

VIJAY VENKATASAMY

Graduate Structural Engineer

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[Portfolio](#) | [AI Defect Reporting Case Study](#)

PROFILE

Graduate Structural Engineer with 1+ year of UK consultancy experience across 40+ projects and 2 years on international water and wastewater infrastructure (projects valued over US\$15M). Current work covers RC, steel, timber, and remedial design across retail, commercial, industrial, and residential sectors. Experienced in Eurocodes and British Standards with practical exposure to SER certification. Working towards ICE and IStructE chartership.

CERTIFICATIONS & MEMBERSHIPS

GMICE (Graduate Member, ICE) | **GStructE** (in progress) | **CSCS Card Holder** | Diploma in Tekla Structures (2023) | Master Diploma in Civil CADD (2020)

TECHNICAL SKILLS

Design: Reinforced concrete, structural steel, timber, composite floors, steel connections (end plates, baseplates, fin plates), remedial engineering, underpinning

Codes: Eurocodes (EC2, EC3, EC5), British Standards, Scottish Building Regulations (SER)

Software: Tekla Tedds, MasterSeries, STAAD Pro, ETABS, AutoCAD, Revit, Profis Engineering, MATLAB, MS Excel (advanced)

Practice: Structural appraisals, defect reporting, design checking, BOQ/BBS preparation, CPM scheduling, project coordination, client liaison

EXPERIENCE

Graduate Structural Engineer | Francis Bradshaw Consulting, Wilmslow, UK

November 2024 – Present

- Designed structural solutions for 40+ projects across retail, commercial, industrial, and residential sectors, managing concurrent deadlines alongside senior engineers.
- Engineered a sequenced mass concrete underpinning scheme for clay shrinkage damage, incorporating heave protection and isolation joints. Estimated saving of £25,000 in rebuild costs.
- Caught a missing lateral load path during a mezzanine checker review where bracing had been removed, requiring portal frame action. Flagged before site work began.
- Designed canopies, mezzanine alterations, hanging bulkheads, shopfront modifications, floor infills, fire walls, and signage supports for a major UK health and beauty retailer across multiple sites, including SER-certified projects under Scottish Building Regulations.
- Designed a 20 m high × 150 m long fire-rated buffer wall integrated into a steel frame at 7 m centres, including deflection heads.
- Detailed steel connections (end plates, baseplates, fin plates) and designed bases for silos, crane beams, and crane legs with associated RC foundations for industrial clients.
- Assessed existing structures under additional loading, devised wall removal schemes and alternative load-path solutions using steel and timber framing.
- Produced structural appraisals, defect reports, feasibility assessments, and SuDS strategies for planning applications.
- Reviewed external calculation packages as checker, verifying accuracy and code compliance.
- Coordinated with clients, architects, and contractors to resolve technical queries and align design intent.
- Prepared BOQs, bar bending schedules, and embodied-carbon calculations for sustainable delivery targets.
- Built internal AI-assisted defect reporting system for a social housing provider and automated proposal generation tools.

Civil Engineer Trainee | VA Tech WABAG Ltd, Chennai / Coimbatore, India

August 2021 – August 2023

Structural Design:

- Designed RC and steel structures for the 200 MLD Pagla STP (Dhaka) and 150 MLD Patna STP (India) — digesters, clarifiers, dosing facilities, admin buildings. Produced working drawings for permanent and temporary works.

- Prepared feasibility studies and technical design reports. Reviewed vendor foundation drawings and validated structural schemes for pumping stations and tunnel lining.
- Designed temporary steel structures including scaffolding, roofing, and site warehouses.

Procurement & Projects:

- Managed procurement for a US\$11.45M effluent treatment plant for Petronas (Malaysia), coordinating pipes, valves, pumps, and mechanical packages across international vendors.

Site Supervision:

- Supervised construction of a 178.3 MLD WTP including aeration tanks, clarifiers, and sludge thickeners. Zero safety incidents across 150,000+ man-hours.
- Conducted material testing, approved pour cards for RC works, and prepared BOQs and bar bending schedules.

Engineering Internships | AK Consultant | Shree Constructions | VA Tech WABAG, India

2018 – 2021 (various, totalling 8 months)

- Foundational experience in structural calculations, AutoCAD and Tekla drafting, site supervision, and quality inspection across residential (G+2/G+3) and water treatment projects.

KEY PROJECTS

Retail — Major UK Health & Beauty Retailer (Multiple Brands):

- **Dundee Gallagher (SER)** – Mezzanine alterations, signage, floor infill, fire wall, hanging bulkheads, M&E coordination.
- **Fort Kinnaird (SER)** – Canopy design, hanging bulkheads, wall lining, M&E supports.
- **Glasgow** – Front signage support, floor infill, hanging bulkhead.
- **Multiple Retail Parks** – Canopy installations, shopfront modifications, signage supports.
- **Fragrance Retail Unit** – Chandelier support design.
- **Value Retail Unit** – Remedial schemes for existing units.

Commercial, Industrial & Residential:

- **National Health Food Retailer** – Shopfront replacement concept with timber and aluminium slat systems.
- **Automotive Dealership** – Warehouse design and drainage concept.
- **National Food Manufacturer** – SuDS strategy, structural assessment, crane leg platform.
- **Glass Manufacturer** – Crane leg bases.
- **Building Products Manufacturer** – Silo base design and structural assessment.
- **Registered Social Housing Provider** – Underpinning schemes for residential properties.

Water Infrastructure (VA Tech WABAG):

- **Pagla STP, Dhaka (200 MLD)** – RC and steel design for digesters, clarifiers, and admin buildings.
- **Patna STP, India (150 MLD)** – Structural design for treatment facilities and temporary works.
- **Petronas ETP, Malaysia (US\$11.45M)** – Procurement lead for all packages.
- **178.3 MLD WTP, India** – Site supervision of aeration tanks, clarifiers, and sludge thickeners.

EDUCATION

MSc Structural Engineering | University of Leeds, UK | 2023–2024 | Merit (2:1)

- Dissertation: Structural Fragility Analysis – Uncertainty Quantification for Complex Civil Infrastructure Under Seismic Loads
- Group Project: Conceptual and detailed design for proposed HS2 Railway Station (bridges, foundations, superstructures)
- Key modules: Structural Dynamics, FEA, Advanced Concrete, Steel & Composite Structures, Geotechnical Engineering, Structural Reliability

BEng Civil Engineering | Anna University (Easwari Engineering College), India | 2017–2021 | CGPA 7.96

- Dissertation: Partial Replacement of Cement and Aggregates Using Industrial Waste in Concrete

ADDITIONAL

- Digital tools: Developed an AI-assisted defect reporting platform (WhatsApp + Claude API + React) and automated scope/fee-letter generation using n8n and RAG-based retrieval, for use within the practice.
- Professional development: Advanced Excel, MS Project & Primavera P6 (2023). Active CPD towards ICE and IStructE chartership.