CAPABILITIES STATEMENT

ABOUT PREISSNER ENGINEERING & CONSULTING, LLC

Preissner Engineering & Consulting, LLC is an Ann Arbor, MI-based engineering consulting company classified by the SBA as a small business. We have expertise in mechanical system and structural design, advanced finite element analysis (FEA), 3D computer aided design (CAD), and computational fluid dynamics (CFD). We provide innovative analysis and design solutions to companies and organizations in high-tech industries including defense, aerospace, transportation, energy, infrastructure, and others.

Our experience with FEA includes everything from basic modeling and static analysis to complex assemblies with dynamic, vibration, contact, nonlinear, and fatigue effects. We can analyze metallic, non-metallic, and composite materials. With CFD we are capable of a full range of analysis types, up to and including transient, compressible, and multi-phase flow with all types of boundary conditions, heat transfer, and both internal and external flow paths. In 3D design we use our CAD tools from the beginning of a project in exploring the design space, until the end for producing finished drawings for communication and production.

PEC can tackle projects of any size, from initial R&D explorations to multi-company, multi-agency systems. Companies use our services to develop new products, improve current designs, and assess legacy system performance and/or failure. We embrace a philosophy of total quality as well as quality improvement in all aspects of our business.

GENERAL INFORMATION

Registered Company Name:	Preissner Engineering & Consulting, LLC	DUNS Number:	031100668
		CAGE Code	62PH7
Key Contact:	Eric Preissner	Year Incorporated:	2010
Office Telephone:	734.834.0244	State of Incorporation:	Michigan
Web Site:	www.pec-llc.com	Number of Employees:	3
E-mail Address:	eric.preissner@pec-llc.com		

NAICS CODES

541330:	Engineering Consulting Services
	Engineering Design Services
	Engineering Services
541512:	CAE (computer-aided engineering) design services
541712:	Engineering Research and Development Services

AREAS OF EXPERTISE

Eric Preissner is the principal at Preissner Engineering & Consulting, LLC

- B.S. in Aeronautical and Astronautical Engineering from the University of Illinois, Urbana-Champaign
- M.S. and Ph.D. in Mechanical Engineering from the University of Delaware
- Registered Professional Engineer in the state of Michigan
- Over 20 years of experience in aerospace, research, design, analysis, and manufacturing

Areas of expertise include:

- Design
  - Concept development
  - Complex specification compliance
  - Concept maturation
  - Design for manufacturing
  - Test plan development and product testing support
- Finite element analysis (FEA)
  - Modeling of complex components and/or assemblies, including welded, bolted, and other joints
  - Basic static strength analysis
  - Normal modes (natural frequency and buckling) analysis
  - Dynamic analyses including time and frequency domain

- Vibration analyses including harmonic, random, and shock
- Nonlinear deformations
- Nonlinear materials
- Contact
- Superelements
- Metallic and composite materials
- Thermal analysis

- 3D CAD modeling
  - Solid modeling
  - 2D Drawings
  - Mass properties
  - Bills of material
- Compliance with DoD
  - MIL-STD-810
  - MIL-STD-209
  - MIL-HDBK-1791
  - Air transport certification
- Design improvement
  - Weight reduction
  - Optimization
  - Trade studies
  - R&D projects
  - Forensic studies
- Fatigue analysis
  - Duty cycle generation
  - Damage, durability, and life
- Detailed design reviews, documentation, reporting, and presentation

TOOLS

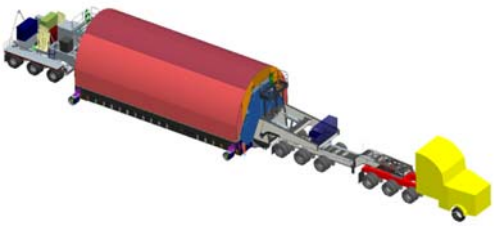
- Finite Element Analysis: NX (Siemens) and NEi (Noran) Nastran
- Pre- / Post-processing: Femap (Siemens)
- 3D CAD: SolidWorks (DSS) – Ability to exchange design data in native CAD and a variety of other formats (STP, IGES, SAT, etc.)
- Optimization: Hypersizer (Collier) – optimize composite layups and design dimensions, analyze structure and report detailed margins of safety

CUSTOMER ASSOCIATIONS

- Nelson Manufacturing (Ottawa, OH)
- Sigma Space Corp (Greenbelt, MD)
- Aernnova Engineering US (Ann Arbor, MI)
- Phoenix Composite Solutions (Oscoda, MI)
- Ideal Fabricators (Livonia, MI)
- A123 Systems (Livonia, MI)
- BCN Technical Services, a Division of Schuler (Hastings, MI)
- Sentry Insurance (Stevens Point, WI)
- ASE Holdings, Inc. (St. Paul, MN)
- Navitas ASG (Ann Arbor, MI)
- Herkules Equipment Corp. (Walled Lake, MI)

CASE STUDY

James Webb Space Telescope – Transportation Assembly: The James Webb Space Telescope is one of NASA's prominent programs to explore the origins of our universe. The Transportation Assembly (TA) is a unique mobile environmental protection unit that will ferry the JWST around the country during assembly and testing and to its final launch site in French Guiana.



Preissner Engineering is working as a subcontractor to Nelson Manufacturing and is helping lead the team to design, analyze, manufacture, and test the TA. We are directing the design team on key technical decisions, performing complex assembly FEA (static and shock), ensuring a manufacturable design, and developing the test plan. As the unit will be transported on a specialized C-5 aircraft, we are also leading the air transport certification effort.

PREISSNER ENGINEERING & CONSULTING, LLC ♦ 1925 Timber Trl ♦ Ann Arbor, MI ♦ 48103
www.pec-llc.com ♦ eric.preissner@pec-llc.com ♦ 734.834.0244