
JAMES C. FREELING, P.E.

PRINCIPAL FORENSIC ENGINEER

EDUCATION B.S., Mechanical Engineering
Oregon State University, 1972

REGISTRATIONS P.E., Mechanical Engineering
State of Washington, No. 16708

P.E., Mechanical Engineering
State of Oregon, No. 12653

EXPERTISE Building Envelope Failure Investigations
Building Envelope Design
Ventilation Design
Heat / Vapor Transfer through building materials
Member of American Academy of Forensic Sciences

PROFESSIONAL SUMMARY

Mr. Freeling joined Pacific Testing Laboratories (PTL) in 1977 as Manager of the Nondestructive Examination Department. From 1980 to 1986, he served as Vice President. Mr. Freeling's duties included management of company operations and technical support of the company's ten departments. In 1986, Mr. Freeling served as the President of PTL providing corporate level engineering management. He sold PTL in 1997.

He retained the mechanical engineering and testing laboratories and the forensic engineering departments of PTL and started Emerald Engineering Laboratories (EEL) in June 1998. EEL specialized in forensic investigations and supportive mechanical engineering design, materials property testing and field testing.

During the past 25 years he has always been involved in construction defects issues, building envelope design, and construction inspection. This includes numerous building envelope design projects. A central aspect of his experience has been the selection of building materials including those required for roofs envelope and structure. Mr.

Freeling has courtroom experience spanning over a period of 30 years including dozens of depositions and trial testimonies.

Most recently in 1996, Mr. Freeling formed BEE Consulting, LLC (BEE) a consultancy that specializes in building envelope designs and inspections. In the last fourteen years through BEE, Mr. Freeling has provided building envelope design and inspections using the most current design concepts available that utilize the “rainscreen” design approach. This concept is in the process of transforming the construction industry in the Pacific Northwest. The use of a “face sealed” building envelope has been generally replaced by the design concept that is solely utilized by Mr. Freeling’s company.

Mr. Freeling has presented the building envelope design concepts in AIA Seminars to groups of architects, contractors and other professionals in Seattle, Washington and Portland, Oregon. He has made dozens of private presentations to architectural and building firms in the Northwest.

He currently spends the majority of his time involved with building envelope design of new construction. This accounts for approximately 70% of his work. The remaining 30% is involved with remediation projects, construction management, and forensic investigations.

Mr. Freeling has designed the building envelope system for numerous residential buildings and commercial structures in the Pacific Northwest and other climate regions of our country. He is accomplished in the use of WUFI 4.2 Pro Software for the prediction of moisture within building envelopes dependent on the envelope component variables and the environmental variables.

He is the President and Principal Design Engineer at BEE Consulting and oversees a staff of Engineers, CAD Drafters, and experienced field inspectors.