

NWEKE MICHAEL

Structural Engineer | BIM Engineer

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PROFESSIONAL SUMMARY

Structural and BIM Engineer with 4+ years of experience delivering high-rise seismic analysis, reinforced concrete design, and multi-disciplinary 3D BIM coordination (Revit) across institutional, commercial, and residential developments in India and Nigeria. Proven expertise in advanced dynamic analysis (Response Spectrum, Pushover, Time History) for G+20 structures using ETABS and SAP2000, covering lateral load resisting systems, foundation modelling, and ductile detailing. Delivered 12+ projects as a structural and BIM consultant, with a demonstrated track record in site-based QA/QC, structural inspections, and code-compliant design from concept through construction sign-off.

TECHNICAL SKILLS

- Structural Analysis & Design: Manual Analysis & Design (First Principles), ETABS, SAP2000, CSI SAFE, STAAD.Pro, ProtaStructure
- Design Codes & Standards: Eurocodes — EC0 (Basis), EC1 (Actions), EC2 (Concrete), EC3 (Steel), EC8 (Seismic); Indian Standards (IS 456, IS 800, IS 875, IS 1893, IS 13920, SP 16, IS 6403, IS 10262); working familiarity with ACI
- Seismic Engineering: IS 1893, IS 13920, Pushover Analysis, Response Spectrum Analysis, Time History Analysis
- BIM Coordination & Modelling: Revit (Structural & Architectural), AutoCAD, Tekla Structures, 3D Structural Modelling, Multidisciplinary Model Coordination, Reinforcement Detailing
- Foundation Design: Mat Foundations, Pile Foundations, Isolated Footings, Retaining Walls
- RC Detailing & BBS: IS 456, SP 16, Bar Bending Schedules
- Concrete Technology & QC: Mix Design, Superplasticizer Selection, Laboratory Testing, Compressive Strength Testing
- Site Engineering: RCC Supervision, Concrete Quality Control, Pile Inspection
- Visualisation: SketchUp, Lumion, V-Ray, Blender

WORK EXPERIENCE

Structural & BIM Consultant

Jul 2024 – Present

RD Engineering Group — Lagos, Nigeria

Provide structural engineering, BIM, and construction support services for residential and commercial building projects. Delivered 12+ projects to date, collaborating directly with clients, architects, and contractors from concept design through construction.

Structural Design & BIM

- Designed and detailed a 2-storey duplex (~250 sqm) using manual analysis and ETABS verification, with full reinforcement drawings and BBS to IS 456 — delivered within a 6-week programme, accepted without major revision.
- Delivered structural analysis and Revit BIM model for a 2-storey commercial office (~300 sqm); coordinating structural and architectural design to support clean, conflict-free construction documentation.
- Delivered structural analysis, design, and 3D Revit BIM models for additional residential, commercial, and mixed-use developments, including a 4-storey commercial building.
- Managed full client, architect, and contractor coordination across all projects — ensuring timely resolution of site and design issues within agreed delivery schedules.

Site Engineering

- Supervised complete construction of a 2-storey RCC duplex: foundation set-out, rebar approval across 5 concrete pours, concrete QC, and structural sign-off on schedule.
- Site engineer for piling works on a 6-storey building: pile installation tolerances, integrity checks, and pile cap approvals — zero major structural defects at handover.

Structural Engineer | Civil & BIM Engineer

Aug 2021 – Oct 2023

Assam Down Town University — Construction Department — Guwahati, India

Structural Design Projects

- G+20 high-rise (~75 m, ~12,000 sqm): performed nonlinear pushover and response spectrum analysis to IS 1893 & IS 13920 — validating structural performance at design-level and MCE.
- Allied Science Academic Block (~4,800 sqm, 4-storey): led structural analysis and Revit BIM model; designed mat foundation to IS 456 with full detailing and BBS — approved first pass by senior reviewers.
- Two public school buildings (combined ~5,900 sqm): core design team for complete structural systems and IS 456/IS 875 code compliance — both delivered on programme.
- 8-storey guest house with basement (~1,200 sqm), 5-storey workshop on sloping terrain (~900 sqm), sports arena (~3,200 sqm), and G+4 hostel (~750 sqm): full RCC structural design, BIM modelling, detailing, and construction drawing packages across all projects.
- Conducted structural retrofit surveys of two existing buildings (~2,714 sqm and ~2,736 sqm), producing accurate as-built Revit BIM models and construction documentation.

Site Engineering

- 8-storey building (170 sqm footprint): full supervision from pile foundation through frame — reinforcement inspections and pour approvals across all 8 floors; zero structural NCRs recorded.
- 3-storey public school (~3,356 sqm): coordinated 20+ concrete pours with continuous QC for complete RCC frame.
- 5-storey hostel (288 sqm) and 3-storey building (1,750 sqm): supervised both concurrently — maintained programme without additional supervision resource.

Concrete Technology & Quality Control

- Designed an M30 concrete mix using SP430 G8 superplasticizer and independently carried out laboratory testing, specimen preparation, curing, and compressive strength testing to validate performance.

Infrastructure Site Exposure

- Conducted technical site visits on the Jayanta Hazarika Flyover (Panikhaiti, Guwahati) to observe deep foundation execution, substructure rebar detailing, and heavy civil construction methodologies—broadening structural exposure into bridge infrastructure.

EDUCATION

B.Tech — Civil Engineering

Jul 2017 – Jul 2021

Assam Down Town University — Guwahati, India

- 1st Rank Holder — I-Scholar Scholarship Examination (competed across Africa, Bangladesh & UAE)
- 1st Position — Summer Internship Innovative Project Work

CERTIFICATIONS & ACHIEVEMENTS

- Multi-Storey Building Design — Civil Centre Engineering Consultants
- Advanced Structural Analysis & Seismic Design — Civil Centre Engineering Consultants
- President — African Students Union, Assam, Guwahati (2022–2024)
- Certificate of Recognition — Rotary Youth Leadership Awards Program