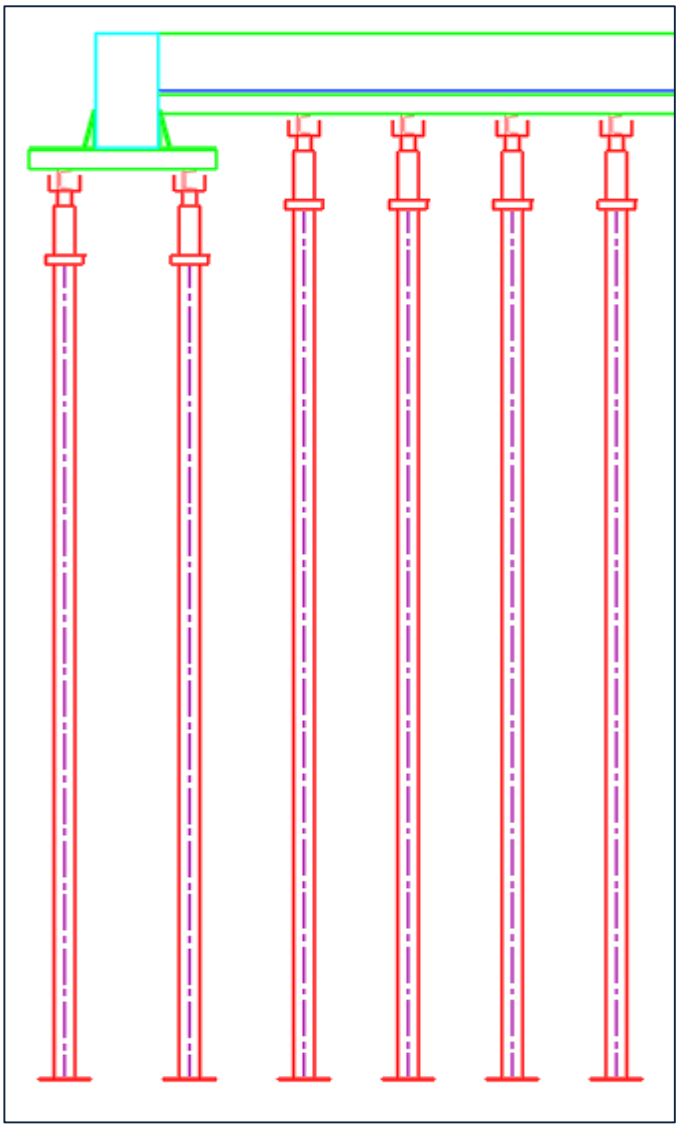
FLYOVER SHUTTERING, GADCHANDUR

- The Gadchandur Flyover project involved detailed shuttering analysis and design of structural systems using ETABS, with careful assessment of loads relevant to formwork design as per IS 875.
- The structural model was developed to accurately evaluate load transfer mechanisms, member forces, and staging requirements during various construction stages.
- The shuttering system was designed considering fresh concrete pressure, construction loads, and overall stability of staging arrangements.
- Support reactions and load effects were derived from ETABS analysis to ensure safe and efficient performance.
- Comprehensive design calculations and detailed reports were prepared, ensuring compliance with relevant standards, serviceability criteria, and practical site requirements.



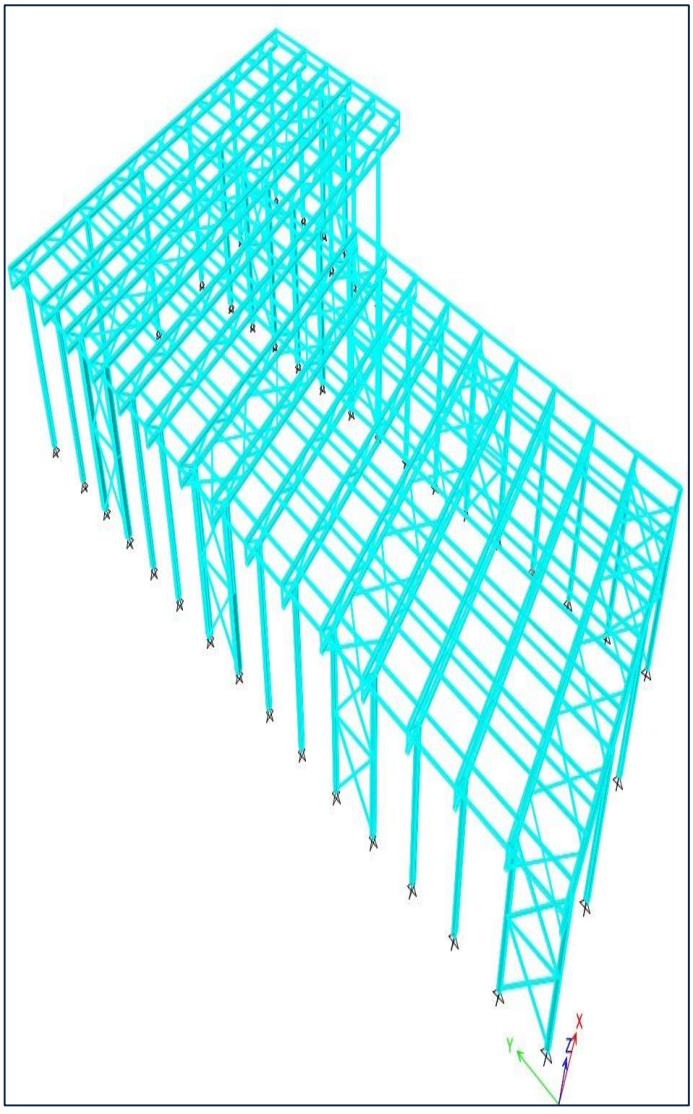
BUILDING SHUTTERING

- The Building Shuttering project involved detailed shuttering analysis and design of structural systems using ETABS, with careful assessment of loads relevant to formwork design as per IS 875.
- The structural model was developed to accurately evaluate load transfer mechanisms, member forces, and staging requirements during various construction stages.
- The shuttering system was designed considering fresh concrete pressure, construction loads, and overall stability of staging arrangements.
- Support reactions and load effects were derived from ETABS analysis to ensure safe and efficient performance.
- Comprehensive design calculations and detailed reports were prepared, ensuring compliance with relevant standards, serviceability criteria, and practical site requirements.



SOLAR FRAMING

- The solar panel shed at the MBA Department, Dhanwate College, Nagpur, with a span of 15.5 m × 47 m and a height of 4 m, was analysed and designed as a steel structure using ETABS software.
- A detailed structural model was developed to accurately evaluate load distribution, member forces, and overall structural behaviour. The design considers all relevant loads, including dead load, live load, wind load, and solar panel loads, ensuring stability, strength, and serviceability of the structure.
- All analyses and designs were carried out in accordance with applicable Indian Standards such as IS 875 (Part 1, 2 & 3) and IS 800:2007.
- Comprehensive design calculations and detailed reports were prepared to ensure safety, full codal compliance, and ease of fabrication and erection, resulting in an efficient and durable structural solution.



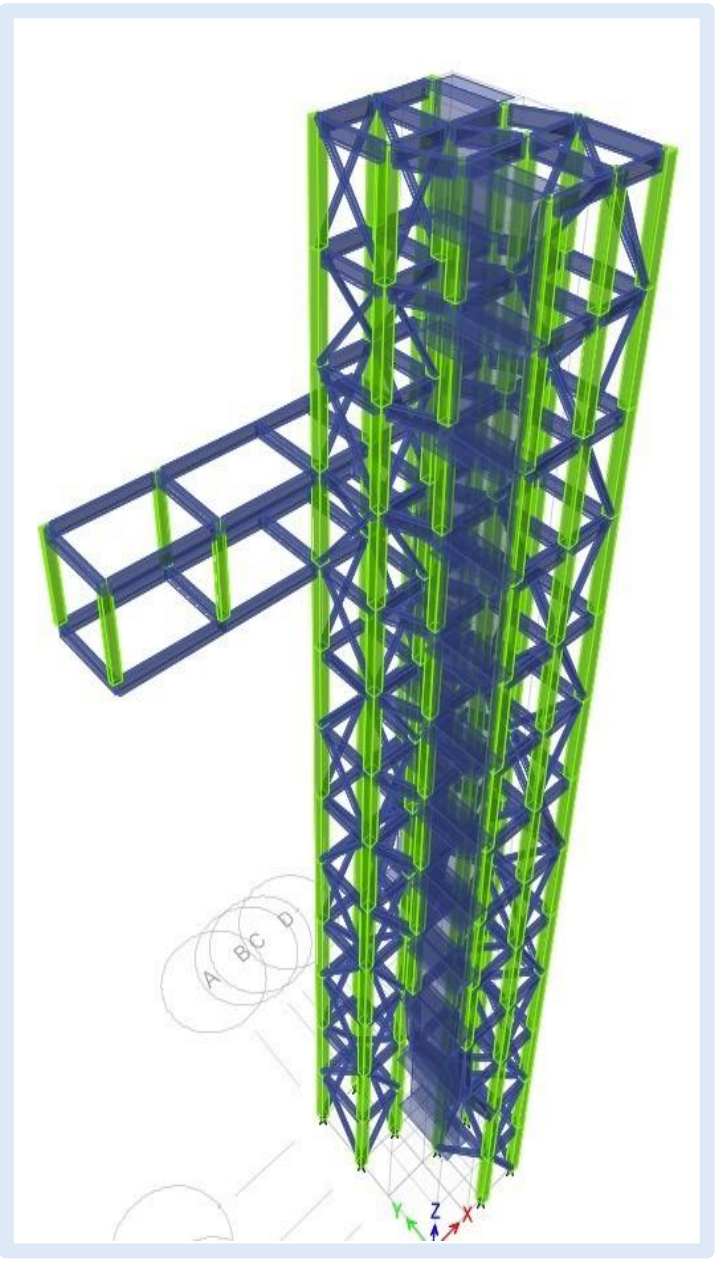
WTP & STP, ARUNACHAL PRADESH

- Our firm has extensive experience in the structural design and detailed engineering of water treatment and utility infrastructure, including :
  - Pre-Sedimentation Tanks,
  - Sedimentation Tanks,
  - Aerators, Flash Mixers,
  - Filter-cum-Chemical Houses,
  - Clear Water Reservoirs (CWR)
  - Clariflocculators.

- Comprehensive design calculations and detailed structural reports are prepared for each project to ensure accuracy, safety, and ease of execution.
- We have successfully contributed to several key water supply projects under AMRUT 2.0 and related initiatives, including Augmentation and Improvement of Water
  Supply at :

  - Kharsang Township,
  - Daporijo Township (4.2 MLD),
  - Kanubari Town (1.60 MLD),
  - Khonsa Township – Phase 2 (2.50 MLD),
  - Naharlagun (4.50 MLD) along with many other similar infrastructure projects, supported by complete design documentation and reports.

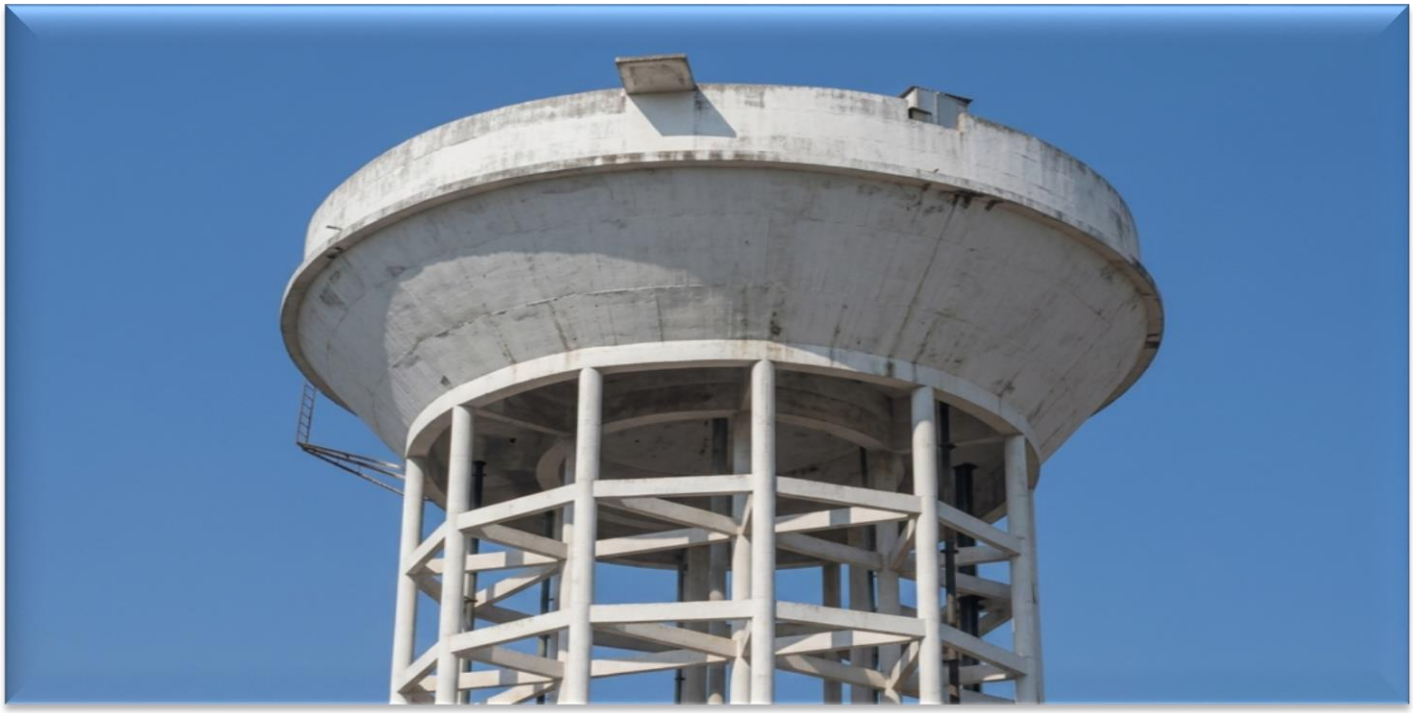
DR. BABASAHEB AMBEDKAR STATUE



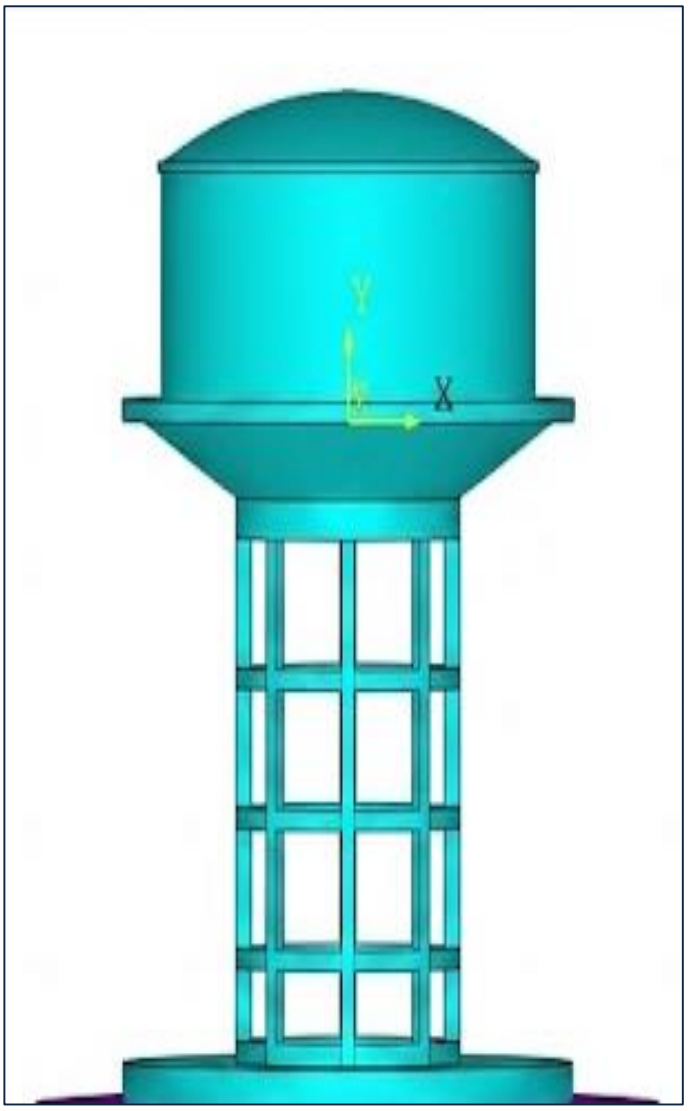
- The statue of Dr. Babasaheb Ambedkar at the Dr. Babasaheb Ambedkar Convention Centre, Mouza Indora, Kamptee Road, Nagpur, was structurally analysed and designed using ETABS software to ensure safety, stability, and durability under various loading conditions.

- The model incorporated dead load, wind load, and seismic load as per IS 875 and IS 1893 (Part 1): 2016, considering Nagpur falls under Seismic Zone II.

INTZE WATER TANK



- We provide structural design services for Intze-type water tanks ensuring safe, efficient, and economical solutions.
- Designs are carried out as per relevant Indian Standard codes (IS 3370, IS 456, IS 875, and IS 1893).
- Design includes staging system, foundation design, and seismic considerations based on site conditions.
- Our deliverables include detailed structural drawings and comprehensive calculation reports covering analysis, design, and stability checks.



STRUCTURAL AUDIT WORK

- We offer professional Structural Audit and Condition Assessment to evaluate the safety, stability, and durability of existing structures.
- Our process combines detailed visual inspection with advanced Non-Destructive Testing (NDT) methods to identify defects, deterioration, and structural risks.
- Our audit process begins with a thorough visual inspection to assess cracks, deflections, corrosion, leakage, and overall structural condition.
- This is followed by a series of Non-Destructive Tests (NDT) to obtain accurate insights into material properties and structural integrity without damaging the structure.
  - Ultrasonic Pulse Velocity (UPV) Test
  - Rebound Hammer Test
  - Half-Cell Potential (HCP) Test
  - Carbonation Test
  - Rebar Scanning
  - Visual Inspection

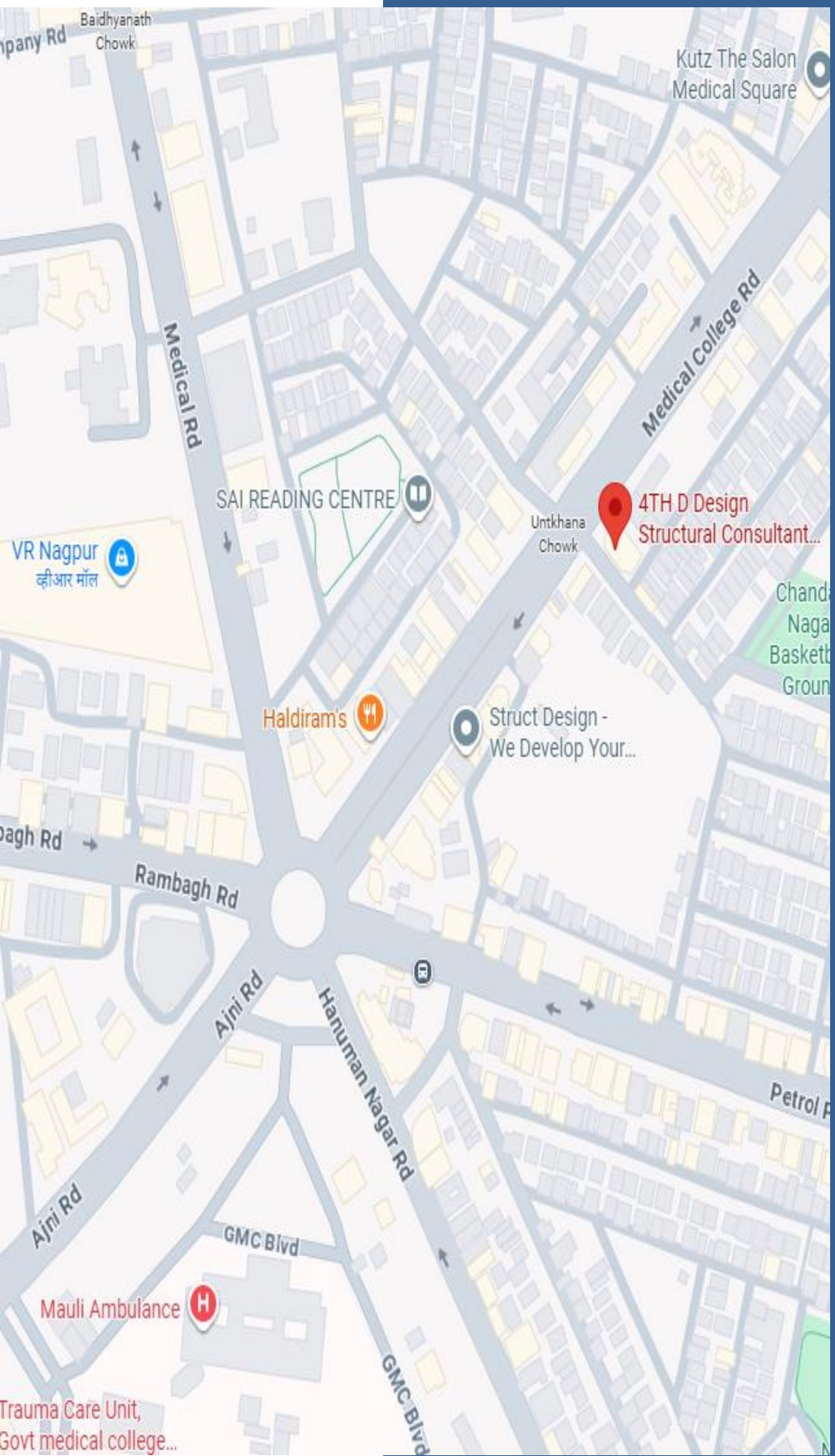
STRUCTURAL AUDIT WORK

PROJECT MANAGEMENT SERVICES

SERVICES

- Project Planning
- Project Scheduling
- Detailed Project Report's
- Value Engineering
- On Site / Off Site Management
- Approvals from Various Bodies – from Start to Handing Over (Statutory Appraisals) Vendor & Material Management Tendering Cost Estimates, Bid Process, Agreements with Vendors (Vendor Registrations)
- Quantity Survey, BOQ's, Rate Analysis
- Material Specification
- Quality Audit & Quality Check

4TH D DESIGN
STRUCTURAL CONSULTANTS



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