

SERVICE BROCHURE

Engineering & Research Services Overview

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Structural Analysis & Design

01

Safe, code-compliant, cost-effective structural engineering.

Structural analysis and design forms the foundation of every safe building or infrastructure project. GRA provides comprehensive structural analysis and design services for residential, commercial, and industrial structures, combining rigorous engineering calculation with modern computational tools.

What's Included

- Structural analysis of RCC, steel, and composite structures (STAAD Pro, ANSYS)
- Design in accordance with IS 456, IS 875, and applicable codes
- Load assessment, seismic and wind analysis
- Structural optimization for cost and material efficiency

Also Available

- Peer review and structural design verification ("vetting")
- Retrofit and strengthening design for existing structures
- Foundation and superstructure design coordination

WHY GRA

Every design is led by a Ph.D.-qualified structural engineer with direct field experience in condition assessment and durability evaluation — designs account for long-term durability from day one, not just initial adequacy.

Sustainable Materials & Construction

Lower-carbon, more durable materials without compromising performance.

As construction moves toward lower-carbon, more durable building materials, GRA helps clients specify, test, and implement sustainable construction materials backed by peer-reviewed research methodology.

What's Included

- Mix design with SCMs (fly ash, GGBS, silica fume, rice husk ash)
- Alkali-activated and geopolymer concrete development
- Utilization of industrial by-products and recycled materials

Also Available

- Durability assessment (water absorption, sorptivity, RCPT, carbonation)
- Life-cycle and embodied-carbon considerations in material selection

WHY GRA

Backed by a published research record spanning ternary/quaternary blended concretes, alkali-activated binders, and self-healing concrete — including a filed patent on eco-friendly brick composition and a sustainable geopolymer road material.

Technical Solutions for Construction

Practical, on-the-ground engineering support.

GRA provides practical, on-the-ground technical consultancy to resolve construction-stage engineering challenges, from mix-design troubleshooting to specialized testing and quality control.

What's Included

- Concrete mix design and quality-control testing (cube/cylinder, slump)
- On-site technical troubleshooting for construction quality issues
- Material testing and specification support

Also Available

- Construction-stage technical advisory for contractors and owners
- Documented quality assurance for government/infrastructure projects

WHY GRA

Informed by 30+ government-funded consultancy projects — including mix design and QC for flood-control and water-retaining infrastructure — giving a practical understanding of what actually goes wrong on site.

Condition Assessment of Structures

Evidence-based diagnostics for aging infrastructure.

Aging infrastructure requires accurate, evidence-based condition assessment to guide repair, rehabilitation, or replacement decisions. GRA combines visual inspection, non-destructive testing, and durability diagnostics.

What's Included

- Visual condition surveys and defect mapping for RCC structures
- Non-destructive testing (rebound hammer, UPV, cover meter survey)
- Corrosion assessment and half-cell potential mapping

Also Available

- Durability and service-life prediction for existing structures
- Repair and rehabilitation strategy recommendations

WHY GRA

Our founder's career began with structural condition assessment and corrosion surveys of RC infrastructure in Saudi Arabia, followed by published research on corrosion mechanisms and residual strength of corroded members.

Research & Innovation

From experimental design to publishable, defensible outcomes.

GRA partners with academic institutions, industry R&D teams, and individual researchers to design, execute, and translate applied research in civil engineering materials and structures.

What's Included

- Experimental design (mix design, testing protocols, statistical planning)
- Microstructural characterization support (SEM, XRD interpretation)
- AI/ML model development for materials performance prediction

Also Available

- Collaborative research partnerships and joint publication opportunities
- Patent drafting support for construction materials innovations

WHY GRA

Backed by a personal record of 35 peer-reviewed publications and 5 filed patents — led by someone who has been through the full research-to-publication-to-patent pipeline repeatedly, not a research-services intermediary.

Technical Writing & Publication Support

Communicate strong research clearly, and get it published.

GRA offers technical writing and publication support for researchers, graduate students, and industry teams preparing manuscripts, reports, or technical documentation.

What's Included

- Manuscript structuring, editing, and pre-submission review
- Data presentation guidance (tables, figures, statistical reporting)
- Response-to-reviewer drafting support

Also Available

- Technical report writing for consultancy and industry projects
- Target-journal selection and citation/referencing guidance

WHY GRA

Led by an active peer reviewer for 14+ international journals and an editorial board member/guest editor for construction-materials journals — reflecting current, first-hand experience with reviewer and editor expectations.

Let's Discuss Your Project

Reach out for a scoped proposal tailored to your engineering,
materials, or research requirement.

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