

Earl Girouard, PE

Forensic Engineering Expertise

Mechanical Failure

Determine root cause of mechanical failure, including HVAC equipment, plumbing, hydraulic pressure-containing equipment, material failure, pressure testing failure, and internal combustion engine failure.

Building Pathology

Including work with origin and cause of water determinations, microbial growth and testing, HVAC systems, psychrometric studies, roofs, and attics.

Origin & Cause

Determine the source and responsible party or element related to water entry into a building whether it be through the building envelope or caused with the building interior. Examples of past work include failure of roofing and wall cladding causing moisture entry, and humidity and condensation related losses.

Building Fenestration/Building Envelope

The building envelope is a building's first line of defense to moisture entry. Identifying the type of system (single versus multiple barrier) and how the various adjoining materials' water and air barriers connect is key to effective moisture management. Examples of past work include roofing materials and installation.

Inspection and Evaluation of Roofing Systems

This includes steep and low slope roofs as well as various types of roofing materials, including both common and unique roofing applications. Past work involved offering opinions and repairs related to installation deficiencies and storm-related damages, including for hail and wind.

Qualifications & Training

- Basic Electricity, CFITrainer.net, May 2023
- Vacant and Abandoned Buildings: Hazards and Solutions, CFITrainer.net, May 2023
- Fundamentals of Residential Building Construction, CFITrainer.net, January 2023
- Investigating Natural gas systems, CFITrainer.net, January 2023
- IWCF Well Control Level 4, 2014
- BOISET Offshore Water Survival and Firefighting, 2014
- HUET Offshore Water Survival, 2007 and 2012
- Basic Hydraulics, Test Lab Safety, 2012
- Oilfield Failure Analysis, 2009
- Oilfield Corrosion, 2009
- Cameron Oilfield Metallurgy, 2008
- Geometric Dimensioning and Tolerancing, 2008
- External Protective Coatings, 2008

Education

Bachelor of Science in Mechanical Engineering, Minor in Mathematics, Theology
Cedarville University, Cedarville, OH

Licenses & Certifications

PE - Professional Engineer
Licensed by the State of Texas - Number 141564

Employment History

Forensic Engineer

Nederveld, Grand Rapids, MI

2021 - Present

Duties include forensic engineering analysis relating to building storm damage (wind, snow, hail), and water loss events, mechanical system failure (appliances, HVAC equipment), building pathology, and water loss events (plumbing), and plan of repair design.

Senior Project Engineer

Mistbox, Houston, TX

2016 – 2021

Duties included developing prototypes and leading product testing, developing procedures, installing product, and implementing tests domestically and internationally.

Completions, Subsea, & Well Testing Supervisor

Total S.A., Oslo, Norway; Pointe Noire, Congo

2014 - 2016

Duties included supervising third party suppliers and drilling contractor onboard Tungsten Explorer during entire well completion, subsea XT installation, and well testing to ensure safe operation and adherence to procedure on Tungsten Explorer.

Subsea Installation Engineer

FMC Technologies, Houston, TX

2012 – 2014

Performed onshore dock testing and subsea testing of BP Atlantis subsea Christmas trees. Updated XT dock testing, XT installation and retrieval, tubing hanger installation, and other installation procedures based upon lessons learned in the field and supported subsea well completion activities on Development Driller III.

Design Engineer

T3 Energy Services, Houston, TX

2010 – 2011

Duties included applying design parameters of API 6A gate valves and offshore containers, including API codes, ABS, Bureau Veritas, and DNV specifications. Assumed full responsibility for completing, submitting design packages for all valve product lines to ABS, DNV, and Bureau Veritas.

Riser Engineer

Cameron International, Houston, TX

2007 - 2010

Contributed to the design of drilling riser system as part of \$230 million contract. Applied design parameters of riser equipment, including API codes, ASME, NACE and DNV specifications. Used ANSYS, MathCAD, Inventor to complete design approval packages of riser equipment for DNV submittal.