



General Information

Leonard Engineering was founded in 2003 by Eleanor and Steve Leonard in Louisville, Kentucky. Since that time, the company has grown in both size and reputation. Today, Leonard Engineering consists of an experienced team of professionals whose passion is providing exceptional service while building strong and enduring relationships. Leonard Engineering offers the highest quality engineering services while also making budget, schedule and aesthetics top priorities. We welcome the opportunity to work closely with clients and contractors to find the best structural solutions for your needs. We are certified as a woman business enterprise (WBE) by WBENC and female business enterprise (FBE) by the Louisville Metro Human Relations Commission.

The team at Leonard Engineering serves a broad range of clients, from architects to contractors, realtors, home owners, business owners, material fabricators, government and educational entities, and other engineers. We provide a comprehensive spectrum of structural services to carry your project from preliminary planning through construction completion. By using trusted, colleagues, Leonard Engineering is also happy to assemble and manage a complete design team that offers architectural, structural, civil, landscape, process/hydraulic, mechanical and electrical design services for all of your project needs.

From the initial planning phase to product delivery, we work in cross-disciplinary coordination while being responsive to client care. Identifying the right site can be one of the more time consuming aspects of the construction process. Leonard Engineering has the capability to assist our clients find the location that meets immediate and long term requirements. With our expertise in design requirements, paired with our experience with construction in the region, we offer clients a comprehensive site selection and evaluation services.

We value providing unparalleled service and building strong and enduring relationships. We always strive to think outside-the-box to create innovative and high-performance designs resulting in construction savings, expedited schedules, improved performance and pure aesthetic appeal. We are grateful that by working together with our clients and other professionals we can be part of shaping the Louisville and national landscape with solutions that grow communities, impact owners and inspire individuals.



Team

ELLEANOR LEONARD

Position: President / Managing Member

Years of Experience: 25

Education: BA in International Relations; GRI, Graduate, Realtor Institute; CRB, Certified Real Estate Brokerage Manager

Technical Skills: Licensed Real Estate Broker

Organizations: Society of American Military Engineers (SAME), National Association of Women Business Owners (NAWBO), National Association of Realtors, Greater Louisville Association of Realtors

STEVE LEONARD, P.E.

Position: Principal Engineer

Years of Experience: 20

Education: B.S. Civil Engineering – J.B. Speed School of Engineering, University of Louisville

Technical Skills: RISA Analysis / Design Software, RAM Design Software, Autodesk AutoCAD, Autodesk Revit, Microsoft Office Software, Other Design Software

Organizations: ASCE, ACED, SEAOK, SAME

CHAD SIMMONS, P.E.

Position: Structural Engineer

Years of Experience: 7

Education: B.S. Civil Engineering – Georgia Institute of Technology

Technical Skills: RISA Analysis / Design Software, Autodesk AutoCAD, Autodesk Revit, Microsoft Office Software

MATT ULRICH, P.E.

Position: Structural Engineer

Years of Experience: 5

Education: M. Eng. B.S. Civil Engineering – J.B. Speed School of Engineering, University of Louisville

Technical Skills: RISA Analysis / Design Software, Autodesk AutoCAD, Autodesk Revit, Microsoft Office Software

NATHAN JENNINGS, E.I.T

Position: Structural Engineer

Years of Experience: 2

Education: B.S Civil Engineering - Purdue University

Technical Skills: RISA Analysis / Design Software, Autodesk AutoCAD, Autodesk Revit, Microsoft Office Software



Services

PLANNING

- Conceptual design
- Feasibility studies
- Design alternative assessments and reports
- Design approach narratives

DESIGN

- Structural analysis & design
- Framing and foundation design for new buildings
- Building component design and analysis
- Cast-in-place concrete
- ICF concrete walls / Tilt-up concrete construction
- Wood construction assessments
- Structural steel / Cold form steel
- Reinforcement of existing structures
- Concrete & masonry FRP fabric reinforcing
- Structural drafting and BIM modeling using AutoCAD & Revit
- Structural analysis using RISA finite element software
- Load capacity analysis
- Peer reviews
- Design / Build
- Value engineering
- Renovation and Adaptive Reuse of Existing Structures
- Historic Preservation/ sustainable design
- Water / Wastewater structural design

CONSTRUCTION

- Construction administration
- Structural special inspection
- Construction observation
- Special inspection during construction phase
- Shoring design
- Structural cost estimation
- Engineered shop drawings
- Shop drawings review with 3D modeling coordination

INVESTIGATIONS

- Due diligence investigations
- Existing structure analysis
- Residential evaluations
- Structural condition assessment
- Failure analysis / Forensic investigation
- Expert witness
- Building code compliance



Key Projects

1. **Novelis – Berea, KY:** Leonard Engineering provided structural design for mezzanines and equipment supports for process flow modifications and alignment check, using 3D modeling techniques in Revit.

The Novelis plant in Berea, Kentucky, is the world's largest dedicated aluminum can recycling plant. Leonard Engineering was selected to assist in determining if their feeder system could be realigned and new equipment added by utilizing 3D modeling capabilities in Autodesk Revit. After it was concluded that the realignment was feasible, our scope of work included analyzing the existing structural supports for the new loading scenarios and designing the equipment supports and mezzanines required for the operation and maintenance of the system. The analysis and design efforts included field-measuring the existing structure and equipment layout and accounting for working around extremely tight access inside the core of the building.

2. **Whiskey Row – Louisville, KY:** Leonard Engineering provided analysis and design of temporary shoring for facades of buildings being demolished and structural assessments of seven historical buildings. Whiskey Row is a stretch of buildings constructed in the mid-to-late 1800s along West Main Street, between 1st and 2nd Streets in downtown Louisville, Kentucky, which originally housed the beginnings of the bourbon industry. The cast-iron facades of the buildings exhibit design and construction details not often found elsewhere in the United States. As such, the facades needed to be preserved.

Due to deterioration over many decades, it became necessary to demolish four buildings on the North side of the block; the first building on that block had already collapsed 12 years prior. Leonard Engineering was selected by Sullivan & Cozart Inc., to assist with temporary shoring design work to provide safe working conditions inside the buildings while also stabilizing and preserving the facades as the buildings were being demolished. The temporary shoring was a mixture of steel bracing anchored to the facades and wood diaphragms designed to allow holes to be cut for the installation of a permanent steel bracing structure, which was designed by others.

Leonard Engineering's quick response to construction interferences, which crept up almost daily, greatly aided Sullivan & Cozart Inc., in executing the stabilization of the facades and the demolition of the buildings in a timely and cost-effective manner.

3. **Germantown Mill Lofts – Louisville, KY:** Leonard Engineering prepared the structural assessment of all of the buildings on the property that had been the Goss Avenue Antique Mall. We were selected as the structural engineering firm for the renovation and remodeling of the property into a mixed-use facility with residential and commercial spaces.

Germantown Mill Lofts is a project that will transform an historic cotton mill, built in 1889, into a 200-loft apartment and mixed-use facility. Leonard Engineering has been selected to conduct a structural assessment of all of the buildings on the property, and to perform the structural analysis and design work required to support the new space use along with the modifications to the existing buildings as envisioned by the development team.



4. **Salt Lake City Veterans Affairs Hospital – Salt Lake City, UT:** Leonard Engineering provided the structural engineering design and analysis for the renovation and expansion of Building 3 Mental Health Facility.

This project entailed the renovation and expansion of the 2-story Building 3 Mental Health Facility. The total square footage of the facility was increased to 44,000, and the patient capacity was augmented by 30 beds per floor. Leonard Engineering was selected by Paradigm Engineers and Constructors to provide the structural analysis and design for the project.

5. **Louisville Veterans Affairs Hospital – Louisville, KY:** Leonard Engineering provided the structural engineering analysis and design for the installation of a new 1.5 Tesla and Open MRI machines on the 2nd Floor of the existing hospital. This project included the renovation of over 2,000 square feet of existing space to create a new MRI Suite, which contained a 1.5 Tesla MRI and a High Frequency Open MRI. Leonard Engineering was selected by Paradigm Engineers and Constructors to provide the structural analysis and design for the project.

The initial challenge of the project was that the imaging unit is on the 2nd floor of the hospital, directly over the emergency room. This required an analysis of the existing concrete floor, beam and column structure and an eventual reinforcement, with carbon fiber-reinforced polymer (CFRP), of the floor-slab to enable the slabs to support the loads of the new equipment.

The second challenge was the placement of the new equipment, which was achieved by cutting a large hole in the roof to create an access hatch for any future equipment-servicing requirements. The concrete roof-deck was also reinforced with CFRP due to the size of the hole. The entire project was completed in a timely manner and required a high degree of coordination with the hospital, as the emergency room operations had to remain open throughout the entire construction and installation phases.

6. **Worthington Fire Department Station #1 – Prospect, KY:** Leonard Engineering provided the structural engineering design for the new Worthington Fire Department Headquarters and produced full construction documents and specifications.

Leonard Engineering was chosen to provide the structural engineering design for Worthington Fire Department's new Station #1. Station #1 is a mixed-use building: it is the headquarters for the Worthington Fire Department, housing the main offices, firefighter quarters, an exercise room and an emergency vehicle garage; it also contains meeting rooms and public-assembly space for rent. The building is located in the Norton Commons development in Prospect, Kentucky.