



MITHUN SARKAR

Lead Civil Structural Engineering Design & Management

A technically astute, strategically focused, loyal, decisive, and high-energy professional with a proven track record of successfully executing prestigious small to large-scale underground and surface structural projects within strict time schedules, cost constraints, and quality standards

✉ mithunbesu@gmail.com, mithunbesu@yahoo.co.in

🌐 https://t.ly/_dtr

📞 +91-9903-222-028



Profile Summary

- ▶ **Chartered (India) Civil, Structural Design Engineer** offering illustrative experience of more than 16 years
- ▶ Proficiency in overall managing Structural, MEP & Geotechnical teams, comprehensive **design engineering operations** involving **concept design, FEED** (Front End Engineering Design) & **detailed design development**, maintaining coordination with internal departments as a part of multidiscipline project team with strong commitment to **safety**
- ▶ Steered range of tasks pertaining to directing team, day-to-day job planning, monitoring, and resource allocation
- ▶ Domain exposure **Underground Metro Project, TBM driven & SCL tunnel, Station Box & Shafts, Material Handling Project, Marine Project, Power Plant Project, Revamp Project, Residential Project, Industrial Project**
- ▶ Skills in spearheading entire gamut of operations entailing detail designing and reviews before submission as per review procedures, design planning and implementation, resource and time management, coordination with other disciplines
- ▶ Designed & assessed permanent/temporary structure such as **Secant Pile, Casting Yard, Retaining Wall, Road Diversion, Traffic Decking, Reaction Frame, Cradle Beam, Industrial Shed, PEB, Residential building**, various foundations for crawler & heavy equipment
- ▶ Skills in code of practice of **Indian, Euro Codes with national annex, International Standard Organization codes (IS, IRC, BS, ACI, AISC (LRFD))**
- ▶ **Planned, developed, designed, and implemented structural blueprints** based on engineering specifications and technical drawings
- ▶ Expertise in reviewing the engineering/ design changes and resolving quality related problems associated with design, final checking, and release of engineering drawings for the development



Core Competencies

Civil-Structural Design Engineering

Client Relationship Management

Liaison & Coordination

Team Building & Leadership

Technical Evaluation

Tender & Project Management

Underground Structural Engineering

Strategy Planning & Execution

Front End Engineering Design (FEED)



Career Timeline (Recent 4 Associations)



Technical Skills

- ▶ STAAD. Pro
- ▶ Wallap
- ▶ Rocscience RS2
- ▶ Midas GTS NX
- ▶ ETABS and SAFE
- ▶ Microsoft Office (Word, Excel, PowerPoint)
- ▶ AutoCAD 2D
- ▶ Finite-Element Modelling & Post- Processing (FEMAP)
- ▶ NASA Structural Analysis (NX- NASTRAN)



Education

- **Master of Engineering** in Structural Engineering from Indian Institute of Engineering, Science & Technology, Shibpur in July 2016
- **Bachelor of Engineering** in Civil Engineering from Bengal Engineering & Science University, Shibpur in July 2008

Work Experience

Lead Engineer, WS Atkins India Pvt. Ltd., Gurugram

June'24 – Till Date

Key Result Areas:

- Participates in developing and implementing engineering practices, workflows, and procedures, especially for UK Rail projects
- Represents the Global Design Centre-India (GDC) in reviews of work activities and projects; monitors workflow and progress
- Consults with and makes recommendations to SMEs and Project Management Teams; controls KPIs and benchmarks for estimating materials and man-hours
- Contributes to optimizing engineering practices based on collected KPIs
- Ensures high quality of deliverables for design work
- Performs man-hours calculations using the Discipline Calculation Tool
- Participates in developing technical standards and specifications, adhering to UK rail standards
- Ensures documentation is prepared, checked, and approved per the UK Project Quality Plan
- Leads initiatives for adopting new technologies and innovative approaches in engineering
- Provides training and mentorship to junior engineers to foster skill development

Technical Director- Structures, Gall Zeidler Consultants India Pvt. Ltd., Gurugram

Nov'21 – June'24

Key Result Areas:

- Overall Technical Lead of GZC India office, leading team of Structure, MEP & Geotechnical
- Detail designing of underground Structures and TBM driven & SCL tunnel as per Eurocode and relevant National Annexures
- Independent Category III checking of many underground structures for High-Speed Rail Project, UK
- Reviewing of varied underground structures include independent review, validation of all the structural design and drawings
- Performing specific and moderate portions of a broader assignment as a lead technical engineer
- Guiding entry level engineers and performing at this level by fulfilling developmental experience in a professional position
- Technical lead engineer of all the Indian projects
- Thorough technical evaluation of tenders
- Actively contributing to business development for underground projects
- Assessment of quantity and manpower for a project

Senior Structural Design Engineer, AECOM India Private Ltd., Pune

Aug'19 – Oct'21

Pune Metro Detail Design Consultant/Proof Consultant for underground Stations

Key Result Areas:

- Proof-checker of Pune Metro Rail Project include independent review, validation and approval of all the structural and Geotechnical design and drawings associated with underground works as a professional and experienced consultant providing full consultancy services
- Reviewed & worked on detailed or routine engineering assignments involving calculations and software analysis of all permanent & temporary structures for Pune Metro Rail Project
- Analysed temporary (secant) pile, strut-waler system design and drawings for shaft and station box locations
- Design & reviewed rock bolts/anchors; finalizing NATM tunnel DBR
- Checked of NATM/SCL & TBM driven tunnel design report and drawing
- Steered design review & observations on Cut & Cover Tunnel, U-shaped Ramps Connecting with C&C
- Evaluated Geotechnical Report related to projects
- Assessed general notes drawing related to Station Box, Tunnel using TBM and Cut & Cover Tunnel
- Finalized layout, construction sequence, design parameters and construction methodology

Design Manager, Afcons Infrastructure Limited, Kolkata

Jul'17 – Jul'19

Key Result Areas:

- Overall co-ordination and management of the team, day to day job planning, monitoring and resource allocation
- Performed Wallap, STAAD modelling for simulation of construction sequence including excavation stages, strut installation and consequently calculation of moments and bending pattern
- Designed & reviewed Detailed Design Consultant's design for Top-down & Bottom-up Construction, Diaphragm Wall, Secant Piles, Contiguous Piles, Sheet Piles, Soldier Piles, Timber Lagging/MS Plate Retaining System, Braced Excavation with Strut and Waler and Tension Piles
- Designed enabling structures like Cut-off Wall, Struts Supporting Systems, Soft Eye at Diaphragm Headwall, Cradle, Temporary Stanchions and Kingposts for Underground Stations, Temporary Traffic Decking, End Stoppers for Diaphragm Walls, Muck Disposal Bins, Wheel Wash Platforms, Staging Design and Gantry Foundation
- Assessed Tunnel Segment Design and Tunnel Internal Structures (Walkway, First-bed Concrete, Fire-Hydrant and Cable Brackets)
- Executed design coordination with Detailed Design Consultant (DDC) & General Consultant (GC) regarding various design activities executed and subsequent approval from the consultant/client
- Collaborated with MEP Team, Architectural Team, Execution Team and planned for the uninterrupted execution

Highlights:

- Completed India's first underwater Twin-Tunnel (3.7km approx.) using Tunnel Boring Machine connecting Howrah with Kolkata under river Ganges
- Conducted Engineering of India's deepest Metro station (Howrah Station) and Vent-shaft
- Performed tunnelling operations under quite a few 100 years old & Dilapidated Buildings, Heritage & Archaeological buildings, live railway track (approx. 700m length under the India's busiest Railway Track- Howrah Station), different flyovers. Preparation & implementation of different pre-emptive mitigation measures



Previous Experience

Engineer, Grafix Engineering Consultants Pvt. Ltd., Delhi

Nov'16 – Jun'17

Key Result Areas:

- Performed analysis and design of assorted steel and concrete structures and foundation design
- Cut and Cover Tunnel for conveyor
- Analysed & designed various galleries for Cables & Utility Pipeline, Electrical Substation Building, Electrical Rooms, Cable Trench, Pent House, Transfer Towers, Conveyor Gallery, Conveyor with Movable Hopper, Transit Shed (570mX35m) with Movable Tripper, Piles and Retaining Walls, Technological Structures

Senior Design Engineer, Sandvik Asia Pvt. Ltd., Kolkata

May'12 – Oct'16

Key Result Areas:

- Design of temporary secant piles with strut-waler system for conveyor cut & cover box
- Executed Analysis and design of Stacker-Reclaimer Structures and Foundations
- Facilitated structures like Bogie & Bogie Balancer, Equalizing Girders, Portal Structures, Slew Deck Structures, Elevator Structures, Collapsible & Non-collapsible Tripper Structures, Conveyor Galleries and Industrial Buildings
- Performed Static and Dynamic Analysis for checking of Normal Stress, Strain, Deflection, Fatigue, Von-mises Stresses of line elements and plate elements
- Delivered feasibility study of new and retrofitted structures

Project Engineer – Civil, Power Max (India) Pvt. Ltd., Kolkata

May'11 – Apr'12

Key Result Areas:

- Analysis & design of concrete and steel structures like Wagon Tippler House, Underground Tunnel for conveyor, Junction Houses, Conveyor Galleries, Trestles, Towers, Residential, Commercial Buildings, Roads and Foundations
- Feasibility study of new and retrofitted structures
- Communicate with client to understand exact requirement, also communicate with vendors and other departments to resolve issues

Design Engineer, Basu Consulting Engineers, Kolkata

Aug'10 – Apr'11

Key Result Areas:

- Analysis & design of structures like Raw Material Storage Shed, Furnace Building, Belt Conveyor Galleries, Trestles, Towers, Junction Houses, VGTU, HGTU, Single & Double-Sided Cable Bridge and its supporting Structures, Shallow & Deep Foundations, Roads, Residential & Commercial Buildings
- Visit clients for Design and drawing approvals
- Visit site to check progress and quality

Assistant Engineer, Bridge & Roof Co. (India) Ltd., Kolkata

Sep'08 – Jun'10

Key Result Areas:

- Execution of site, Mix Design, Quality Control, Prepare Bar-Bending-Schedule, Estimation of quantity, drawing and design review of various Steel & concrete Structures like Administration, Canteen, Residential Buildings, Boiler, ESP, Water Tanks, Bawl Mill Foundation, Pipe Rack to Fuel Oil Pump House, Road & Drain etc



Personal Details

Date of Birth: 14th February 1986
Languages Known: English, Hindi and Bengali
Permanent Address: 41/8, 5th Lane, Gitanjali Park, PO-Rajbari, Birati, Kolkata – 700081, West Bengal
Present Address: House No 610, Saraswati Vihar, Chakkarpur, Sector-28, Gurugram, Haryana- 122002
Passport: Z4879484
Driving License: WB-2320160270640 (India)

(Refer to Annexure for Projects Undertaken)

Annexure



Major Projects Undertaken

Project# 1

Greatworth Dry Valley Drop Inlet Culvert: Micro-tunnelling (UK)

Client: High Speed-2, UK (Contract C3: HS2 line between Brackley to South Portal of Long Itchington Tunnel)

Outline: Design and detailing of shafts and pipe jack culvert (RC segmental lining) passing beneath the HS2 network rail track in order to carry watercourses beneath HS2 trace.

Project# 2

Walkway, First Stage Concrete, Cable Adit, Intervention Adit and Chamber between up & down line of Bromford Tunnel (UK)

Client: High Speed-2, UK (Long Itchington Wood Tunnel to Birmingham Interchange Station)

Outline: CATIII check for TBM tunnels, 13 cross passages, 2 connection adits, walkway & FSC. Modelling, analysis and design of the Intervention and Cable adits (ICA) and Cable adits (CA) connecting Bromford bored Tunnel up & down line using MIDAS GTS NX software.

Project# 3

The Greenway, Ickenham, Uxbridge (UK): Thames Water Sewer Diversion

Client: Thames Water Utilities, UK

Outline: CATIII check of the permanent structural elements: Precast RC segmental lining, In-situ cast RC base slab / base plug, Precast RC cover slab, Tunnel eye / headwall structure, In-situ cast RC jacking / flotation collar, shafts (sunk using caissons- Under-reamed/ Base-plug and Bottom-up using sheet-pile excavation).

Project# 4

Euston Station: Substation & Vent-Shaft

Client: High Speed-2, UK

Outline: Checking & approve various TCP due to change of construction sequence like early removal of props after slab pour for bottom-up construction, Checking the impact on permanent superstructure walls due to change of construction sequence from traditional to slip-formed: structural requirements associated with slip-forming the building walls as a hollow core, without restraint from internal slabs.

Project# 5

Tung Chung Line Extension Project, Hong Kong

Client: Mass Transit Railway Corporation (MTR), Hong Kong

Outline: Structural design of ballastless trackforms including Baseplated Concrete Tie (BCT- using non-metallic polypropylene fibre reinforced concrete) and monoblock types (using reinforced concrete sleepers), and verification of trackform compliance with MTR's Design Standards Manual. Reviewed and revised pre-tender designs, developed design reports and holistic drawing sets. Coordinated interfaces with rolling stock, signalling, traction power, and civils. Supported planning of temporary and permanent track alignments, ensuring compliance with standards and smooth integration across contractors during staged construction and commissioning phases.

Project# 6

Road Tunnel with its approaches from Shiv Murti Interchange to Nelson Mandela Marg in the State of Delhi

Authority: National Highway Authority of India

Outline: Pre-bid engineering service of twin-Tunnel using TBM and Cut & Cover Tunnel along with its approaches and cross-passages, including Flyover, Approach Ramp, Road, Ventilation Systems, Lighting and E&M facilities, Drainage etc.

Project# 7

Pune Metro Rail Project (UGC-01 & UGC-02)

Client: Maharashtra Metro Rail Corporation Limited

Outline: UGC01: Pune metro phase 1 underground consist of UG ramp, cut-cover tunnel, 2 UG stations (Shivaji Nagar & Civil Court) and associated Tunnel

UGC02: Pune metro phase 2, 3 UG stations (Budhwarpet, Mandai & Swargate) with associated Tunnel.

Project# 8

Kolkata East-West Underground Metro Project (UG1 package).

Client: Kolkata Metro Rail Corporation Limited (KMRCL)

Outline: Design and Engineering works for Underground Stations at Howrah Maidan with Cross Over, Howrah with Subway, New Mahakaran with provision of Retrieval / Launching Shaft, Vent Shaft and associated Tunnels with Cross Passages till east end of New Mahakaran Station including Design Coordination as per Interfacing requirements

Project# 9

Expansion of Dharamtar Port

Client: JSW Dharamtar Port Pvt. Ltd.

Outline: Analysis & Design of 30m gallery for cables & utility pipeline, Foundation and Piles, Cut & Cover Tunnel

Project# 10

Paradip Port Terminal

Client: JSW Paradip Port Terminal

Outline: Design of Conveyor Tunnels, Electrical Substation Building, Electrical Rooms, Cable Trench, Pent House, Transfer Towers, Conveyor Galleries, Foundations

Project# 11

Paradip International Cargo Terminal

Client: Paradip International Cargo Terminal Pvt. Ltd.

Outline: Analysis and Design of Conveyor with movable Hopper, Transit Shed with Movable Tripper

Project# 12

Bypass conveyor system at Dharamtar Port

Client: JSW Steel

Outline: Analysis and Design of Conveyor Galleries, Trestles, Towers, Foundation and Piles.

Project# 13

Hongsa Mine Mouth Power Project, Coal Line (Laos)

Client: Hongsa Power Co. Ltd., Thailand Outline: Worked as a Structural Design Engineer, designed a Stacker-Reclaimer Structure with all supporting structures and foundation.

Project# 14

Puerto Drummond (Columbia)

Client: Puerto Drummond coal port, Drummond, Colombia

Outline: Design of a Ship-loader and all supporting structures and foundations.

Project# 15

Formosa Material Handling Plant, Phase- 1(Vietnam)

Client: Formosa Ha Tinh Steel Corporation, Vietnam

Outline: Design and detailing of 14 numbers of different types of Stackers, Reclaimers and Stacker-Reclaimer, Collapsible and Non-Collapsible Tripper Structures, Conveyor Frames and all other supporting structures & their foundations.

Project# 16

Lara Super Thermal Power Project

Client: National Thermal Power Corporation Limited

Outline: Design of Industrial Structures and their foundation, Conveyor galleries, a stacker-reclaimer structure with elevator and tripper.

Project# 17

Expansion of Jaigarh Port

Client: JSW Steel Limited

Outline: Design of various conveyor galleries, trestle, towers foundations, industrial sheds and their foundations.

Project# 18

Muzaffarpur Thermal Power Project

Client: National Thermal Power Corporation Limited

Outline: Design of various industrial concrete and steel structures, foundations, canteen, Administration Buildings

Project# 19

Rio Tinto Cape Lambert Port A Sustaining Works- Boom Shortening of a stacker Project (Australia)

Client: RioTinto, Australia

Outline: Feasibility study of boom shortening.

Project# 20

JSW Dolvi Steel Plant expansion Project.

Client: JSW Steel Limited

Outline: Design of a stacker-reclaimer structure.

Project# 21

Bauxite Handling Plant Project (Orissa)

Client: Vedanta Aluminium Ltd.

Outline: Design of various industrial and residential buildings of steel and concrete

Project# 22

Upgradation of loading (package TK-III-A) for enhancement of production capacity of Meghahataburu Iron Ore Mines (Jharkhand)

Client: Steel Authority of India Ltd.

Outline: Prepare sketches of existing facilities as unavailability of drawings of existing facilities, analysis and design of structures for enhanced capacity, strengthening members of the structures as required, but not hampering the operation (Shut-down Project).

Project# 23

Calcium Silicate Plant Project

Client: ESSAR Steel Orrisa Ltd.

Outline: Design of all material handling structures.

Project# 24

Bargarh Modernisation and Expansion Project

Client: Macmet India Ltd

Outline: Design of new as well as existing structures for capacity checking.

Project# 25

School Building and Residential Project

Client: Tashi Metals Ltd., Bhutan

Outline: Design, managing, execution of 30 Residential buildings and one School Building at Tashi, Bhutan



Research Work, Publications and Certificates

- ▶ Chartered Engineer (CEng-I) and Member of Institution of Engineers (India)
- ▶ Individual life member of the Tunnelling Association of India [Affiliated to International Tunnelling and Underground Space Association (ITA)]
- ▶ Bhattacharjya S. and Sarkar M. (2016) "Robust Design Optimization of a Stacker Reclaimer Structure incorporating Parameter Uncertainty" published in National Forum of Engineering, Scientist and Technologist (FOSET), Paper code: 08C-C&A-01/ITP-13
- ▶ Sarkar M. and Bhattacharjya S. (2016) "Efficient Robust Design Optimization of A SR Structure Under Uncertainty" published in International Journal of Reliability, Quality and Safety Engineering (IJRQSE)