

# Robson Forensic

Engineers, Architects, Scientists & Fire Investigators

## RONALD J. NATOLI, P.E. Mechanical Engineer – Building Systems

### PROFESSIONAL EXPERIENCE

2010 to present **Robson Forensic, Inc.**  
*Associate*

Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving mechanical systems for buildings: design, construction, products, testing, evaluation and failure analysis. Areas of expertise include:

#### HVAC

- Heating equipment: Hydronic and steam heating systems, gas and oil-fired burners, boilers, air separators, safety relief valves, heaters, furnaces, flues, cabinet unit heaters, economizers, heat pumps, heat exchangers, heat & enthalpy recovery units, base board radiators, radiant tubing, variable air volume boxes (VAV), ducted fan coils, balancing valves, strainers, electric & steam heat trace
- Cooling equipment: DX, closed circuit fluid coolers, chillers, cooling towers, condensers.
- Controls: Temperature, pressure and humidity control, safety, energy management, building management, chilled water systems, heating/hot water/steam systems, burner control, control valving, VFD's, Lead/Lag/Auto Rotation, DDC, system integration, freeze protection, heat trace, load shedding/power management, system security/remote control, alarm reporting and historic data/reporting. 24, 120VAC, low voltage DC and compressed air systems.
- Distribution: Air handlers and ductwork, pumps and piping, circulators, noise control, fire safety/ smoke control, general and process exhaust systems, kitchen exhaust systems, outdoor/makeup air.
- Ventilation: Outdoor/makeup air, sick building syndrome, indoor air quality.
- Carbon monoxide: Testing, source determination.
- TAB: Testing, adjusting, and balancing of air and hydronic systems using NEBB procedures.

#### Plumbing, Water and Sewage

- Domestic cold and hot water: Temperature controls, boilers/water heaters, mixing valves, circulators, softeners, auto flush devices, washdown & landscape watering systems, water hammer and surge suppression.
- Sewage systems: Gravity and pumped, grease collection and interceptors, sludge dewatering, belt filter presses, sludge pumping station, polymer feed systems, odor control, chlorination, sand filters, flume and weirs.
- Gas systems: Natural and propane gas, nitrogen piping, oxygen piping, natural gas piping, regulators and venting, hood safety interlock, appliances.

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- Oil systems: Fuel oil storage and containment, distribution pumps/skids, generator freeze/gel protection, daytank controls & piping, alarming and safety interlocks.

### Industrial Systems

- Process: High pressure air and steam, hydraulic systems, ammonia refrigeration, flash mixing, pumps and controls, flare systems, digester gas systems, engines, generators. Belt and drag-link conveyors, lime slurry, incinerators, rolling mills, cleanrooms, acid exhaust, solvent exhaust, ovens, autoclaves. Medical gas systems. Explosion-proof equipment.
- Air quality and ventilation: Fans, blowers, ductwork, exhaust hoods, fume hoods, clean air systems, wet scrubbers, carbon absorbers, cyclone separators, biofilters, activated carbon filtration, spray dryers, baghouses, odor control, MG sets, DC motors, battery room ventilation.
- Power: Generators, ATS's, tie-breakers, wet & dry transformers, harmonic mitigating transformers, UPS's, switchgear, main distribution panels.

### Fire Science and Fire Protection Engineering

- Fire alarm systems: Heat detectors, smoke detectors, carbon monoxide detectors, flow detectors, OS&Y valve switches.
- Fire systems: Wet, dry, and double interlock preaction sprinkler systems, Halon suppression systems, CO2 systems.
- Combustion: Combustion control of natural gas and fuel oil, low NOx techniques.
- Equipment: Fire pump systems (electric/diesel), jockey pumps, vertical turbine fire pumps, heated water storage tanks, dual use storage tanks.

### Manufacturing Process

- Welding, soldering, oxyacetylene cutting/scarfing, plasma cutting, drilling, sawing, rolling, material conveying, etching, chemical baths.

### Types of Facilities and Buildings

- Educational, healthcare, industrial, commercial, cleanrooms, residential.

### Equipment

- Operation experience with the following equipment: Voltmeter, amprobe, thermocouples, data loggers, combustion analyzers, anemometers, ultrasonic flowmeters, gas meters, water meters, fuel oil meters, tachometers, manometers, air flow hoods.
- Maintenance programs for mechanical, electrical and plumbing systems.

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- 2010 **TUDI Mechanical Systems**, Pittsburgh, PA  
*Commercial Projects & Design Build Operations Manager*
- Responsible to review and evaluate proposed mechanical, electrical, and low voltage systems. Systems evaluated from design phase through installation and final acceptance. Conducted drawing and specification reviews, and submittal reviews of MEP systems.
  - Responsible for the management, startup and commissioning of multiple projects.
  - Provided technical support of the energy solutions group to modify existing mechanical or electrical systems to provided energy savings.
  - Systems include BAS systems, VFD's, HVAC systems, air handlers, chillers, pumps, cooling towers, VAV boxes, cabinet unit heaters, boilers, furnaces, exhaust fans, air and water balancing.
- 2007 to 2010 **L.P. Ciminelli Inc**, Buffalo, NY  
*MEP Operations; Project Manager*
- Responsible to review and evaluate mechanical, electrical, and low voltage systems and identify design issues prior to construction.
  - Oversee the installation, startup and commissioning of MEP systems. Systems include low, medium and high voltage systems, emergency generation/ transfer systems, lighting (including dimming and emergency systems), fire alarm, data, telephony, fire alarm, BAS, mechanical wet-side systems, mechanical dry-side systems, food & beverage, plumbing systems and compressed gas systems.
  - Construction team included union mechanical, plumbing, electrical and low voltage contractors.
- 2003 to 2007 **Johnson Controls Inc.**, Pittsburgh, PA  
*Area Manager*  
*(western Pennsylvania, West Virginia, Ohio, Maryland and counties in Kentucky)*
- Responsible for sales, engineering and operations (engineering and delivery) of the Building Efficiency Group.
  - Oversaw engineering and startup of complex air-handling, chilled water, heating hot water and laboratory ventilation systems.
  - Oversaw the design and implementation of low voltage systems. Low voltage systems included data and telephony infrastructure, paging, RF location/warehouse management systems, nurse call, access control, surveillance, fire alarm, wireless clock, and various building automation systems (BACnet, LON, N2 and various propriety protocols). Systems also included Enterprise Asset Management and Physical Asset Management (MRO, CMMS, TPM) solutions.
  - Supported field services with startup, troubleshooting and forensic services.
  - Worked with design consultants to identify design deficiencies and errors

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- 2002 to 2003 **CDM Inc.**, Pittsburgh, PA  
*Strategic Business Development Manager – Sr. Engineer*
- Responsible for the development, implementation and delivery of MEP system solutions to the private sector.
  - System solutions included: the air and waterside of HVAC; cleanroom systems; process air, water and gas systems; process exhaust systems; power generation, cogeneration, energy recovery, and secondary power; boiler & chiller plants; building and process automation.
  - Oversaw production of design documents.
  - Provided Services During Construction and Commissioning Services.
- 1998 & 2000 to 2002 **XConnect - PricewaterhouseCoopers LLC**, Pittsburgh, PA  
*Consultant; Associate Director*
- Responsible for the sales and support of the PricewaterhouseCoopers Mid-Atlantic Consumer Industrial Product & Technology Consulting Practice Solutions.
  - Services include: process improvement, energy management & minimization solutions, lean manufacturing/lean enterprise, ERP/MRP solutions, business continuity/disaster recovery evaluations, enterprise service management/asset management, and business process optimization
- 1994 to 1998 **Industrial Design Corporation**, Pittsburgh, PA  
*Lead Mechanical Engineer; Assistant Project Manager*
- Responsible for all phases of project development (strategic planning, contract negotiations, programming & design development, construction services and implementation. Managed design teams. Teams ranged in size from 20 to 100 persons.
  - Responsible for the design and construction of a 100,000 class to sub-class 1 semi-conductor cleanroom facilities, research facilities and product development facilities.
  - Led a 10-person on-site SDC (services during construction) team to assist Marshall Construction in their construction management efforts and to quickly solve all constructability and operation issues.
  - Systems included large chilled water plants (12,000 to 28,000 tons including absorption chillers), hot water and steam boiler plants, chilled water distribution, medium and high temperature hot water systems, steam distribution systems, process cooling water systems, various exhaust systems (ammonia, acid, solvent, general), reverse osmosis and de-ionized water systems, various process exhaust and ventilation systems, cleanroom and isolation room systems, energy recovery systems, air pollution control (lime slaking/desulphurization) systems, fire

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protection, make-up air handling systems, cleanroom & recirculation air-handling systems, general air-handling systems, automated material handling systems and process/building automation systems.

1990 to 1994 **Chester Environmental Group**, Pittsburgh, PA  
*Sr. Mechanical Engineer; Project Lead*

- Responsible for engineered solutions for environmental and industrial processing plant operations.
- Responsibilities included the design, approval and construction support of all mechanical systems including, but not limited to: natural gas, high & low pressure steam, high temperature hot water, potable water, chilled water, boiler systems, industrial water, sludge, sludge dewatering, clarifiers, DAF's, wet/dry well ventilation, chlorine storage ventilation, de-ionized water systems, chemical distribution, oxygen, compressed air, fire protection systems, general and plant HVAC systems, odor control systems and chemical exhaust systems.

1987 to 1990 **Rust International Inc.**, Pittsburgh, PA  
*Mechanical Engineer; Project Lead*

- Responsible for design, construction and startup of various MEP systems for the heavy metals, chemical, aerospace, and pulp/paper industries, as well as providing waste management solutions (energy recovery facilities) to State and Local governments associated with large metropolitan areas.
- Responsibilities included the design and approval of all mechanical systems including, but not limited to: lime slurry generation/slaking systems, spray dryers, baghouses, ID fans, incinerator/turbine steam systems, natural gas piping, oxygen piping, high & low pressure steam, high temperature hot water, potable water, chilled water systems, boiler systems, industrial water, sludge, sludge dewatering, paper pulp, de-ionized water, hydraulic, chemical and compressed air, general and plant HVAC and chemical exhaust systems.

1985 to 1987 **Gearhart Industries, Inc.**, Broussard, LA  
*Mechanical Engineer; Field Engineer*

- Provided services and well support to the oil and natural gas industries. Information included: porosity, pressure, gamma radiation, direction, temperature, inclination and resistance on a real time basis.
- Assisted R&D department in implementing and testing new technologies.

## PROFESSIONAL CREDENTIALS

Professional Engineer: NCEES, Pennsylvania, Virginia, West Virginia, North Carolina, South Carolina, Ohio, New York, Illinois, Kentucky

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### EDUCATION

B.S., Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA, 1985

#### *Additional Training:*

CSST and Fire Spread Claims, NASP Ohio Chapter, February 2012

National Association of Subrogation Professionals (NASP) – Commercial Kitchen Fires, 2012

Appliance Fire and Failure Investigation, Pennsylvania Association of Arson Investigators (PAAI) – State College, PA, 2011

Recognizing Revenue Potential

Managing Interpersonal Relationships

DPIC: Risk Management

Situational Leadership

Total Quality Management

DPIC: Lessons in Liability

Managing for Productivity

Systems Management Discipline I, II, III

Project Management

Basic Six Sigma

### PROFESSIONAL MEMBERSHIPS

ASHRAE – American Society of Heating, Refrigeration and Air Conditioning Engineers

Pennsylvania Association of Arson Investigators, Associate Member (PAAI)

### PRESENTATIONS

CEU Institute 2011 Property Coverage and Risk Seminar; “Moisture Control & Water Intrusion – The Theory”