

Building Structure Engineering

Architects, developers, and owners rely on dedicated structural engineers to build quality and integrity into their buildings and parking structures. GAI Consultants analyzes, designs, and inspects commercial, industrial, medical, institutional, parking, and residential structures. We also have premier capabilities in managing building construction, renovation, and demolition projects.

Seasoned professionals that look for the root cause of building distress means a better understanding of the issues and comprehensive solutions.

GAI's structural engineers have years of practical experience in designing concepts for long-term or temporary building structure solutions. Our teams combine structural, geotechnical, mechanical, and electrical engineering to bring expertise in structural mechanics, materials engineering and characterization, hydraulic engineering, vertical design, heavy lift rigging consultation, and computer programming to each project.

GAI delivers plans and specifications for structure design and rehabilitation projects that focus on constructability by implementing emerging developments in construction materials and equipment. Our construction services range from specific construction activity observation to full-time field monitoring and management.

GAI's Certified Threshold Inspectors conduct building inspections with a high degree of professionalism. Our investigations of building structures include documenting structural conditions and cracking, settling, and leakage. We understand that residential construction methods vary widely and that soil conditions and hillside stability affect foundations. Our professionals determine the root cause of building distress and our structural analyses include all structural components and applicable building codes.

GAI inventories industrial and commercial facilities, and develops maintenance schedules so clients can service their buildings and equipment on a regular basis. Our services include regular monitoring of structure and foundation movements, and our



Service Profile



seasoned staff professionals have extensive experience in materials testing and non-destructive testing.

Over the years, GAI has established valuable working relationships with independent consultants in related disciplines, such as architecture and corrosion engineering, to complement our in-house engineering efforts. This problem-solving approach brings the appropriate technical viewpoint to each project and delivers results.

Building Structure Engineering Services

- Structural analysis and design
- Code-compliant structural calculations
- Building specifications
- Structural system construction cost estimates
- Building surveys and as-built conditions mapping
- Certified threshold building inspections
- Concrete restoration investigations
- Concrete repair methodology
- Building foundation design
- Soil-structure interaction studies
- Structural reliability studies
- Life cycle costing
- Maintenance plan development
- Materials and non-destructive testing
- Construction monitoring
- Heavy lift rigging consultation
- Peer reviews

GAI Services Summary

- Airport Planning and Design
- Bridge and Structure Inspection and Design
- Coal Combustion Residuals Management
- Construction Inspection and Management
- Cultural Resources Management
- Economic Analyses and Strategies
- Electric Transmission Design and Siting
- Environmental Engineering
- Environmental Studies, Species Studies, Permitting
- Gas Pipeline Surveying and Mapping
- Geographic Information Systems (GIS)
- Geotechnical Engineering and Geology
- Impoundment and Landfill Permitting and Design
- Land Development Engineering
- Landscape Architecture and Design
- Master Planning and Urban Design
- Mechanical, Electrical, Structural Engineering
- Natural Gas FERC Certification and Permitting
- Nuclear Energy Engineering Support
- Right of Way and Appraisal Support
- Land Surveying and Mapping
- Transportation Planning and Design
- Utility Management Consulting
- Water, Stormwater, Wastewater Management

The scope of professional services that are provided by or offered out of each GAI office including, but not limited to, engineering and surveying services, is governed by the professional and business licensing requirements of each individual State or jurisdiction in which the GAI office is located and whether GAI has the requisite professional and business licenses for that State or jurisdiction. Nothing on GAI's Web Site or marketing materials is intended to be interpreted or construed as offering to perform professional licensed services where prohibited unless the licensing requirements have been met. Engineering services are not offered out of GAI's Northern Kentucky (Florence) office location. Surveying services are not offered out of GAI's Illinois location or by our New York subsidiary.

