

SCS • SHEPHERD CONSULTING SERVICES

Roofing, Waterproofing, Sheet Metal & Exterior Wall Construction Consulting

Curriculum Vitae

John D. Shepherd, RRC, RRO

Roofing, Waterproofing, Sheet Metal and Exterior Wall Consultant

SUMMARY OF EXPERIENCE:

I am the founder of Shepherd Consulting Services, a division of Shepherd Roof Consulting. I have been actively involved in the roofing and construction industry for over 40 years, including 10 years as an active roofing contractor and the last 18 years as a roofing, waterproofing, sheet metal and exterior wall consultant. Over the last 18 years, I have attended about 1100 hours of continuing education courses related to roofing, waterproofing, sheet metal, exterior walls, windows and other various building envelope components. I am an RCI Registered Roof Consultant and Registered Roof Observer, a HAAG Certified Residential and Commercial Roof Inspector, a licensed roofing contractor in California and Arizona, and a Certified Building Science Thermographer.

In the last 18 years my experience has included the following:

- **Construction Defect Litigation Support:** Retained as an expert in over 400 construction defect litigation cases and have at times represented plaintiffs, developers and/or sub-contractors (roofing, sheet metal, framing, siding, below-grade and deck waterproofing, windows and doors). I have extensive mediation and expert meeting experience. I have been deposed more than 60 times and testified in over 20 trials.
- **Property Loss Damage Claims Investigations:** I have extensive experience in evaluating roof, waterproofing, siding, stucco and window related property damage claims. As a consultant I have investigated, written reports, and provided repair recommendations, for over 650 wind, earthquake, hail, and/or mold related property damage claims. I have also testified in Appraisal Hearings, and have been retained as an expert for the defense in property damage claims that have gone into litigation.
- **Standard of Care and Building Code Issues:** I am an expert in roofing and waterproofing related building codes issues, roofing related standard of care issues and roof top safety. I have represented clients in roofing related personal injury, property damage and business practices litigation resulting from actions occurring during and/or after the installation of new roofs and/or from maintenance related actions.
- **Leak Investigations:** As a consultant I have personally conducted over 500 leak investigations on roofs, decks, exterior and below grade walls including many where others had difficulty in determining the source and causes of a problem.
- **Specification and Detail Development:** For Commercial and Residential new and reroof projects I have: conducted plan and specification review for architectural firms; prepared roof specifications, details and bid packages for building owners; attended and/or managed roofing related pre-bid, pre-construction and in-progress meetings.
- **Construction Installation Inspections and Monitoring:** I and/or my firm have conducted both full-time and part-time inspections and/or monitoring of roofing, waterproofing and exterior wall related replacement, repair, and new construction projects.
- **Roof Surveys:** Over the last 18 years I have personally conducted over 1000 roof surveys, and prepared written reports of the surveys, on residential buildings and on commercial buildings (ranging from 1,000-300,000 sq/ft). At times these surveys have included moisture scans using infrared and/or capacitance technology.

PROFESSIONAL HISTORY:

- 3/01- to Present **SCS SHEPHERD CONSULTING SERVICES**
Registered Roof Consultant/President, Torrance, California
- Analysis of wind, earthquake, mold, fire and hail related roof damage insurance claims on residential & commercial buildings
 - Construction defect litigation support services (includes investigation, analysis, documentation, expert witness, cost estimating and trial preparation) for roofing, sheet metal and building envelope issues
 - Provide expert testimony on roofing related standard of care issues in personal injury, water damage and business practices litigation.
 - Provide general consulting of roofing, waterproofing and building envelope system installations including specification and detail development, pre-bid and pre-job conferences and roof installation monitoring
 - Conduct leak investigations to determine the means and method of water intrusion into the building envelope and roofs of residential and commercial buildings
 - Roof surveys, Due Diligence investigation, analysis and documentation for residential and commercial real estate
- 8/95- 3/01 **ROOFING & WATERPROOFING FORENSICS, INC. –**
Registered Roof Consultant, Yorba Linda, California
- Conduct leak investigations as to means and method of water intrusion into the residential and commercial buildings
 - Analysis of wind, earthquake, mold, fire and hail related roof damage insurance claims on residential & commercial buildings
 - Provide construction defect litigation support services including investigation, analysis, reports and/or cost estimating for roofing and building envelope systems
 - General consulting of roofing system specification and detail development and well as specification review for architects
 - Provide expert witness testimony in regards to roofing, sheet metal, waterproofing and window related issues
 - Roof systems application inspections
- 8/94-8/95 **SHEPHERD ROOF CONSULTING/COAST TO COAST ROOFING SERVICES, INC.**
Consultant/President, Redondo Beach, California
- Roof inspections and surveys
 - Forensic analysis of moisture problems
 - Roof specification and detail development and project monitoring
 - Construction defect investigation and assessment
- 2/89-8/94 **RAINPROOF ROOFING –**
Owner/Contractor, Garden Grove, California
- Managed and supervised a crew of 15 (roofers and laborers)
 - Sales and marketing (Gross sales of 1.2 million in 1992)
 - Roof consulting including forensic analysis, destructive testing, expert witness, inspections, surveys, and project monitoring
- 5/86-1/89 **ALL ASPECTS OF ROOFING –**
Sales & Marketing Representative, Gardena, California
- Pursued commercial and residential leads
 - Marketing including home shows, canvassing and networking
 - Project scheduling, in-progress and final roof inspections
- 11/83-5/86 **DB CONSTRUCTION –**
Journeyman Roofer, Big Bear Lake, California
- Installed all types of steep roofing materials on residential and commercial buildings for DBC (primary employer) and several other general contractors
 - Leak investigations & general maintenance roof inspections

Professional History Continued:

- 6/81-3/83 **JP'S ROOFING –**
 Owner, Journeyman Roofer, Seattle, Washington
- Ran a 3-5 man crew installing all types of steep-sloped & low-sloped roof materials.
 - Roof inspections (due-diligence) for real estate purchases.
 - Leak investigations
 - Evaluate and upgrade residential attic ventilation systems
- 3/79-6/81 **JERRY DRAPER ROOFING –**
 Journeyman Roofer, Seattle, Washington
- Installed all types of steep-slope and low-slope roofing materials on residential and commercial buildings
 - Leak investigations & general maintenance roof inspections
- 7/75-11/77 **INGWALD JOHNSON ROOFING –**
 Journeyman Roofer, Plymouth, Indiana
- Installed all types of steep-slope and low-slope roofing materials on residential and commercial buildings
 - Leak investigations & general maintenance roof inspections
- 6/73-7/75 **J&W ROOFING –**
 Journeyman Roofer, Depew, New York
- Installed all types of steep-slope and low-slope roofing materials on residential and commercial buildings
 - Installed siding, gutters, wood/metal fascia and soffits, and conduct rough carpentry
 - Leak investigations and roof repairs
- 6/69-6/73 **J&W ROOFING –**
 Roofing apprentice/Journeyman roofer, Depew, New York
- Worked part time on weekends, before and/or after school and through the summer. Started as general laborer and worked up to journeyman roofer by 1973.
 - Installed all types of steep-slope and low-slope roofing materials on residential and commercial buildings

CERTIFICATION AND LICENSES:

- Registered Roof Consultant, certified by the Roof Consultants Institute (#212).
- Registered Roof Observer, certified by the Roof Consultants Institute (#019).
- California C-39 Roofing Contractor License (#557494).
- Arizona K-42 Roofing Combination License (269167)
- Certified Tile Roof Installer (by the Tile Roofing Institute)
- Certified Tile Specialist (by the Tile Roofing Institute).
- RICOWI Wind Investigation Program (WIP) Credentials
- RICOWI Hail Investigation Program (HIP) Credentials
- Haag Certified Residential and Commercial Roof Inspector (#200911150)
- Building Science Thermography Certification (ITC #32564)

PROFESSIONAL AFFILIATIONS:

I am currently a member of the following organizations:

- RCI Inc. – The Institute of Roofing, Waterproofing & Building Envelope Professionals.
- Western States Roofing Contractors Association (WSRCA)
- Roofing Industry Committee on Weather Issues, Inc. (RICOWI)
- American Institute of Architects California Council (AIACC)
- Los Angeles County Bar Association (LACBA)
- ASTM International

POSITIONS HELD IN PROFESSIONAL ORGANIZATIONS:

I am currently or have in the past held the following positions with roofing and/or consulting organizations:

- 04/2009 to Present: Member of the RCI, Inc. Advocacy Committee.
- 04/2008 to Present: Member of ASTM D08 committee.
- 01/2004 to 02/2010: Chairman of the So Cal Chapter of RCI Education Committee.
- 04/1999 to 02/2012: Committee Chairman of the annual RCI 2-day Hawaii Winter Workshop.
- 01/2009 to 01/2010: President of the So Cal Chapter of RCI.
- 04/2004 to 03/2009: Member of the RCI International Chapter Development Committee.
- 01/2007 to 01/2010: SoCal Chapter of RCI liaison to the California Real Estate Inspectors Association.
- 01/2008 to 01/2009: At Large Member of the SoCal Chapter of RCI.
- 01/2006 to 01/2007: Vice President of the SoCal Chapter of RCI.
- 04/2005 to 04/2006: Member of RCI International Convention Education Committee.
- 01/2005 to 01/2006: Secretary of the SoCal Chapter of RCI.
- 02/2003 to 03/2005: Member of the WSRCA Associate Advisory Council.
- 04/2000 to 04/2005: RCI International liaison to the WSRCA.
- 04/1999 to 04/2001: RCI Region VI Director and member of the RCI Board of Directors.

PUBLICATIONS:

Construction industry related articles I have written include the following:

- "Roof Drainage Issues: Designing Commercial Roof Systems in Compliance with the IBC- Part 2", Western Roofing Magazine, Mar/Apr 2012.
- "Who is the Designer of Record: Designing Commercial Roof Systems in Compliance with the IBC - Part 1", Western Roofing Magazine, Nov/Dec 2011.
- "Licensing of Roof Consultants", Western Roofing Magazine, July/Aug 2004.
- "International Building Code Update", Western Roofing Magazine and Architects West Magazine, Jan/Feb 2004.
- "Tile Roofs", RCI Interface - Journal of the Roof Consultants Institute, Jan 2000

SPEAKER HISTORY:

- June 2011: "Roof Damage Investigation: Misclassification of Roof Damage Causation and Fraud in Insurance Property Damage Claims", Presented at the RCI, Inc. Region IV meeting in Las Vegas, NV.
- May 2011: "Attic Condensation and Moisture Control in Residential Buildings". Presented at the Moisture Intrusion Seminar at the CREIA 2011 Spring Conference in Ontario, CA
- November 2009: "Roof Top Quality Assurance" Presented: Introduction/History, Role of the Observer, Reports, Construction Documents, Safety, Legal issues, and Ethics for the RRO. San Diego, CA
- November 2008: "California Building Code Update: Roofing", at the SOCAL Chapter of RCI Seminar - "California Building Code Update: Roofing, Waterproofing & the Building Envelope" San Francisco, CA
- June 2008: "Building Code Changes You Need to Know" at the RCI Inc. Region IV meeting at the 2008 WSRCA Convention, Las Vegas, NV.
- April 2008: "California Building Code Update: Roofing", at the San Diego Roofing Contractor Association meeting, San Diego, CA.
- February 2008: "California Building Code Update: Roofing", at the SOCAL Chapter of RCI Seminar - "California Building Code Update: Roofing, Waterproofing & the Building Envelope" Long Beach, CA.
- October 2007: "Water Damage Claims: Investigation of Residential Roofing Issues", at the PLRB/LIRB Regional Adjusters Conference, Costa Mesa, CA.
- June 2007: "Inspecting Cedar Shake and Cedar Shingles Roofs", RCI SOCAL Chapter "Inspecting Steep Slope Roofs" Seminar, Downey, CA.
- July 2006: "Inspecting Concrete Tile Roofs", RCI SOCAL Chapter "Inspecting Steep Slope Roofs" Seminar, Session 2 on the RCI "Road to the Registered Roof Observer Credential", Downey, CA
- May 2006: "Preparing to take the RCI Registered Roof Observer Examination", Downey, CA

Speaker History Continued:

- May 2006: "Plaza Decks & Stairs with Protected Membrane and Plaza Decks & Stairs with an Integral Wearing Surface Membrane", at the RCI SOCAL Chapter "ASTM E-2266 Seminar, Downey, CA.
- June 2005: Steep Sloped Roof Ventilation
RCI International • Region VI Summer Workshop, at the WSRCA 29th Convention, Las Vegas, NV
- January 2005: "A Practical Guide to Prepare for the RCI Register Roof Consultant Examination", 5th Annual RCI 2-day Hawaii Winter Workshop, Honolulu, Hawaii
- April, 2004: "Roof Component Damage from Earthquakes"
PCS 2004 Catastrophe Conference, Long Beach, CA
- June, 2003: "Mold - Case Studies, It's Not always the Roofers Fault"
RCI Region Six Summer Workshop @ the WSRCA Annual Convention, Las Vegas, NV
- April, 2003: "Trends in Fraudulent Mold, Asbestos and Construction Defect Claims"
2003 Insurance Fraud Management Conference, Baltimore, MD
- April, 2003: "Roof and Wind Damage Claims "Southern CA Chapter IASIU Property Fraud Seminar, Commerce, CA
- March, 2003: "Identifying and Investigating Roof Problems"
Golden Eagle Insurance Roof Education Seminar, San Diego, CA.
- February, 2003: "Identifying and Investigating Roof Problems"
State Farm Insurance Roof Education Seminar, Culver City, CA.
- January, 2003: "Reroofing and Building Code Compliance"
Roof Consultants Institute Region Six 3rd Annual Hawaii Winter Workshop, Honolulu, HA
- June, 2002: "Reroofing and Building Code Compliance"
RCI Region Six Summer Workshop @ the WSRCA Annual Convention, Las Vegas, NV
- October, 2001: "Identifying and Investigating Roof Problems"
Farmers Insurance Roof Education Seminar, Commerce, CA.
- September, 2001: "Identifying and Investigating Roof Problems"
Farmers Insurance Education Seminar, Orange, California
- June, 2001: "Special Issues in Investigating Roofs"
Murchison & Cumming Insurance Loss Appraisal Seminar, Los Angeles, California
- November, 2000: "Visual Surveys and Drainage"
Roof Consultants Institute Fundamentals of Roof Consulting, San Diego, California
- January, 2000: "Building Codes"
RCI Education Course: Rooftop Quality Assurance, Los Angeles, CA
- June, 1999: Roof Consultants Institute, Las Vegas, Nevada
Region VI Auxiliary Technical Program "Roof Surveys and Analysis"
- March, 1999: "Photographic Documentation: Videography and Digital Photography "Roof Consultants Institute Convention, Charlotte, North Carolina
- August, 1998: Presentation for Damage for Allstate Insurance Co.
"Understanding the Differences: Earthquake, wind & age appropriate wear roof damages"
- June, 1998: "Cementitious Wood Fiber Shakes – Failure Analysis" Western States Roofing Contractors Association's 24th Annual Convention & Trade Show, Anaheim, CA

FORMAL EDUCATION:

6/1973 – Graduated Lancaster Central High School, Lancaster NY
 1990-91 Attended South Seattle Community College, Seattle, WA
 1995-6 Attended El Camino College, Torrance, CA

INDUSTRY EDUCATION: (Current through June 2012)

In order to keep abreast of new building standards, methods and installation practices, since 1993 I have attended about 1100 hours of roofing, waterproofing & building envelope technical education courses. Most of these courses were taken with the following organizations:

- RCI International: The Institute of Roofing, Waterproofing and Exterior Wall Professionals (RCI)
- National Roofing Contractor's Association (NRCA)
- Western States Roofing Contractors Association (WSRCA)
- Forensic Consultants Association of Orange County (FCAOC)
- University of Wisconsin-Madison (UWM)
- Roofing Industry Education Institute (RIEI)
- International Roofing & Waterproofing Consultants Institute (IRWC)
- Construction Specifier's Institute (CSI)
- Los Angeles County Bar Association (LACBA)
- Contractors State License Board (CSLB)
- International Conference of Building Officials (ICBO)
- Spray Polyurethane Foam Association (SPFA)
- The Tile Roofing Institute (TRI)
- California Real Estate Inspectors Association (CREIA)

INDUSTRY EDUCATION & TRAINING:

2012 Education/Training:

- RCI, Inc. International Annual Convention (18.0 hrs), Dallas, TX
 - Water Testing Misconceptions: Fenestration Product Certification vs. Forensic Investigation of Building Leaks
 - Evaluating Condensation Resistance for the Design of Wall Assemblies
 - Evaluation of Roofing Renovation Methods by an Energy-Based Life-Cycle Analysis
 - Liquid Sealants: Selection, Design and Installation
 - The Evolution of EIFS
 - Communication Strategies of Expert Witnesses
 - Roof Warranties: Duration vs. Coverage
 - Repair Strategies for Metal Roofing
 - Effective Use of Roof Coatings
- RICOWI Annual Technical Program (6.0 hrs), Dallas TX
 - Vapor Permeability Provides No Performance Benefit for Roofing Underlayment in Vented Attics
 - Using Hydrothermal Modeling to Solve Roof Moisture Problems
 - Air Intrusion and Its Impact on Moisture Transport in Mechanically Attached Roofing Systems
 - Cool Roofs Cause Condensation – Fact or Fiction
 - RICOWI 2011 DFW Hail Investigation
- 12th Annual RCI Hawaii Winter Workshop (12.5 hrs), Honolulu, HI
 - Condensation: Using Thermography to Identify Temperatures in Wall and Roof Assemblies
 - Condensation Related Wood Rot and Mold Growth: The Under Appreciated Role of Air Intrusion
 - Rooftop Solar PV: Key Considerations for Success from a Roof Consultants Perspective
 - Designing Single-ply Membrane "Cool Roof" Systems for Service and Durability
 - Understanding Long-term Weathering Performance of TPO Roofing Membranes
 - Bonded Pull Tests are Not Just for Your Roof Membranes Anymore, A Review of ASTM E 2359
 - Metal Edge Systems for Low Slope Roofs: Design, Testing, and Performance
 - Design Considerations for Open Joint Rainscreen Cladding System
 - Lightweight Insulating Concrete and Re-roofing Applications
 - Communication Strategies of Expert Witnesses
 - Understanding ANSI/SPRI ES-1

2011 Education/Training:

- RCI, Inc. • Region IV Summer Workshop, Reno, NV (6.0 hrs)
 - Roof Damage Investigation: Misclassification of Roof Damage Causation & Fraud in Insurance Claims
 - The Do's and Don'ts of Tile Roof Design Installation and Inspections
 - A Critical Review of the Life Span of TPO and PVC Single Ply Roof Membrane
 - Preparing to Defend Yourself: Documentation and Preparation
- Western States Roofing Contractor Association Annual Convention, Reno, NV (6.0 hrs)
 - Spray Foam Roofing – what Makes this Roof System Popular in a Down Economy
 - The Art of Slate Roofing for the 21st Century
 - New TPO Repair and Maintenance Guidelines
 - Metal Roofing in a Northern Climate
 - TPO 10th Year Report
- Inspection Conference (8.0 hrs), Casey, O'Malley Associates, Las Vegas, NV
 - NRCIA Certified Roof Inspector
 - LAM, EPDM, MOD Bitumen Roofing Inspections
 - Residential Concrete Issues

2011 Education/Training (continued):

- Moisture Intrusion (13.0 hrs), CREIA Spring Conference, Ontario, CA
 - Attic Condensation
 - Decks and Waterproofing
 - Window Inspections
 - Stucco and Other Wall Cladding
 - Building Code Changes
 - Stucco Inspections
- RCI, Inc. International Convention & Trade Show, Reno, NV (10.5 hrs)
 - Dynamic Water Vapor Permeance of Building Materials
 - The Correlation between Wind Resistance and the Physical Properties of Fiberglass Shingles
 - The Development of FM Approved Standards for a Class 1 Steep-Roof Cover
 - Full of Hot Air: How the IRC fails to address Effective Attic Ventilation
 - Investigation and Litigation of a Roof Failure: Who Will Pay?
 - Case Studies of Roofing and Cladding Failures Involving Internal Pressurization and Topographical Effects
 - Cladding Attachment Schemes for Three-Coat Stucco Veneer
- Sheet Metal Symposium (7.0 hrs), SoCal Chapter of RCI and WESTCON, Downey, CA
 - SMACNA Appendix B: Attributes and Limitations of Different Types of Sheet Metal for Flashing
 - The Wind Resistance of Perimeter metal in Roofing (ANSI/SPRI ES-1)
 - Sheet Metal Flashing in Low-Sloped Roofs and Deck Waterproofing
 - The Challenges Facing Reconstruction Architects and Contractors
 - Cladding Attachment Schemes for Three-Coat Stucco Veneer
 - Code Requirements and Sheet Metal Flashing
 - Sheet Metal Flashing in Steep-Sloped Roofing
 - Sealing, Soldering and Welding
 - Flashing Details in Project Documents
 - Wall Flashings
 - Field Joints
- 11th Annual RCI Hawaii Winter Workshop (12.5 hrs), Honolulu, HI
 - A Critical Review of the Life Span of TPO and PVC Single Ply Roof Membranes.
 - Designing, Specifying, & Testing Windows for Water Penetration Resistance: Changes in the AAMA 502
 - Failure in the Transition of a Curtain Wall to a Roof Expansion Joint over a Supercomputer, a Case Study.
 - Building Envelope Peer Reviews - Tips and Techniques.
 - ASTM E2270-05: Inspection Guidelines & Investigation Standards for Unsafe Conditions on Building Facades
 - Utilizing Infrared Imaging to detect filled versus unfilled cells in exterior Concrete Masonry Unit (CMU) Walls.
 - Building Science and Infrared Thermography: Heat, Air, Moisture Flow with Buildings
 - The Consequential Structural Effects of Improper Design or Installation of Non-Structural Systems.
 - Google and Its Applications for Use in the Practice of Roofing, Waterproofing, and Exterior Wall Consulting
 - Infrared Thermography for Roofing Investigations.
 - Trouble Shooting in Design of Construction Detail.
- CA Earthquake Accreditation Course (7.0 hrs), HAAG Engineering, San Francisco, CA.

2010 Education/Training

- Western States Roofing Contractor Association Annual Convention, Reno, NV (6.0 hrs)
 - Building Codes Seminar - How the 2009 IBC Affects You and the Roofing Industry
 - Shingles Seminar - Issues with Installing Shingles on Lower Slope Roofs
 - Roofing Technology Seminar - From Inspections to Proposals: Using Today's Technology
 - Waterproofing Seminar - Coatings and Reinforced Waterproofing Membranes and What You Need to Know
- RCI, Inc. • Region IV Summer Workshop, Reno, NV (6.0 hrs)
 - Sprayed Polyurethane Foam in the Building Envelope
 - Water Intrusion & Common Curtain Wall Problems
 - Taper Insulation Systems and Design
 - Gardening and Roof Scapes
 - Daylighting and Photovoltaics
- Building Science Thermography Certification (28.0 hrs), by ITC, Fremont, CA
- Certified Commercial Roof Inspector Training Course (20 hrs), HAAG Engineering, Las Vegas, NV
- WESTCON • STUCCO: "An in Depth Look at a Common Assembly", Berkeley, CA (8.0 hours)
 - Performance and application of weather resistive barriers and self adhered flashings
 - Flashings for parapets, beams, pipes, etc. and counter flashing for roofing
 - Stucco materials and mixes and what to specify for different needs
 - Stucco finishes, elastomeric and fabric reinforced finishes
 - Drainage wall & cavity wall performance differences
 - Stiffness and stability needed for structural walls
 - Flashing for windows (nail-on fin/store front) & doors
 - Control Joint and reveal performance and installation
 - Expectations of stucco and where not to use it
 - Wood and gypsum sheathing requirements
 - Lath types and attachment
 - Stucco application and curing

2010 Education/Training (continued):

- RCI Inc. Region IV 10th Annual Hawaii Winter Workshop, Honolulu, HI (12 hrs)
 - Honolulu We Have a Problem
 - Planning the Investigation and Establishing the Team
 - Protocols for Building Envelope & Roof investigations
 - Current Diagnostic Tools and Uses
 - Roof, Sheet Metal and Plaza Deck Evaluation
 - Laboratory Sampling and Instruction for Testing
 - Drafting of Expert Reports & Testimony Preparation
 - Expert Meetings/Preparation for Mediation, Arbitration & Trial
 - Evaluation of Windows, Curtain wall & Storefront Systems
 - Investigations of Leaking Walls and Facades
 - Investigation of Sealants and Surface Sealers
 - Insurance Considerations and Coverage Issues
 - Documentation of an Investigation
 - An Expert's Role in Mediation
 - Reporting to Owners and Other Interested Parties
 - Investigation of Below Grade Waterproofing

2009 Education/Training:

- Level I Thermography Certification course (28.0 hrs), ITC, Las Vegas, NV
- Certified Residential Roof Inspector Training Course (20 hrs), HAAG Engineering, San Diego, CA
- Building Envelope Symposium (16 hrs), RCI Inc, San Diego, CA
 - Dual Sealed Expansion Joints in Roofing & Waterproofing Applications
 - Dubai International Air Terminal – External Envelope and Interior Linings
 - Effective Utilization of Mock-ups in the Building Envelope Process
 - Osmosis and Blistering of Polyurethane Waterproofing Membrane
 - Exterior Stair Waterproofing - Assembling the Puzzle
 - Using Humidity/Temperature Loggers for Moisture Investigations
 - Flashing Block Frame Windows in Stucco Walls
 - Sustainable Roof Design – More than a Black and White Issue
 - Evaluating the Water Resistance of Fenestration Products
 - Corrosion: The Use of Metal within Masonry Wall Systems and Associated Life-Cycle Issues
 - Thin Marble Facades: History, Evaluation, and Maintenance
 - Development of Energy Ratings for Insulated Wall Assemblies
- RCI Inc. • Region IV Summer Workshop, Reno, NV (6.0 hrs)
 - Membrane Waterproofing Applications for Garden Roofs and Electronic Field Vector Leak Analysis
 - Available Solar Technologies, Installation, Economics and Financing Options
 - Rooftop Photovoltaics – Questions Roof Professionals Need to Ask
 - Design Problems in solar Voltaic Installations
- 2009 Western Roofing Expo • Western States Roofing Contractor Assoc., Reno, NV (5.0 hrs)
 - Tile Roofing: 2009 Manual Updates
 - Coating Systems: Where & How They're Being Used
 - Leadership in Energy and Environmental Design
 - International Building Codes Updates (ICBO)
- Windows & Flashing: Specifying, Installing & Flashing Windows (8.0 hrs), RCI SOCAL Chapter, Long Beach, CA,
 - Basic Terminology
 - Window Design Criteria
 - Window Types and Materials
 - Store Front Window Flashing Mock-up Test Results
 - Sealants and Sealant Joint Design
 - Laboratory and Field Testing
 - Window Installation and Flashings
 - Glass and Glass Insulation
- RICOWI Seminar "Spring Seminar", Dallas, TX (6.0 hours)
 - The Myth of Sisyphus: A Roadmap to Greening Our Buildings
 - Hurricane Ike Steep Slope Roofing Investigations
 - Hail Fundamentals and Detection Methodologies
 - Hurricane Ike Low Slope Roofing Investigations
 - ASCE-07 Update
 - 2009 Hail Investigation Event
- RCI Inc. International Convention & Trade Show, Dallas, TX (12.0 hrs)
 - From Study to Implementation – Masonry Repair and Window Replacement
 - Sustainable Buildings – Addressing Long term building Envelope Durability
 - Building Science's Influence over the Building Codes
 - Fundamentals of Below-Grade Waterproofing
 - Evaluating Storm Damage to flat-Roof Assemblies
 - Sealants – the Common Denominator
 - Building beyond the Code: The Economic Benefits
 - Fluid-Applied Rubberized Asphalt membranes
- RCI International Region IV 9th Annual Hawaii Winter Workshop, Honolulu, HI (12 hrs)
 - Non-Destructive Test Methods of Testing Roofing Membranes Current Tools and Methodologies
 - Roof Moisture Surveys - How different methods compare in terms of identifying infiltration pathways
 - Roof Top Photovoltaic Panel Systems: Technical, Economical, and Roof System Warranty Considerations
 - Metal Roofing: Common issues & problems
 - Liquid Applied Roof System
 - Avoiding Common Curtain Wall Problems
 - Ventilation of Low-Slope Roof Assemblies
 - Adhered Stone Veneer
 - Weather Barriers: Do We Need Them?

2008 Education/Training:

- WESTCON: "Windows & Flashing: Specifying, Installing & Flashing Windows of All Types, Berkeley, CA, (8.0 hrs)
 - Basic Terminology
 - Window Design Criteria
 - Window Types and Materials
 - Store Front Window Flashing Mock-up Test Results
 - Sealants and Sealant Joint Design
 - Laboratory and Field Testing
 - Window Installation and Flashings
 - Glass and Glass Insulation
- FEWA: "Windows & Flashing – Failure and Litigation, Berkeley, CA, (8.0 hrs)
 - Preparing Trial Quality Evidence and Presentations
 - Fenestration and Forensics Findings
 - Legal Aspects of Plaintiff's and Defense's Window Case
- Codes Seminar (5.0 hrs), SoCal Chapter of RCI, Long Beach, CA
 - 2009 California Energy Code Update: Residential and Commercial Roofing
 - LEED for Roofing Projects
- Tile Specialist Certificate Program, (8.0 hrs), the Tile Roofing Institute Las Vegas, NV
- 2008 Western Roofing Expo • Western States Roofing Contractor Assoc., Las Vegas, NV (2.25 hrs)
 - Residential Ventilation Concepts, System Designs & Troubleshooting Techniques
 - Execution of a Waterproofing Project (Step-by-Step)
- RCI International • Region IV Summer Workshop, Las Vegas, NV (5.5 hrs)
 - Polycarbon-Polycarbonate Waterproofing Technology
 - 2008 Building Codes Changes You Need to Know
 - Energy Efficient Designs with Single-Ply Roof Membranes
 - Analysis of a Roof Failure
 - Integrating Thin-Film Photovoltaic's onto Building Envelope Surfaces
- Building Wall Design & Construction, Pete Fowler Construction Services, Glendale, CA (2.0 hrs)
- Plaza and Deck Waterproofing Seminar RCI SOCAL Chapter, Long Beach, CA (8.0 hrs)
 - History
 - Material Types
 - Codes and Standards
 - Plaza Deck Waterproofing
 - Framed Balconies
 - Traffic Bearing Waterproofing
 - Decisions: How to Decide Which System to Use
- Joe Lstibrek's Building Envelope Design & Energy Efficiency Seminar, CREIA, Downey, CA (7.5 hours)
- Polycarbon-Polycarbonate Waterproofing Design, RCI SOCAL Chapter: Long Beach, CA, (7.0 hrs)
- Roof Consultant Institute 23th International Convention & Trade Show, Phoenix, AZ (6.0 hrs)
 - Energy-Efficient Roof Designs with Single-Ply Roofing Membranes
 - Below-Grade Waterproofing: Failures and Solutions
 - Building Envelope Condition Assessment and Commissioning
 - Rooftop Tapered Design to Optimize Drainage Potential and Meet Code Requirements
- RICOWI Seminar "Spring Seminar", Phoenix, AZ (6.0 hours)
 - CA Wildland-Urban Interface Building Code Update: The Ember Hurricane- What Can We Do?
 - Cool Roof Rating Council: General Overview and New Endeavors
 - CA Title 24.6 CA Energy Code Update: Low Slope Roofing
 - CA Title 24.6 CA Energy Code Update: Steep Slope Roofing
 - 2008 RICOWI Hail Investigation Event
 - Fire and Wind Performance of Garden Roofs
 - What do Climatologists Know about Hail
 - Above Sheathing Ventilation
- California Building Code Update: Transition to the IBC, RCI SOCAL Chapter, Long Beach, CA, (5.0 hrs)
 - Roofing: Chapter 15, Ventilation: Chapter 12
 - Waterproofing for Decks, Patios and Below Grade Applications
 - Exterior Wall Cladding
- RCI International Region IV 8th Annual Hawaii Winter Workshop, Honolulu, HI (12 hrs)
 - Spray Polyurethane Foam Systems - Good and Not So Good Case Study's
 - Below Grade waterproofing-intro to basic types of systems, common failure modes & design considerations.
 - Building Envelope Monitoring: Stucco Cracking, Sloped Metal Panel Temperatures, & Condensation Potential
 - Monitoring the Performance of a Vapour Diffusion Port in a Non-Vented Roof Attic
 - Restoration of Wood Framed Envelopes in the British Columbia Rainforest
 - Traffic Deck Fluid Applied Membranes - Systems and Detailing
 - Plaza Deck Waterproofing - Case Study of a Cold Applied System
 - Elastomeric Wall Coatings... Theory, Uses & Applications
 - Roof Adhesives
 - Green Roofing
 - Blind Side Waterproofing

2007 Education/Training:

- WESTCON: Plaza and Deck Waterproofing Seminar, Berkeley, CA (8.0 Hours)
 - History
 - Material Types
 - Codes and Standards
 - Plaza Deck Waterproofing
 - Framed Balconies
 - Traffic Bearing Waterproofing
 - Decisions: How to Decide Which System to Use
 - Traffic Bearing Waterproofing
- 2007 Western Roofing Expo • Western States Roofing Contractor Assoc., Las Vegas, NV (3.25 hrs)
 - Technology Advances in Thermoplastic Details
 - TPO 5 year Update
 - Roofing Litigation Case Study
- RCI International • Region IV Summer Workshop, Las Vegas, NV (6.5 hrs)
 - Studies & Testing: Composition Shingles, Wind Resistance & Seal Tab Technology
 - Best Practices for Design, Installation & Maintenance for Green Roofing
 - To Roof or Not to Roof Over Concrete Decks
 - Use of Panelized Wood Decks & Radiant Barriers
 - Retrofitting with Lightweight Concrete
 - Factory Mutual (FM) Updates
- STUCCO: "An in Depth Look at a Common Assembly, RCI SOCAL Chapter: Downey, CA (8.0 hours)
 - Performance and application of weather resistive barriers and self adhered flashings
 - Flashings for parapets, beams, pipes, etc. and counter flashing for roofing
 - Stucco materials and mixes and what to specify for different needs
 - Flashing for windows (nail-on fin and store front) and doors
 - Control Joint and reveal performance and installation
 - Stucco finishes, elastomeric and fabric reinforced finishes
 - Expectations of stucco and where not to use it
 - Drainage wall & cavity wall performance differences
 - Stiffness and stability needed for structural walls
 - Lath types and attachment
 - Wood and gypsum sheathing requirements
 - Stucco application and curing
- Roof Consultant Institute 22th International Convention & Trade Show, Orlando, FL (9.0 hrs)
 - Back to the Future: Improving the Thermal Envelope R-values of ASHRAE 90.1
 - Consultants Role in Reroofing – Remembering Energy Efficiency
 - A Systems Approach to Zero Lot Line Waterproofing
 - Fluid-Applied Roofing & Waterproofing Membranes
 - Drainage Design Requirements and Applications
 - Case Study: When Air Barrier Meets Roof
- RICOWI Seminar Spring Seminar, Orlando, FL (7.0 hours)
 - FileMaker Pro Roof Damage Field Data Entry Form
 - Hail Investigation Program, Protocols and Logistics
 - Katrina Report: How to Use the Data
 - Florida Building Code Update
 - Determining Hail Size
 - Photo Documentation
- RCI International Region IV 7th Annual Hawaii Winter Workshop, Honolulu, HI (12 hrs)
 - Spray Polyurethane Foam Systems - Good and Not So Good Case Study's
 - EFIS Update: Improvements in Design & Installation -Are things getting Better
 - Repair of Concrete High-Rise Buildings in the Wet West Coast Climates
 - ASTM E2128 "Standard Guide for Evaluating Water Leakage of Building Walls"
 - Preparing Enforceable Roofing and Waterproofing Specifications
 - Composition Shingles: Wind Resistance & Seal Tab Technology
 - Single-Ply Roof Systems: Self-Adhering, PVC, EPDM & TPO
 - Wall Sealants: Problems and Solutions
 - Roof Coatings: Materials, Uses and Energy Issues
 - Design of Exterior Wall Assemblies
 - To Roof or Not to Roof over Concrete Decks

2006 Education/Training:

- WESTCON •STUCCO: "An in Depth Look at a Common Assembly", Berkeley, CA (8.0 hours)
 - Performance and application of weather resistive barriers and self adhered flashings
 - Flashings for parapets, beams, pipes, etc. and counter flashing for roofing
 - Stucco materials and mixes and what to specify for different needs
 - Flashing for windows (nail-on fin and store front) and doors
 - Control Joint and reveal performance and installation
 - Stucco finishes, elastomeric and fabric reinforced finishes
 - Expectations of stucco and where not to use it
 - Drainage wall & cavity wall performance differences
 - Stiffness and stability needed for structural walls
 - Lath types and attachment
 - Wood and gypsum sheathing requirements
 - Stucco application and curing
- Inspecting Steep Slope Roofs, RCI SOCAL Chapter Seminar, Downey, CA (3.5 hrs)
 - Inspecting Stone-Coated Steel Roofing and Architectural Metal Roofs
 - Inspecting Composition Shingle Roof Systems
 - Inspecting Cedar Shingle and Shake Roofs
 - Inspecting Concrete and Clay Tile Roofs
 - Inspecting Slate Roofs

2006 Education/Training (continued):

- Haag Engineering Roof Damage Assessment Seminar, Atlanta, GA (10.0 hrs)
 - Composition and Wood Roofs Damage Assessment • Commercial Roofs Damage Assessment
- 2006 Western Roofing Expo • Western States Roofing Contractor Assoc., Las Vegas, NV (4.0 hrs)
 - TPO Heat Welding Tips from the Pros
 - Roofing Technology from Inspections to Proposals
 - Let's Talk Synthetic Roof Products: History of Failures, Future Considerations
- RCI International • Region IV Summer Workshop, Las Vegas, NV (6.5 hrs)
 - Legal Issues in the Roofing and Building Envelope Industry
 - Treated Wood, Roofing, Energy and the Environment
 - California Energy Code Roofing Updates • Golf Coast Hurricane Observations
- Installer Certificate Program for Moderate Climate, the Tile Roofing Institute, Ontario, CA (7.0 hrs)
- ASTM E-2266 "Standard Guide for Design and Construction of Low-Rise Frame Building Wall Systems to Resist Water Intrusion", RCI SOCAL Chapter, Downey, CA (7.5 hrs)
 - Document Scope, Referenced Documents, Terminology, Summary and Specific Use
 - General Design Principles, Design Practices and General Guidelines
 - Plaza Decks & Stairs with an Integral Wearing Surface Membrane
 - Drainage Walls: Weather Resistive Barriers and Design & Construction
 - Drainage Wall Cladding: Vinyl and Wood Fiber Cement Siding
 - Drainage Wall Cladding: Wood and Wood Derived Products
 - Cavity Drainage Walls: Cement Plaster and Masonry
 - Plaza Decks & Stairs with Protected Membrane • Special Wall Considerations
 - Doors, Windows and Similar Wall Penetrations • Exterior Sealant Joints
 - Drainage Wall Cladding: Portland Cement Plaster • Wood Decks, Stairs and Exposed Framing
- Building Envelope Design & Construction (2.0 hrs), Pete Fowler Construction Services, San Clemente, CA
- Roof Consultant Institute 21st International Convention & Trade Show, Phoenix, AZ (6.0 hrs)
 - Condensation in Metal Roofing: Design and Installation Resolutions
 - Condensation Control Mechanism in Exterior Wall Assemblies
 - Performance Evaluation of Unexposed & Field-Exposed Thermoplastic Polyolefin Membranes
 - Cool Roofs & Code in California • Breathable Roofing Underlayments
- RCI International Auxiliary Seminar Phoenix, AZ (6.0 hrs)
 - Exterior Insulation and Finish systems (EIFS): Past Lessons and Current Issues
- RICOWI, Inc. Spring Seminar, Phoenix, AZ (6.5 hours)
 - The Wind Investigator – How to Approximate Wind Velocities at Roof Level
 - Peak Demand Energy Analysis – Roof Reflectivity and Insulation R-Value
 - PV Systems are warranted for 25 Years: Can you Design a Roof to Take It?
 - Fasteners
 - Katrina Low-Slope Hurricane Investigations • Katrina Steep-Slope Hurricane Investigations
 - Oklahoma City Hail Storm Findings • New IBC Hail Risk Map
- NRCA Convention, Las Vegas, NV Inc. (7.50 hours)
 - Asphalt Roofing Manufacturers Open Forum: Discussions on Low Slope Roofing Issues.
 - Welding of Thermoplastic Membranes Under Various Conditions.
 - Technical & Design Observations from the Field of Experts.
 - Roofing Industry Technology Issues. • How Do Roofs Wear Out.
- RCI International Region IV 6th Annual Hawaii Winter Workshop, Honolulu, HI (12 hrs)
 - Introduction to ASTM E-2266-04: Standard Guide for Design & Construction of Low-Rise Frame Building Wall Systems to Resist Water Intrusion.
 - Curtain Wall Systems: A Practical Approach to Evaluation and Repair.
 - Masonry Walls, Common Problems and Possible Solutions.
 - Window/Door Installation: ASTM E 2112 and Installation Masters™ method of Installing doors and Windows.
 - Metal Roofs: Products, Roof Design, Waterproofing. Presented by Robert Stanford, RRO
 - 2004 Hurricanes - How Air Infiltration and Component Deterioration Contributed to Roof Covering Damage.
 - The Wind Investigator - How to Adjust Wind Velocities for Exposure, Height, & Averaging Time.
 - Sustainability: Roofs can last in excess of 30 years, but most don't.
 - Investigation after Hurricane Ivan: Pensacola Justice Center.
 - CNRCC Guarded Hot Box Energy Efficiency of Roof Assembly Test

2005 Education/Training:

- Cold Roofing and Deck Waterproofing Program, RCI Southern California Chapter, Downey, CA (7.0 hours)
 - The A, B, C's of Cold Applied Roofing: History, Review, Analysis, Suitability & Maintainability of Cold Applied Roofing for Various Conditions and Substrates.
 - Residential Walkways & Decks: Review, Analysis and Identification of deck & Walkway Waterproofing Systems
 - Water Testing and Forensic Investigation Protocols for Typical and Complex Deck and Walkway Projects.
 - Deck & Walkway Case Studies: Improper Design, Installation & Material Selection
 - Live demonstrations of Cold App Materials • Cold Applied Roofing Case Studies
- RCI International • Region 6 Summer Workshop: Metal Roofing, San Francisco (7.25 hrs)
 - Introduction to metal Roofing Products: Past, Present and Future
 - Stone Coated Steel roof Systems: History, Styles, Manufacturing and Installation
 - Standing Seam Roof Systems: History, Styles, Manufacturing and Installation
 - Installation of Metal Roof Systems: what Can Go Wrong – What to Watch For
 - Demonstrations of Standing Seam Panel Production • Insulations, Underlayments and Special Finishes
- Western States Roofing Contractor Assoc. 29th Annual Convention, Las Vegas, NV (4.5 hrs)
 - The Top 9 Most Common Metal Roofing Installation Mistakes
 - Roof Tile Installation for Moderate Climate Regions
 - 7 Things Contractors Always Ask the Manufacturer Technical Representative
- Air Barrier technology (3.0 hrs), Air Barrier Association of America, Downey, CA
 - Mold and Mildew • Building Durability • Energy Efficiency
- ASTM E-2266 "Standard Guide for Design and Construction of Low-Rise Frame Building Wall Systems to Resist Water Intrusion", WESTCON • Berkley, CA (7.5 hours)
 - Document Scope, Referenced Documents, Terminology, Summary and Specific Use
 - General Design Principles, Design Practices and General Guidelines
 - Plaza Decks & Stairs with an Integral Wearing Surface Membrane
 - Drainage Walls: Weather Resistive Barriers and Design & Construction
 - Drainage Wall Cladding: Vinyl and Wood Fiber Cement Siding
 - Drainage Wall Cladding: Wood and Wood Derived Products
 - Plaza Decks & Stairs with Protected Membrane • Doors, Windows and Similar Wall Penetrations
 - Drainage Wall Cladding: Portland Cement Plaster • Wood Decks, Stairs and Exposed Framing
 - Cavity Drainage Walls: Cement Plaster and Masonry • Exterior Sealant Joints
 - Special Wall Considerations
- RCI International • Region 6 Summer Workshop, Las Vegas, NV (6.5 hrs)
 - Cool Roof Coatings: What Makes a High Performance Coating/Installation Requirements
 - Contractor / Consultant / Manufacturer Relations Panel
 - Hurricane Ivan: Roof Wind Damage Investigations • Steep Slope Roof Ventilation
- Roof Consultant Institute 20th International Convention & Trade Show, Miami,, FL (9.0 hrs)
 - Tile Roof Systems: Analysis and Inspection Techniques for Roof Consultants
 - Field Investigation and Laboratory Testing of Exposed Polyvinyl Chloride Roof Systems
 - How Do Roofs Wear Out
 - Issues to Consider Regarding Self-Adhering TPO Single-Ply Membranes
 - Assessing the Field Performance of PVC Roof membranes After 34 years of Exposure
 - Tile Roof Systems: Analysis & Inspection Techniques for Roof Consultants
- 2004 Hurricane Season (7.0 hrs), RICOWI Seminar, Miami, FL
 - Steep-Slope Roofing: Tile Roof Investigations
 - Steep-Slope Roofing: Metal, Wood and Composition Roof Investigations
 - Low-Slope Roofing: Built-up Roofing and Modified Bitumen Roofing
 - Low-Slope Roofing: Roof Edges and Insulation Attachment Failures
 - Performance of Spray Polyurethane Foam Roofs • Oklahoma City Hail Storm
- RCI International Region Six 5th Annual Hawaii Winter Workshop, Honolulu, HI (12 hours)
 - Practical Steps in Preparing to take the RCI RRC Examination
 - Waterproofing Plaza Decks and Roof Gardens • Waterproofing Materials
 - Air Barriers: Design Criteria and Materials • Waterproofing Details
 - Waterproofing Retrofit: Case Studies • Air Barriers: Case Studies
 - Steep-Slope Roofing Materials: Surveys & Analysis • Waterproofing Design Considerations
 - Technology & Performance of Composition Shingles • TPO Roof Membranes

2004 Education/Training:

- 30 hour Basic Mediation Course (30.0 hours), Los Angeles Bar Association, Santa Monica, CA
- RCI International • Region 6 Summer Workshop, Las Vegas, NV (6 hrs)
 - Mock Trial: Mold Litigation
 - Contractor/Consultant Relations
 - TPO Membranes: What Makes a Good TPO Membrane
 - What Makes a Good Shingle
 - Sheet Metal Details
- Western States RCA 28th Annual Convention & Trade Show, Las Vegas, NV (4.5 hrs)
 - WSRCA TPO Project Study: 3-year Results
 - GAF Roofing 2004: Low Sloped Roofs
 - Title 24: It's Impact on Roofing in 2005
- Roof Consultant Institute 19th International Convention & Trade Show, Reno, NV (7.0 hrs)
 - EPDM Roof Membranes: Long-term Performance Revisited
 - Long-term Reflective Performance of Roof Membranes
 - Overview of New Wind Design Guide for Mechanically Attached Roof Systems
 - Slate Roof System Inspection and Reporting Techniques
 - Dynamic Wind Evaluation of Architectural Metal Roofing Systems
 - New Wind Resistance Test Standards for Shingles
- RICOWI Seminar "Hail Investigation Training Workshop", Reno, Nevada (7.0 hours)
 - Mold Predication: What Building Science Can and Cannot Do For You
 - Cool Colors of Roofing
 - Real Hail v. "Man-Made" Hail
 - Cold Weather Application of Clay & Concrete Tile
 - Cedar Shake & Shingle Application Details
 - CRRC & the CA Energy Code Requirements
 - Texas Tech University: Wind Research Update
- NRCA's 117th Annual Convention & Exhibit, San Diego, California (5.0 hrs)
 - Roof System Performance Criteria
 - Spray Foam Research, Phase II
 - Moisture & Mold in the Building Envelope
 - Understanding the Construction Process
- RCI International Region Six 4th Annual Hawaii Winter Workshop, Honolulu, HI (12 hours)
 - Re-roofing & Re-Waterproofing Projects – How to Make Well-Reasoned System Selections
 - Hawaii Energy Code & Its Effect on Roof System Selection
 - Self-Adhering Roof Systems – the Good, the Bad & the Ugly
 - Building Envelope Design and Its Effect on Mold Contamination
 - Designing Sustainable Low-Sloped Roof Systems for the Long Term
 - Stucco Leak Investigations – Lessons Learned the Hard Way
 - The EPDM Phenomenon: A Restorable Roof System
 - Curtain Walls: Design Principals
 - Cladding Options for the Tropical Environment
 - Asphalt Today

2003 Education/Training:

- Roof Consultants Institute (RCI) • Region 6 Fall Workshop, Los Angeles, CA (6.5 hours)
 - 2005 California Energy Code Daylighting Standards in Roof Systems
 - Infrared Survey of Metal Buildings: Some Practical Applications
 - Exterior Envelope Weatherproofing Problem Solving Prior to Construction
 - Update on 2005 CA Energy Code & Its Impact on the Roofing Industry
 - California Proposition 65 Lawsuit Update
 - Roof Assembly R-Value Testing: It is Not the Sum of the Components
- Firestone Building Products • Roofing Seminar, Ontario, CA (5.0 hours)
 - Insulation – We Switched Blowing Agent, Now New Facers
 - EPDM – Cost Effectiveness with Long-Term Performance
 - Trends – C or E Deck and What is the difference
 - Environmental Issues – LEED
- Roof Consultants Institute (RCI) • Building Envelope Symposium, Dallas, TX (11.5 hours)
 - Moisture Climate Load Calculation for Building Envelope
 - Wind Load Calculation ASCE and FM Procedures
 - Wind Failure Investigation of Roof Assemblies
 - Moisture Condensation for Roofing Theory
 - Moisture Design – Case Studies and Examples
 - Moisture Failure Investigation of Roofing & Claddings
 - Wind and Wind Effects – Theory
 - Moisture Control Requirements in Codes
 - Panel Discussion on Wind
 - Case Studies on Cladding Wind Loads
 - Lessons Learned from Wind Cladding Failures
- Avoiding & Resolving Construction Claims, Los Angeles County Bar Assoc., Malibu, CA (7 hrs)
 - Conflict Prevention and Avoidance in Construction Contract Mgmt.
 - Pitfalls & Protections of Insurance Coverage for Industry Professionals
 - ADR Advocacy: Preparing and Presenting Your Case
 - Insurance Code 2071 Appraisals & Dispute Review Boards
 - ADR Design for Construction Projects
 - Hot Topics in Construction Law

2003 Education/Training (Continued):

- Roof Consultants Institute (RCI) "Rooftop Safety for Consultants", San Diego, CA (6 hours)
 - Overview of OSHA, Subpart C & General Duty Clause
 - Safety Programs for the Consultant or Owner
 - Fall Protection – Crucial Stuff for Rooftops
 - Fall Protection – Hazard Communications
 - Electrical, Personal Protective Equipment
 - Stairways and Ladders, Fire Protection
- RCI International • Region 6 Summer Workshop, Las Vegas, NV (6 hrs)
 - Roof Moisture Surveys - How different methods compare in terms of identifying infiltration pathways
 - Mold - Case Studies, It's not always the Roofers Fault
 - Mock Trial: Moisture Related Damage Case
 - Roof Repair Methodology
- Preventing & Solving Moisture-Related Problems in Buildings (12 hrs), UW College of Engineering, Madison, WI
 - Fundamentals of Moisture in Buildings: Myths and Reality
 - Roof Design/Construction to Avoid Moisture-Related Problems
 - Preventing & Solving Moisture Problems in Walls, Foundations & Slabs
 - The Interaction of Mechanical Systems with the Building Envelope
 - Fundamentals of Moisture in Roofs
 - Effects of Mold on Human Health
- Property Fraud Seminar, Southern California Chapter IASIU, Los Angeles, CA (7 hours)
 - Dynamic Wind Uplift Performance of Thermoplastic Roofing Systems
 - Contractors Instructions: A Forensics Engineering and Legal Practice
 - Manufacturer Standard Details: Reinforcing Accepted Standards as Common Knowledge
 - How to Conduct System Inspections & Assessments
 - Mold - 1st & 3rd party, Hygienist & Contractor Issues
 - Achieving Working and Effective Air Barriers
 - Computer Forensic Investigations/Data Recovery
 - Roof and Wind Damage Claims
 - The Design Process, the 75% Rule
- Roof Consultant Institute 18th International Convention & Trade Show, Tampa, FL (8.0 hrs)
 - Manufacturer Standard Details: Reinforcing Accepted Standards as Common Knowledge
 - Contractors Instructions: A Forensics Engineering Legal Practice
 - How to Conduct System Inspections and Assessments
 - Dynamic Wind Uplift Performance of TPO Roofing Systems
 - Achieving Working and Effective Air Barriers
 - The Design Process, the 75% Rule
- Hail Investigation Training Workshop (4.5 hrs), RICOWI, Tampa, FL
 - General Program of Inspection
 - Determining Hail Effects
 - Data Sheets & Roof Condition Reports
 - Communication & Report Production
 - Determining Hail Size
 - Equipment and Supplies
 - Sample Collection
 - Photo Documentation
- RCI International Region Six 3rd Annual Hawaii Winter Workshop, Honolulu, HI (12 hours)
 - Wind Pressure Design & Other Considerations for High-Rise Roofing Projects: Case Studies
 - Panelized Wood Decks & Radiant Barriers -- Condensation Potential
 - Alternative Provisions of Consulting Agreements & Insurance Contracts
 - Consultant Liabilities, What Lurks Behind the Door -- Case Reviews
 - Mold-Based Litigation: The Current State of the Art & How the Roofing Industry is Impacted
 - Property Condition Assessments
 - Reroofing and Building Code Compliance
 - Tile Roofs – Essentials and Improvements
 - EIFS: Current Issues & Past Lessons

2002 Education/Training:

- Roofing Industry Committee on Weather Issues, Inc. Fall Seminar, San Diego, CA (7.0 hrs)
 - Condensation – The Sometimes Overlooked Source of Moisture
 - Metal Shingles/Panels and Extreme Climatic Conditions
 - Roof Color & Its Impact on the Energy Efficiency of Commercial Buildings
 - Weathering Properties of Concrete and Clay Tile
 - Accreditation & Product Evaluation under the ICC
 - Field Evaluation of a Rooftop Garden
 - CA Title 24 – Impact of Upcoming Changes
- Roof Consultants Institute (RCI) • Region 6 Summer Workshop Las Vegas, NV (6.5 hrs)
 - Steep-Slope Roof Ventilation Technical Principals/Tips for the Simple to Complex Projects
 - Reroofing and Building Code Compliance
 - Contractor/Consultant Relations
 - Roof Surveys and Analysis
- Roof Consultant Institute 17th International Convention, Galveston Island, TX (12.0 hrs)
 - Air Entrapment in Elastomeric Coating as Used in Sprayed Polyurethane Foam Coatings
 - Air Infiltration - The Enemy of Wind Resistance & Condensation Control
 - Enhancing Wind Performance of Roof Systems: The Consultants Role
 - What Roof Consultants Need to Know About Slate Roofs
 - Roofing Litigation - Hot Topics & Issues
 - Trouble Shooting Masonry Walls
 - Industry Report - Cool Roof Investigations
 - RTI/WSRCA Roof Tile Manual
 - Update on Green Roofs
 - Wind Events & Wind Warranties

2002 Education/Training (Continued):

- RCI International • 2nd Annual Region 6 Hawaii Winter Workshop, Honolulu, HI (12.5 hrs)
 - Full System Warranties & the Alternatives Available to the Roofing Specifier
 - Retrofitting w/Lightweight Insulating Concrete: Tips for Solving Design Challenges & Avoiding Problems
 - Wind Resistance and Condensation Control: Tips to Avoid Surprises
 - Mold: Public Enemy #1? Managing Microbial Mold Issues for Roofs & Buildings
 - Problems with Fiber Cement Roofing Materials in Warm, Moist Climates
 - Changes in the Mod-Bit Market - The move to cold applied system systems
 - Diagnostic Tools: Investigating the Building Envelope • Roof Coatings
 - Waterproofing: Repair of Buried Membranes • First-aid for Metal Roofs

2001 Education/Training:

- Roof Consultants Institute (RCI) • Region 6 Fall Workshop, Los Angeles, CA (6.0 hrs)
 - Title 24 Energy Codes and the CA Cool Roof Program
 - Tour of Henry Co. Manufacturing Facility • Tile Roof Fastener Dilemma
- High Performing SPF Roofs: Specification, Installation and Inspection (6.5 hrs), RCI Region 6 Fall Meeting, Mesa, AZ
- Fundamentals of SPF Covering Systems for the Independent Inspector (7.0 hrs.) SPFA, Mesa, AZ
- Roof Consultants Institute (RCI) • Region 6 Summer Meeting, San Francisco, CA (7.0 hrs)
 - Waterproofing Material Selection, Design & Analysis • Green Roofs 101: Intro to Green Roof Technology
 - Defending a Green Roof: Detailing the Roof System • Setting Standards: Incentives Drive the Market
 - Plant Selection and Maintenance • Case Studies: Thermoplastic Roof Systems
 - Landscape Design: An Illustrated Overview • Case Studies: Fluid-Applied Roof Systems
- Western States RCA 25th Annual Convention & Trade Show, Las Vegas, NV (4.0 hrs)
 - Always Use Protection...Contracts, Insurance and Indemnity"
 - Up on the Roofs of Mega Resorts • Roofing Substrate Issues
- The Roofing Industry Committee on Wind Issues Roofing Seminar, Baltimore, MD (7.0 hrs)
 - Simulated Hail Damage & Impact Resistance Test Procedures for Roof Coverings
 - Climatology of Large Hail in the United States and Protocol for Assessment of Hail-Damage
 - Weathering Properties of Wood Shakes and Shingles
 - Weathering Properties of Asphalt Shingles • Weathering Properties of Concrete & Clay Tile
- Roof Consultant Institute 16th International Convention, Baltimore, MD (6.0 hrs)
 - Air Entrapment in Elastomeric Coating as Used in Sprayed Polyurethane Foam Coatings
 - Green Roofs- the Last Urban Frontier for New Greenspace
 - Considerations for Cold Weather Roofing • Reducing Condensation in the Roofspace
- Roof Consultants Institute (RCI) • Region 6 Winter Meeting, Honolulu, HI (12.0 hrs)
 - Roof Wind Damage Investigation: How Roofs actually fail & Practical Tips to Avoid Damage
 - The New FM Data Sheets – How to Use a Recently Updated Design Tool
 - Elastomeric Coatings/Waterproof Membranes & Tools for Investigation and Analysis
 - Roofs Don't Leak - How To Avoid Leaks at Flashings & Other Non-Roof Related Conditions
 - Blue Green Algae: Effects on Fiber Cement Roofing • Plaza Decks: Preventable Waterproofing Nightmare
 - Pushing the Building Envelope...Below Grade • EIFS: Failure Analysis & Design Guidelines
 - Wind Design for Concrete and Clay Tile Roofs • Evaluating Fluid Applied Roofing

2000 Education/Training (Continued):

- Roof Consultants Institute (RCI) "Fundamentals of Roof Consulting" (24 hrs.), San Diego, CA
 - Roof Consulting Practice • Wind II, Fire II
 - Codes & Standards • Drainage, Moisture Detection
 - Low Slope Roofing • Thermal & Energy/Visual Surveys
 - Roof System Selection • Moisture
- Roof Consultants Institute (RCI) Region 6 Fall Meeting, San Diego, CA (7.0 hrs)
 - OSB in Roof Construction • Understanding FM Data Sheet
 - Understanding the UL Directory
- Industry Expert Program 2000 Training Course, (4.0 hrs.) Contractors State License Board, San Diego, CA
- Roof Consultants Institute (RCI) Region 6 Meeting, Los Angeles, California (6.5 hrs)
 - The Getty Museum Project- Waterproofing System Design and architects tour of facility
 - Update of Tile Roofing

2000 Education/Training (Continued):

- RCI International Region 6 Technical Seminar & Project Tour, San Rafael, CA (7.0 hrs)
 - “Frank Lloyd Wright - Marin Civic Center Recoating and Waterproofing”
 - Over Coming Specials Challenges Associated with Recoating a Historic Structure
 - Keys to Successful Fluid-Applied Waterproofing Systems
 - Avoiding Pit Falls in Elastomeric Wall Coating Systems
- FCAOC Forensic Consultants Association Orange County Workshop: “Experts in the Courtroom: What Works, and What Doesn’t”, Irvine, CA (7.0 hrs)
 - Verbal Communication
 - Non Verbal Communication
 - What to Wear and Why
 - Visual Aids/Visual Persuasion
- RCI 15th International Convention & Trade Show, Reno, Nevada (9.0 hrs)
 - Moisture Infiltration and Condensation in Building Envelopes
 - PMR Systems – A Problem Solver You May Be Overlooking
 - Modified Bitumen Technology
 - Roof Design by Weighted Evaluation
 - Mock Trial
- Waterproofing & Moisture Control Seminar for Construction Professionals (14.0 hrs) U of Wisconsin-Madison, WI
 - Below-grade facilities
 - Plaza decks
 - Slabs on ground
- RCI Roof Consultants Institute: Roof-top Quality Assurance (7.0 hrs) Los Angeles, CA

1999 Education/Training:

- WSRCA25th Annual Convention & Trade Show, Las Vegas, NV
 - Waterproofing Seminal (2.0 hrs)
 - Roof Ventilation Seminar (2.0 hrs)
- What You Must Know to Effectively Litigate (3.0 hrs), FCAOC Construction Defect Seminar, Santa Ana, CA
- Deposition Mine Field – Preparing for Deposition (7.0 hrs) FCAOC Seminar, Newport Beach, CA
- RCI Roof Consultants Institute 14th International Convention, Charlotte, NC (12.0 hrs)
 - Fire Down Below – Hazards of torch applied modified bitumen roof system
 - Contract Essentials for the Consulting Business
 - Artisan Demo – Slate
 - Consolidations in the Roofing Industry
 - Ethical & Contractual Issues
 - Cold Applied Bituminous Roofing
 - Mock Trial: Roof Litigation
 - Solving Roof Leaks with Fans
 - Artisan Demo – Wood Shakes
 - Asbestos and Roof Consulting
- NRCA’s 112th Annual Convention & Exhibit, Phoenix, AZ (4.0 hrs)
 - Roofing Contractor/Consultant Relations
 - Issues in Residential Roofing, ICBO, UBC
- All Day Technical Program (6.0 hrs), IRWC’S Annual Roofing & Waterproofing Symposium, Phoenix, AZ

1998 Education/Training:

- Chapter 15, 1997 UBC code review, proper application techniques, review of all types of roof coverings (12.0 hrs), Colorado Chapter, Construction Specifiers Institute, Denver, CO
- NRCA’s 111th Annual Convention & Exhibit, Las Vegas, NV
 - Building Codes: Provisions that Affect Roofing Professionals (3.0 hrs)
 - Technical Operations Committee Issues and Updates (1.5 hrs)

1997 Education/Training:

- Roof Consultants Institute (RCI): Building Envelope Symposium, San Diego, CA (12.0 hrs)
 - Roof Decks
 - Roof Membranes
 - Wind Design
 - Roof Coatings & Insulation
 - Tile Roofing
 - Pitfalls in Waterproofing
 - Flashing & Sheet Metal
 - Curtain Walls
 - Exterior Insulation and
 - Finishing Systems (EIFS)
 - Plaster & Stucco
- Specifications: Principles and Practices (8.0 hrs), The Construction Specifications Institute, Detroit, MI
- Western State Roofing Contractors Association Convention, Las Vegas, NV (5.0 hrs)
 - Contractor/Consultant: Bridging the Gap (Protocol, Specifications Differences and Conflict Resolutions)
 - Legal Session: Who Wins? (Recreation of a Re-Roofing Construction Project that was Resolved in Litigation)
 - The Asphalt Shingle: Charting the Progress: Review Results of the 20/25-Year Asphalt Shingle Test

1997 Education/Training (Continued):

- Roof Consultants Institute – National Convention, Anaheim, CA (5.0 hrs)
 - Preliminary Roofing Design
 - Tapered Layouts for Troublesome Conditions
 - Factory Mutual
- Advancement of Construction Technology (8.0 hrs), The Construction Specifications Institute, Detroit, MI

1996 Education/Training

- Design, Testing & Installation of Butler Metal Roof System (12.0 hrs), Butler Manufacturing Co., Grandview, MO
- Master Series Program – Cross-Examination of Expert Witnesses (7.0 hrs), LACBA, Los Angeles, CA
- Fume Recovery Systems (2.0 hrs) - Koppers Industries/National Tool, Cerritos, CA
- IRWC Roofing Symposium, San Diego, CA
 - Foam Insulation (1.5 hrs), IRWC Roofing Symposium, San Diego, CA
 - Acrylic Roof Coatings (1.5 hrs), IRWC Roofing Symposium, San Diego, CA
 - Waterproofing Details (1.5 hrs), IRWC Roofing Symposium, San Diego, CA
 - Waterproofing Membranes (1.5 hrs), IRWC Roofing Symposium, San Diego, CA
- Residential/Steep Roofing Issues (2.0 hrs), NRCA Convention, San Diego, CA

1995 Education/Training

- Roof Consultants Institute (RCI) Region VI Meeting, Anaheim, CA
 - How to Conduct a Successful Building Leak Investigation (4.0 hrs)
 - What Attorneys Expect from Consultants (2.0 hrs)
- Dex-O-Tex Installer Training (3.0 hrs), Dex-O-Tex Division of Crossfield Products, Rancho Dominguez, CA
- Modified Bituminous Roofing Systems (8.0 hrs), Roofing Industry Education Institute (RIEI), Las Vegas, NV
- Total Roof Management (8.0 hrs), Roofing Industry Education Institute (RIEI), Las Vegas, NV

1994 Education/Training

- Advanced Roof Consulting (24 hrs), Roof Consultants Institute (RCI), Phoenix, AZ
- Basic Roof Consulting (16 hrs), Roof Consultants Institute (RCI), Phoenix, AZ
- Roof Top Quality Assurance (16 hrs), Roofing Industry Education Institute (RIEI), Rockville, MD
- Preparing and Enforcing Specifications (8.0 hrs), Roofing Industry Education Institute (RIEI), San Francisco, CA
- Roof Consultants Institute (RCI) Region Annual Convention, San Antonio, TX
 - Tapered Roof Insulation (1.5 hrs)
 - Codes and Insurance (1.5 hrs)
- Roof Inspection, Diagnosis and Repair (16 hrs), Roofing Industry Education Institute (RIEI), Las Vegas, NV
- Roof Technology (24 hrs), Roofing Industry Education Institute (RIEI), Phoenix, AZ

1993 Education/Training

- Technology Forum – Hurricane Watch (6.0 hrs), Roof Consultants Institute (RCI) at the WSRCA, Las Vegas, NV

END OF CV FOR JOHN D. SHEPHERD