

Exponent®
Engineering & Scientific Consulting

Shannon Ramey, P.E., CFEI

Principal Engineer | Mechanical Engineering
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Professional Profile

Shannon Ramey is a Principal Mechanical Engineer and Certified Fire and Explosion Investigator with over 30 years of broad experience. He has an extensive background with building mechanical systems, machinery, building design, structural analysis, construction work, and codes.

Mr. Ramey owned and operated engineering and contracting businesses for 17 years. He designed, installed, and serviced HVAC, refrigeration, and fire sprinkler systems. He has 12 years of paper industry experience with design and installation of processing equipment, automated industrial machinery, and conveyor systems; as well as safety standards for their design and operation.

Mr. Ramey specializes in forensic analysis of HVAC, refrigeration, and plumbing systems. He investigates incidents involving machinery, maritime vessels, fuel and gas piping, fire sprinkler systems, and hydraulic systems. Mr. Ramey provides litigation support and expert testimony to law firms, insurance companies and industry for property damage and personal injury events and leverages his experience in construction defect cases.

Academic Credentials & Professional Honors

B.S., Mechanical Engineering, University of Washington, 1987

Licenses and Certifications

Professional Engineer Mechanical, Arizona, #71528

Professional Engineer Mechanical, California, #41500

Professional Engineer, Hawaii, #PE-19323

Professional Engineer Mechanical, Idaho, #P-19343

Professional Engineer Mechanical, Minnesota, #58420

Professional Engineer, Montana, #PEL-PE-LIC-63292

Professional Engineer, Nevada, #027923

Professional Engineer Mechanical, New York, #107487-01

Professional Engineer Mechanical, Oregon, #88037PE

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Professional Engineer, Utah, #11601171-2202

Professional Engineer Mechanical, Virginia, #402066411

Professional Engineer Mechanical, Washington, #28610

Certified Residential and Light Commercial Air Balancing Technician

Universal Refrigeration Certification

Certified Commercial Energy Plans Examiner (CEPE)

Certified Commercial Energy Inspector

Diplomate in Forensic Engineering (DFE)

Certified Fire and Explosion Investigator (CFEI)

Prior Experience

Principal Mechanical Engineer, Director Mechanical Engineering, Jensen Hughes (formerly CASE Forensics), Mountlake Terrace, WA, 2011 to June 2020

Principal, Rampart Engineering, Marysville, WA, 1999 to 2011

President, Rampart Mechanical Corp., Anacortes, WA, 1993 to 1999

Engineer, Commercial Heating, Inc., Mount Vernon, WA, 1992 to 1993

Engineering Group Leader, Lamb-Grays Harbor Co., Hoquiam, WA, 1980 to 1992

Professional Affiliations

International Association of Plumbing and Mechanical Officials (IAPMO), Member of Publications Committee – producing and updating the Illustrated Training Manuals for the plumbing and mechanical codes

American Society of Heating, Refrigeration and Air Conditioning Engineers, Puget Sound Chapter (ASHRAE)

National Association of Fire Investigators (NAFI)

International Code Council (ICC)

Publications

Presentations

How Human Factors Can Complement Engineering in Civil Litigation: Principles and Case Studies, March 2021.

Features and Pitfalls of High-Efficiency HVAC Systems – Lessons from the Field, Webinar presenter December 2020.

Complex Construction Defect Investigations – Webinar presenter, October 2019.

Project Experience

Forensic Engineering: Provides technical and litigation support to the insurance and legal communities. Conducts building materials, components, plumbing, HVAC, vehicle, heavy equipment, and mechanical systems failure analysis investigations. Assists with construction defect litigation involving plumbing, HVAC and other building systems. Provides support for product development and product failures of a variety of mechanical components and systems. Expertise in the investigation of liability cases involving personal injury, and workplace accidents. Conducts laboratory testing and analysis.

Engineering design and consulting: Conducted stress analysis of aircraft maintenance platforms, and test fixtures for 747 and 757 landing gear. Performed HVAC design for commercial and residential buildings. Responsible for numerous residential building designs and structural analyses. Examined buildings for structural safety and code compliance. Designed seismic restraints for mechanical equipment. Participated in value engineering studies for school HVAC designs. Designed automated pulp roll stretch wrapping system. Designed and installed residential fire sprinkler systems.

Mechanical contracting: Responsible for HVAC system design, estimating, project management, and business management. Performed fabrication and installation of duct systems. Installed and serviced HVAC and refrigeration systems for residential, commercial and marine applications. Designed and installed fuel gas piping, flue piping, plumbing and boiler systems. Provided air system balancing and commissioning reports. Conducted energy code plan reviews and inspections. Responsible for HVAC system design, sales, estimating, and management of large projects. Performed air balancing and installation of large sheet metal work. Supervised shop work and installation for commercial and institutional projects. Engineering Supervision: Responsible for the Forest Products, Special Products, and Development engineering groups. Led as many as 21 people. Installation and start-up engineer for automated log handling systems in Ontario, Quebec, and Japan. Implemented safety and quality control standards for design, fabrication, and operation of equipment. Inspected fabrication shops to ensure compliance. Assisted sales department with application engineering.

Project Engineer: Responsible for design of five different multi-million-dollar log and wood waste handling systems for paper mills. Supervised engineering, installation, and start-up of equipment. Prepared sales proposals for various projects. Learned PC based CAD design and drafting tools. Designed machines including electro-mechanical drives, hydraulic power units, and pneumatic systems. Interfaced with electrical control designers. Worked with subcontractors during fabrication and shop-tested developmental machines. Types of machinery: log and waste conveyors, screens, hammer mills, log decks, saws, and automated pulpwood handling equipment. Supervised designers and drafters.

Career Development, Drafter: Responsible for designs of standard and developmental machines. Supervised drafters. Worked up to that position from beginning drafter. Received full scholarship from Lamb to complete college education.

Additional skills and expertise: Use of computerized analysis and CAD tools including: AutoCAD, MathCad, Chief Architect (3D building modeling), Structural FEA (Visual Analysis), Solidworks, CHVAC, HAP (Building energy analysis). Knowledge of codes and standards including: plumbing, mechanical and ventilation codes, fire sprinkler standards, energy code, building code; NFPA, ASHRAE, ANSI and ASME standards, CFR.

Additional Education & Training

ASHRAE courses: DDC Systems, Air-Conditioning System Components, Zoned Systems, 2020

Building Elevator Systems, CED Engineering, 2020

2015 WSEC Commercial Mechanical & Service Water Heating Systems Provisions, NEEC, 2017

Asbestos Awareness Training, Safety Unlimited, Inc., 2016

Total Pump Training, Engineered Software, Inc., 2014

2012 WSEC Commercial Mechanical Training, Western WA Chapter of ICC, 2014

Confined Space Entry Training, Argus Pacific, 2013

Construction Defects Liability in Washington, National Business Institute, 2012

National Fire, Arson, & Explosion Investigation Training Program, NAFI/NFPA, 2012

Investigation of Gas & Electric Appliance Fires, Fire Findings, Western MI University, 2012

Building Science Fundamentals, BSC, 2012

Residential Structural Design & Code Seminar, ICBO, 2003

Geothermal Heat Pump and Piping: Design, Installation, and Service, Waterfurnace Corp., 1998

Oregon Institute of Technology, Mechanical Engineering, 1980

Deposition & Trial Testimony

Item	Date	Court	Case Caption	Represented / Ref. / Client
Deposition	1/23/2020	United States District Court, Western District of Washington at Tacoma	Ocean Gold Seafoods Inc. v. Hartford Steam Boiler Inspection and Insurance Co.; No. 3:18-cv-05425 RBL	Hartford Steam Boiler / 121038 / Stephanie Andersen, Forsberg Umlauf; Jonathan MacBride, Zelle LLP
Deposition	11/1/2019	United States District Court Central District of California, Southern Division	Lynnwood Health Services, Inc. dba Lynnwood Post Acute Rehabilitation Center v. Affiliated FM Insurance Company; No. 8:19-CV-543 JVS (KESx)	Ensign Group, Robert Chavez / 2001053 Ptf. Rep. Chris Pasich, Pasich Law Def. Rep. Scott Johnson, Robins Kaplan LLP
Deposition	9/25/2019	Superior Court of the State of Washington for Snohomish County	The Commencement Owners Association, v. The Commencement Group, LLC.; No. 17-2-13643-9	The Commencement Group, LLC / 1446010 Timothy Shea, Wood, Smith, Henning & Berman LLP; Anthony Soldato, Klinedinst PC

Item	Date	Court	Case Caption	Represented / Ref. / Client
Deposition	8/6/2019 - 8/7/2019	Superior Court of the State of Washington for King County	Sixth & Lenora Apartments, LLC v. Aquatherm GMBH, a German entity; Aquatherm L.P., aka and/or dba Aquatherm NA; No. 17-2-20015-8 SEA	Sixth & Lenora Apartments / 3010001 Dan Heffernan Heffernan Law Group PLLC 1201 Market St Kirkland, WA 98033-5440
ADR	4/17/2019 4/26/2019		Arbitration Service of Portland: Redmond School District v. Skanska, et al.; Case No. 180214	Bend Heating / 696014 Megan Ferris MacMillan Scholz & Marks 900 SW Fifth Ave, Suite 1800 Portland, OR 97204
Trial	3/6/2019	Circuit Court of the State of Oregon for the County of Multnomah	Great Lakes Insurance, SE v. Universal Protection Services dba Allied Universal Security Services; Crown Energy Services dba Able Engineering Services | Lexington Insurance Company, Certain Underwriters of Lloyd's of London Subscribing to Policy No. B 510PR000001B; and SRI Eight Oregon LLC v. Universal Protection Service LP dba Allied Universal Security Systems; and Crown Energy Services Inc. No. 18cv02551	Lexington Insurance Co. / 131665 Waylon Pickett, Grotefeld Hoffmann 0324 SE Abernethy St. Portland, OR 97239
Deposition	2/5/2019		Osborne Construction Company and Renton Heritage LLC	Renton Heritage LLC / 3010002 Dan Heffernan Heffernan Law Group PLLC 1201 Market St Kirkland, WA 98033-5440

Item	Date	Court	Case Caption	Represented / Ref. / Client
Deposition	6/27/2018	Seventh District Court of the State of Idaho, for Madison County	Farm Bureau Mutual Insurance Company of Idaho as subrogee of Hyrum and Saralyn Allen, vs. Zillah Investments dba Advanced Insulation, Leisure Time OF IF, et al., Case No. CV-17-427	Farm Bureau / 1579058 Ryan Peck Farm Bureau Mutual Insurance Company of Idaho 275 Tierra Vista Dr Pocatello, ID 83205
Deposition	4/17/2018	Fourth District Court of Wasatch County for the State of Utah	Legacy Resorts, LLC., vs. Okland Construction Company, Clark Mechanical Contractors, Inc., Gunthers Inc., Vision Plumbing, LLC, et al.	Legacy Resorts, LLC / 2801001 Robert Mansfield Mitchell, Barlow & Mansfield, PC Boston Building, Nine Exchange Pl Salt Lake City, UT 84111
Deposition	3/26/2018	United States District Court, Eastern District of Washington at Seattle	The Travelers Indemnity Co., as subrogee to Washington State University, vs. Hoffman Construction Company	Washington State University / 652084 Bill Pierson, Jr. Law Office of William E Pierson Jr PC The Pioneer Bldg. 600 1st Ave Ste 233 Seattle, WA 98104-2238
Deposition	7/21/2017	United States District Court, District of Nevada	Travelers Property Casualty Company of America, Pacific Cheese Co. Inc., & Lake Valley Properties vs. Advanced Coil Technology, LLC, Phoenix Holdings of Owatonna, Inc., Hussman Corporation, Briggs Electric, Inc., Ray Heating Products, Inc., RHP Mechanical Systems	Pacific Cheese Co. Inc. / 1092013 Kevin P. Smith Stutman Law 500 Office Center Dr, Ste 301 Fort Washington, PA 19034-3211
Deposition	7/17/2017	Superior Court of Washington, County of King	Kyle Larson vs. BNSF Railway Company	Kyle Larson / 881004 James K. Vucinovich

Item	Date	Court	Case Caption	Represented / Ref. / Client
				Rossi Vucinovich PC 1000 2nd Ave Ste 1610 Seattle, WA 98104
Deposition	3/29/2017	Superior Court of Washington, County of King	Bellevue Towers Condominium Association vs. Bellevue Towers RPO, LLC; Bellevue Towers Corporation; vs. Hoffman Construction, et al.	Hoffman Construction Company / 1120032 Dirk Holt Scheer Law Group 701 Pike St Ste 2200 Seattle, WA 98101-2358
Deposition ADR ADR ADR ADR	2/24/2017 11/16/2015 12/14/2016 2/22/2016 3/8/2017		American Arbitration Association & International Center for Dispute Resolution Construction Industry Arbitration Rules: Holgate Street Properties, Inc. vs Mountain Construction Inc. No. 01-16-002-8293	Mountain Construction Inc./ 1120026 Anthony Scisciani III Scheer Holt Woods & Scisciani LLP 701 Pike St Ste 2200 Seattle, WA 98101-2358
Deposition ADR	2/7/2017 3/2/2017	Superior Court of Washington, County of King	Crystal Mountain Inc. vs Hermanson Company LLP No. 15-2-25045-1 SEA	Crystal Mountain Inc. / 549017 Ms. Shawn Rediger Williams Kastner PLLC 601 Union St Suite 4100 Seattle, WA 98101
Deposition	9/6/2016	District Court of the Fourth Judicial District of the State of Idaho, County of Ada	WRC Refrigeration v. ESI, Inc. Case No. CV OC 1402659	WRC Refrigeration / 2507001 Randy Schmitz Gjording Fouser PLLC Plaza One Twenty One, 121 N 9th St Boise, ID 83702
Deposition	11/19/2015	Superior Court of Washington, County of King	Washington Square Towers One & Two Condominium Association v. Washington Square Towers	Washington Square Towers / 1251011 Shane D. McFetridge

Item	Date	Court	Case Caption	Represented / Ref. / Client
				Lorber Greenfield & Polito LLP 2101 4th Ave ste 950 Seattle, WA 98121
ADR	10/30/2015		City of Kent v. M.A. Mortenson Company & Pace Industrial, Inc.	City of Kent / 2663001 Zak Tomlinson Pacifica Law Group 1191 2nd Ave Suite 2000 Seattle, WA 98101-3404
Deposition	9/1/2015	Superior Court of Washington, County of Spokane	Nevada Capital Insurance Company v. Patriot Fire Protection	Nevada Capital Ins. Co. / 461182 George Shumsky Shumsky & Backman PO Box 56028 Portland, OR 97238-6028
ADR	6/26/2015		Isernio's v. Poe Construction, Inc.	Isernio's Sausage Co. / 2663001 John Parnass Pacifica Law Group 1191 2nd Ave Suite 2000 Seattle, WA 98101-3404
Deposition	5/7/2015	District Court of the Fifth Judicial District of the State of Idaho, County of Blaine	The John & Pamela Bowen Family Trust v. Fairway Nine II Condominium Association, Inc.; John Haase; Harvey Heinrichs; Steve Moreland; Karen Pederson, Phil Syrdal; Pioneer West Property Management LLC; Anne Jacobi	Fairway Nine II Condominium Association, Inc. / 2161009 Bruce Burt Burt & Payne PC 7090 S Union Park Ave Suite 450 Midvale, UT 84047
Deposition	4/30/2015	District Court of the Third Judicial	Jackson Hop, LLC v. M&R Sheet Metal; CV2013-	Jackson Hop, LLC / 1579016

Item	Date	Court	Case Caption	Represented / Ref. / Client
		District of the State of Idaho, County of Canyon	11147	Tracy J. Crane Anderson Julian & Hull, LLP PO Box 7426 Boise, ID 83707-7426
ADR	3/17/2014		Vedder v. Dufour	Vedder / 2239001 Todd Nunn K&L Gates, LLP 925 4th Ave Suite 2900 Seattle, WA 98104-1158
Deposition	10/8/2013	Superior Court of WA, King County	Brian McCallum Jr v. Glacier Fish Co LLC; 12-2-11635-1 SEA	Glacier Fish Co., LLC / 181008 David Bratz LeGros Buchanan & Paul PS 701 5th Ave Suite 2500 Seattle, WA 98104-7051
Deposition	5/8/2013	Superior Court of WA, King County	Fifteen Twenty-One Second Avenue COA v. Opus NWR Development LLC; 12-2-24075-2 SEA	Opus NWR Development / 1120016 Dirk Holt Scheer Holt Woods & Scisciani LLP 701 Pike St Ste 2200 Seattle, WA 98101-2358