

NOAH W. GUNNIN

SUMMARY

Since starting in industry in 2017, Mr. Gunnin has developed diverse experience engineering, design, and analysis of HVAC and plumbing systems. Much of the work he has completed involved the analysis and design of residential, commercial, and industrial projects in the field of HVAC and plumbing.

Over the years he has successfully designed the following facility types:

- Car Repair Centers
- Churches
- Concert Venues
- Data Centers
- Dust Collection
- Fitness Centers
- Industrial / Manufacturing
- Medical Centers
- Mixed Use
- Multi-Family Residential
- Nail Salons
- Office
- Research Facilities
- Restaurants
- Retail
- Single-Family Residential
- Warehouses

In addition to design experience, Mr. Gunnin also has experience in forensic analysis and evidence logistics. These included conducting site investigations associated with HVAC and plumbing losses and assessment of small appliances, development of testing procedures, and the recreation of field condition in a laboratory.

EDUCATION

Master of Science in Mechanical Engineering - Georgia Institute of Technology, In Progress

Bachelor of Science in Mechanical Engineering - Kennesaw State University, 2019

REGISTRATIONS & CERTIFICATIONS

- National Council of Examiners for Engineering and Surveying (NCEES)
- Fundamentals of Engineering, 2019

CAREER HISTORY

FORCON International – Mechanical Consultant

Provides forensic consultation in cases related to HVAC and Plumbing including failures in mechanical equipment, residential appliances, and piping systems. Responsible for visiting sites to gather evidence and conducting research into system failures and testing protocols.

Gunnin Design - Lead Mechanical & Plumbing Designer

Responsible for designing and producing HVAC and Plumbing permit & construction documents for an array of different residential and commercial projects. Tasks include facility assessment, calculations, ductwork and piping design, equipment selection, specification development, etc.

Expert Consultations - Mechanical Designer & Laboratory Technician

Responsible for the engineering and design of a variety of residential, commercial, and industrial HVAC and plumbing projects. Also responsible for the daily operations of a forensic laboratory that tested a variety of mechanical systems and appliances, as well as the management of evidence acquisition, transportation, and storage.

HIGHLIGHTED PROJECT EXPERIENCE

Forensic Analysis

- **(2019) Electric Motor:** A North Georgia technical school experienced a failure in a motor of a large, central air handling unit. To determine the failure mode in the motor a testing protocol was researched, designed, and implemented. The motor was tested for electrical continuity and the bearings were removed and disassembled for analysis. Upon visual inspection of the bearing, small fragments from the ball bearings could be seen in the bearings grease, and scorching from friction could be seen on one side of the raceway. The overall mode of failure was determined to be improper maintenance and overtightening of the belt connected to the motor.
- **(2018) Tankless Water Heater:** A home in Alabama had experienced significant damage due to a tankless water heater internal component failing. The water heater was taken into evidence and examined for internal damages. One of the main connections to the heat exchanger was damaged and deformation could be seen in the combustion chamber of the heat exchanger. A similar water heater was acquired and installed in a laboratory setting made to replicate the field installation conditions. In a post examination of the water heaters, it was found the failed water heater was a refurbished unit that was provided the wrong heat exchanger. Using a microscope, tool marks were found on the failed heat exchanger connection, and it was determined that an improper installation was the cause of failure.

Indoor Air Quality and Human Comfort

- **(2022) Bunkhouse:** A large trucking and transport company had a bunkhouse constructed for their drivers that were not local and needed a place to sleep. This building could accommodate sixteen individuals and provided a lounge, kitchen, gym, and sixteen bedrooms. The building began to experience humidity and mold growth, which required the building to be closed. Upon investigation it was determined that the building's ventilation system was not installed correctly and had experienced a mechanical failure. A corrective course of action was implemented to reinstall and repair the ventilation system.