

CURRICULUM VITAE

CHRIS L. NELSON

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PROFESSIONAL EXPERIENCE

6/97-Present *Senior Consultant, Technical Roof Services, Inc., and Pacific Building Consultants, Inc., Concord, California*

9/90-6/97 *Consultant, Technical Roof Services, Inc., Pleasant Hill and Martinez, California*

Investigation of leakage situations (roofs, walls, windows, doors, plaza decks, etc., with increasing focus on leaks that others have not been able to resolve) and preparing reports and recommendations. Suggesting corrective solutions and preparation of detail drawings and specifications. Observing jobs in progress to report on compliance to specifications and provide solutions to on-site problems. Providing roof management condition surveys, assisting insurance companies with independent evaluations, and providing owners with informed opinions. Drafting, roof condition surveys, causation reports, code analysis, and litigation support.

10/88-9/90 *Senior Technical Representative, Technical Roof Services, Inc., Martinez, California*

Investigations of leakage situations with increasing focus on walls, plaza decks and weather-proofing, and preparing reports and recommendations. Observing jobs in progress to report on compliance with specifications.

1/87-9/88 *President, Weathertight Construction, Inc., Oakland, California*

Incorporated and expanded business, taking on progressively larger projects and specializing in quality weatherproofing with particular emphasis on solving complex flashing and component interface problems (ones that typically lead to leakage). Trained employees in various trades allowing a variety of trades to be handled in-house, increasing quality and control, eliminating the problem of one trade not understanding the requirements of the next. Reputation for excellence and thoroughness. Built business strictly by referrals.

6/77-12/86 *Owner, Chris Nelson Construction, Oakland, California*

Began business with a one-month advertisement in a local newspaper, attracting residential repair jobs. Built the business strictly on word-of-mouth referrals; taking on progressively complex projects. Evolved business to focus on weatherproofing and flashing. Evolved toward mostly commercial projects by 1983.

INDUSTRY AFFILIATIONS

The Institute of Roofing, Waterproofing and Building Envelope Professionals (RCI, Inc.)
Formerly Roof Consultants Institute (RCI)
International Code Council (ICC) & Formerly ICBO
International Concrete Repair Institute (ICRI)
Western Construction Consultant's Association (WESTCON);
currently President of Westcon Board of Directors and Chair of Annual Symposium.
Western States Roofing Contractor's Association (WSRCA)

PRESENTATIONS

- 2010 Repeated one-day symposium on "Stucco as a Weather Protection System" by 5 speakers, sponsored by the Southern California Chapter of RCI (The Institute of Roofing, Waterproofing and Building Envelope Professionals). Presented 3 parts of the symposium: "Summary, Terminology, and General Concepts", "Flashings", RCI/Westcon Mock-Up Water testing of Store Front Window Flashings in Stucco Walls". Edited the other presentations and added graphics.
- 2009 Presented "Flashing Block Frame Windows in Stucco Walls" at RCI annual Symposium on Building Envelope Technology in San Diego, California. The talk focused on a study, lead by Mr. Nelson, of the effectiveness of 10 different flashing concepts for transitioning between store front windows and stucco wall cladding/water resistive barriers.
- 2009 Repeated one-day symposium on windows by 4 speakers for the Southern California Chapter of RCI (The Institute of Roofing, Waterproofing and Building Envelope Professionals). Presented 5 parts of the symposium: "Summary and Technology", "Window Selection Guide", "Water tests", "Window installation based on ASTM E 2112-07" and "Storefront Window Flashings in Drainage Plane Stucco Walls Experimental Design Preliminary Test Results." Recruited speakers, edited presentations and added selected graphics.
- 2009 Presented "Photography In Forensic Investigations" at Westcon's March 2009 meeting in Alameda, California. The talk focused on the use of photography to document construction and component removal to communicate findings in a forensic investigation effectively.
- 2008 Presented "Deck and Below Grade Waterproofing & Wall Damproofing, 2007 California Building Code Transition from 2001 California Building Code" at RCI's annual Regional IV winter workshop in San Francisco, California. The talk focused on difference in waterproofing and damproofing requirements between the 2001 California Building Code and the 2007 California Building Code.
- 2008 Organized one-day symposium on windows by 7 speakers for Westcon's annual symposium in Berkeley, California. Presented 2 parts of the symposium: "Window installation based on ASTM E 2112-07" and "Storefront Window Flashings in Drainage Plane Stucco Walls Experimental Design Preliminary Test Results." Wrote outline of all presentations. Recruited speakers, edited presentations and added selected graphics. Organized, designed, helped construct and water test window mock-ups for the symposium. The talks focused on flashings for nail-on windows and wooden windows per ASTM E 2112, the results of recently completed testing of ten (10) different flashings between storefront windows and stucco wall assemblies, storefront window types and water management, water testing, window types and materials, energy considerations, etc.
- 2008 Repeated one-day symposium on "Deck Waterproofing" sponsored by the Southern California Chapter of RCI (The Institute of Roofing, Waterproofing and Building Envelope Professionals). Reviewed Plaza deck and planter waterproofing systems, concepts, membranes, flashings, protection, drainage, and surfacing. Reviewed new installations and some lessons learned on renovation projects.

PRESENTATIONS (continued)

- 2008 Presented a case study in Waterproofing Renovation at RCI's annual Region IV winter workshop in Honolulu, Hawaii. The talk focused on the challenges faced on a large waterproofing renovation project, membrane options, flashing solutions, watertesting, drain selection, resloping of concrete, protection, root barriers, and resolutions to some of the problems encountered.
- 2007 Presented Plaza Deck Waterproofing at Westcon's annual symposium. Reviewed Plaza deck and planter waterproofing systems, concepts, membranes, flashings, protection, drainage, and surfacing. Reviewed new installations and some lessons learned on renovation projects.
- 2007 Repeated one-day symposium on "Stucco as a Weather Protection System" by 6 speakers, sponsored by the Southern California Chapter of RCI (The Institute of Roofing, Waterproofing and Building Envelope Professionals). Presented four parts of the symposium: General Principles, Part B of Flashings, RCI/Westcon Mock-Up Watertesting, and Cavity Drainage Walls/ Rain Screens. Edited the other presentations and added graphics. Organized and helped repeat the watertesting on mock-up walls for the symposium.
- 2007 Presented "Exterior Joint Sealants" and "ASTM E2128 Standard Guide for Evaluating Water Leakage of Building Walls" as part of a two-day seminar for RCI.
- 2006 Organized one-day symposium on "Stucco as a Weather Protection System" by seven speakers, sponsored by Westcon. Presented four parts of the symposium: General Principles, Part B of Flashings, Westcon Mock-Up Watertesting, and Cavity Drainage Walls/ Rain Screens. Edited the other presentations and added graphics. Designed and helped construct mock-up examples for the symposium. Organized and helped watertest mock-up walls for the symposium.
- 2006 Presented program on "Eleven Things to Know about Stucco as a Weather Protection System" for the Golden Gate Chapter, American Society of Home Inspectors/The East Bay Chapter, California Real Estate Inspection Association.
- 2006 Presented program on "Wind Driven Rain Rated Louvers" for RCI.
- 2005-06 Organized one-day symposium for Westcon "ASTM E2266: Standard Guide for Design and Construction of Low-Rise Frame Building Wall Systems to Resist Water Intrusion" by 10 speakers for Westcon. Presented three parts of that program; "Stucco, Sealants, and Cavity Drainage Walls/Rain Screens." Edited most of the other presentations and added graphics. In May 2006, the program was repeated in Southern California for RCI.
- 2004 Presented program on stucco as a weather protection system, "Two Decades of Lessons Learned" for RCI.
- 2004 Presented program "Stucco: Lessons Learned" at Westcon Dinner Meeting.
- 2003 Organized one-day symposium on "Quality Control, Everyone's Goal, Whose Responsibility?" by 18 speakers, for Westcon. Presented water testing part of the symposium. Assembled or edited some of the other presentations.
- 2000 Presented part of a one-day symposium on "Defects in Frame Buildings – How Can the Construction Process be Improved?" for Westcon.
- 2000 Presented program for Westcon on Reroofing Marin Civic Center, a Frank Lloyd Wright building with a history of leakage.
- 2000 Presented program on "Watertesting Standards and Techniques for Confirming the Performance of (and Investigating Leaks in) Roofs, Walls, Windows, Louvers and Other Elements of Building Envelopes" for the University of California, Berkeley, Capital Projects Group.
- 1998 Presented program on "Demonstrative Evidence and the Effective Use of Exhibits in Construction Defect Trials" — for the Alameda County Bar Association (ACBA/MCLE).
- 1998 Presented program on "Use of Exhibits for Trial," featuring graphics and full-sized models for Montgomery Washington Tower to Westcon.

PRESENTATIONS (continued)

- 1995 Presented program on "Roofing" to Oakland Chapter of the AIA.
- 1993 Presented program on "Built-Up Roofing" for Saarman Construction.
- 1992 Presented program on "Roof Maintenance and Replacement" to USDA Forest Service.

SEMINARS and EDUCATION

- 6/10 Interpreting the SB 800 Bill and Functionality Standards As They Apply To Residential Construction, presented by Dave MacLellan - Westcon.
- 5/10 California Court of Appeals Says That Experts Can Be Sued By Parties Who Retain Them Based On Alleged 'Negligent' Testimony, presented by Lewis Soffer, Esq., Miller, Starr, Regalia - Westcon.
- 4/10 New Trends In Energy Codes, Wall Designs and Air Barrier Systems Presented by Alan Learned, DuPont Building Innovations - Westcon.
- 3/10 New Developments In Ventilation and Indoor Air Quality In Residential Buildings, Presented by Bud Offermann, PE, CIH Indoor Environmental Engineering - Westcon.
- 1/10 Roof Top Photovoltaic's, How to Save Money on Energy and Avoid Regretting It, presented by Philip D Dregger, DNG Group - Westcon.
- 10/09 Looking For Standards For Flanged Window Installation in Drainage Plane Systems, Presented by Myles F. Corcoran, Myles F. Corcoran Construction Consulting, Inc- Westcon.
- 9/09 Total Case Analysis of a Large Loss Fire, Presented by Glen D. Peterson, Fire Protection Engineer - Westcon.
- 6/09 Forensic Construction Accounting a.k.a. "Who Owes Who How Much Money? Presented by Stevem Podesta, The Owner's Advocate - Westcon.
- 5/09 Project Collaboration and Management: On Time, On Budget, Presented By: Hermann Novak, Founder and Principal, Bayridge Group, Inc. - Westcon.
- 4/09 Using Humidity/Temperature Loggers For Moisture Investigations Case Studies Presented by Lonnie Haughton, Richard Avelar & Associates DuPont - Westcon.
- 3/09 2009 RCI 24th International Convention and Trade Show: RCI Foundation Board of Directors Meeting; RICOWI Roofing Seminar; Sealants – The Common Denominator; Designing Building Envelopes: Tips, Tricks, and Lessons Learned; Sustainable Building – Addressing Long-Term Building Envelope Durability; From Study to implementation – Masonry Repair and Window Replacement; Building Science's Influence over the Building Codes; Rooftop Photovoltaics – How to Save Money on Energy and Avoid Spending it on Roof Repairs; End-of-Service-Life Recycling of Thermoplastic Roof Assemblies; Roof-Mounted Equipment for Façade and Window-Washing Maintenance; Learning Lab: Selected Topics on Masonry Wall Construction.
- 2/09 New Window Installation Techniques and Products, presented by DuPont - Westcon.
- 3/08 2007AIA/CES Conference: Sessions attended included: RCI Educational –Train the Trainer, Energy-Efficient Roof Designs with Single-Ply Roofing Membranes, Integrating Thin-Film Photovoltaics onto Building Envelope Surfaces, RCI: Roofing and Roof Consulting for 25 Years, Life-Cycle Assessment and the LEED® Green Building Rating System™, Building Envelope Condition Assessment and Commissioning, Wind – Roof Calculator on the Internet (Wind-RCI): Feel the Wind on Your Laptop, Are Ballasted Roof Systems Cool?, Wind Design – Not Just Another SPRI Wind/ES Presentation; Auxiliary Seminar: Commercial Waterproofing Systems Exposed.
- 5/07 Zero Lot Line Waterproofing - Westcon
- 4/07 Concrete Floors and Moisture Testing - Westcon
- 3/07 Thin Bonded Concrete Overlays - Westcon

SEMINARS and EDUCATION (continued)

- 3/07 RICOWI (Roof Industry Committee on Weather Issues, Inc.) Spring Training Workshop. RCI Convention workshops including; Cold Fluid-Applied Roofing and Waterproofing Membranes, Getting the Lead Out–Soldering with Lead-free Solders, How to Inspect a Rooftop for Safety, Zero Lot Line Waterproofing, Roof Drainage Design, Case Study when Air Barrier Meets Roof, Designing and Detailing to Avoid Moisture-Related Problems in the Building Envelope.
- 2/07 Vapor and Moisture Control In Buildings - Westcon
- 1/07 RCI two-day symposium on EIFS Update: Improvements in Design and Installation, Design of Exterior Wall Assemblies, ASTM E2128 “Standard Guide for Evaluating Water Leakage of Building Walls; Exterior Joint Sealants; Repair of Concrete High-Rise Buildings in the Wet West Coast Climate; Preparing Enforceable Roofing and Waterproofing Specifications; Composition Shingles: Wind Resistance and Seal Tab Technology; Roof Coatings: Materials, Uses and Energy Issues; Single Ply Roofing Systems: Panel Discussion and Presentations on PVC, TPO, EPDM and Self-Adhering Roof Membranes; EPDM Membrane Roof Systems; PVC Membrane Roof Systems; and TPO Membrane Roof Systems.
- 1/07 Structural Leveling and Concrete Lifting - Westcon
- 10/06 Protected Membrane Assembly, a Solution to an Unusual Roofing Challenge - Westcon
- 9/06 Shower and Bathtub Walls: Sources of Leaks - Westcon
- 5/06 Cool Roofs and Code in California - Westcon
- 4/06 EIFS Wall Inspection, Specifications, and Repair - Westcon
- 3/06 Infrared Thermography and Its Use in Construction Defect Investigations - Westcon
- 1/06 Weather Information for the Construction Consultant - Westcon
- 10/05 New Building Enclosure Approaches – Cold Climate Research and Energy Issues - Westcon
- 9/05 New ASHRAE Ventilation and Thermal Comfort Standards – Recent Project Experience Implementing IAQ Testing and Commissioning To Achieve Leed IEQ
- 6/05 Proposed Addition to the California Building Code - Making Homes Safer from Wildfire - Westcon
- 5/05 Current Construction Law Issues - Westcon
- 4/05 A New Tool for Organizing Investigations - Westcon
- 3/05 Computer Security and Practical Tips - Westcon
- 2/05 Hurricane Damage Investigations - Westcon
- 9/04 Reconstruction of TWA Flight 800: A Tale of Five Million Not-So-Easy Pieces - Westcon
- 6/04 Construction Defect Litigation v. National Electrical Code - Westcon
- 5/04 Keys to a Successful Mega-Residential Re-Roof - Westcon
- 4/04 Re-Roofing and Re-Waterproofing Projects - How to Make Well Reasoned System Selections - Westcon
- 3/04 Modern Technology for Monitoring Building Envelope Integrity - Westcon
- 2/04 Moisture Mitigation for the Installation of Floor Coverings – Westcon
- 10/03 Candlestick Park 1984-1989, The Unknown Secrets – Westcon
- 9/03 2003 Residential Construction Liability Crisis – Westcon
- 6/03 Trial Presentation Strategies Tools and Tips for Courtroom Presentations - Westcon
- 5/03 Common Building Errors Compromising Quality in Today's Construction – Westcon
- 4/03 Construction Defects and Mold Liability, and Risk Management Tactics for Contractors and Design Professionals - Westcon
- 3/03 Growth Requirements for Fungi - Westcon
- 2/03 Overview and Key Provisions of Senate Bill 800 - Westcon
- 10/02 Massive Stucco Failures on Two Public Buildings and Update on ASTM Building Envelope Standards - Westcon
- 6/02 Construction Fraud - Horror Stories – Westcon
- 5/02 Alternate Method of Wall Restoration without Removal of Exterior Finish – Westcon

SEMINARS and EDUCATION (continued)

- 2/02 Innovative Investigative Repair Proposals and Settlements or How Cooperation Resolved an Otherwise impossible Case - Westcon
- 1/02 Protecting Structures in Urban Wildland Interface Areas from Wildfires – Materials
- 10/01 Air Infiltration, the Enemy of Condensation Control and Underlayment Upgrades That Sometimes Aren't - Westcon
- 5/01 Mold, Mildew and Fungi - Westcon
- 2/01 AAS Case Discussion – Westcon
- 1/01 Responsibility – Liability - Westcon
- 11/00 Responsibility – Who-Me? - Westcon
- 6/00 Managing Moisture and Solving Water Intrusion Problems - Westcon
- 5/00 How to Get Paid - Westcon
- 4/00 The Other Side of the Table - Westcon
- 2/00 Plumbing–Problems and Solutions - Westcon
- 10/99 Insulation Materials and How They Relate To Habitable Structures for Building Enclosures - Westcon
- 9/99 Moisture Control Practices For Building Enclosures - Westcon
- 7/99 Standard Of Care – Continued Creativity versus Risk in the Design Process - Westcon
- 7/99 Avoiding Litigation Headaches, Attic Ventilation, Plaza Deck and Below-Grade Waterproofing- Western States Roofing Contractors Convention, Las Vegas, NV
- 6/99 Standard of Care - Westcon
- 5/99 As an Expert, How Do You Get Paid? - Westcon
- 4/99 Portland Cement Plaster - Westcon
- 3/99 Frame Building Waterproofing - Westley W. Page, PE, Waterproofing Consultant
- 3/99 EIFS - Westcon
- 4/98 "From a Different Perspective," a Forum for Case Study on the Pacific Park Plaza Overcladding Repair - Westcon
- 3/98 Pacific Park Plaza Overcladding Repair – Westcon
- 3/98 Condominium Acoustics - Westcon
- 3/96 Bituthene Waterproofing Presentation - W.R. Grace
- 3/96 Composition Shingles Seminar - Roof Consultant's Institute Convention, Reno, Nevada
- 5/95 DensDek and Styrofoam in Roofing and Waterproofing Presentation - Georgia Pacific and Dow
- 3/95 Rooftop Quality Assurance Program - Roof Consultant's Institute
- 3/95 Polyisocyanurate Roof Insulation Plant Tour – R-Max
- 3/95 Modified Bitumen Roofing Plant Tour - Polyglass, USA
- 7/94 Roofing Details, Details, Details Seminar - Roof Consultant's Institute
- 3/93 Building Envelope: Solutions to Problems Seminar - Simpson Gumpertz and Heger
- 6/92 PVC Roofing and Waterproofing Membranes Presentation - Sarnafil
- 4/92 Metal Roofing Seminar - Construction Specifications Institute, Richard C. Schroder, P.E.
- 5/91 Aluminum Shingles and Shakes Presentation - ALCO Aluminum
- 10/90 Single Ply and Modified Bituminous Roofing Systems Seminar – Roofing Industry Educational Institute - Westcon
- 5/90 Cementitious Shakes Presentation - American Cemwood
- 3/90 Wood Buildings Designing for Durability Seminar - Wood Building Research Center, University of California

SPECIAL INTEREST EDUCATION

- 8/90 Nottingham, England: Interviewed P.K. Newman, Director British Flat Roofing Council.
- 8/90 Greater London, England: Toured TARMAC Modified Bitumen Roofing Manufacturing Facility.
- 8/90 Greater London and Nottingham, England: Interviewed roofing contractors, observed application of modified bitumen and mastic asphalt roofing. Reviewed installation of various roof systems including: thatch, lead and tile.

HISTORICAL REGISTERED STRUCTURE PROJECTS

Bohemian Club, San Francisco, CA

Bohemian Club – Seven-story historic structure built in early 1930's.

Investigated leakage through masonry walls and wood windows. Coordinated investigation of brick terra cotta condition with structural engineer and masonry specialist. Conducted watertests and observed selected component removal. Prepared report. Prepared budgeting scope of work for contractor to price in order for owner to establish budgets, focus, and prioritize repairs. Prepared specifications and drawings in conjunction with structural engineer, masonry specialist, and architect.

Pankow Special Projects, LP, San Francisco, California

Rotunda Building Dome

Investigated leakage into the elliptical dome at the top of the Rotunda. Traced leakage to metal seams, sealant, and glazing. Investigated integrity of condensate weep system for glazing. Reviewed various repair concepts and prepared conceptual scopes to explore budgeting options.

Colonial Dames, San Francisco, California

Octagon House – Octagonal 2-1/2 story, wood-frame historic home/museum built in 1861.

Consulting, leak and roof condition investigation, preparation of drawings/specifications/bidding documents in coordination with extensive structural repairs/resheathing/reroofing; application monitoring.

Sentinel Cremation Societies, San Francisco, California

Columbarium – Four-story historic mausoleum built in 1896.

Consulting and leak investigation into concrete walls, wood windows, copper-framed skylight, elaborately decorated copper dome, built-in gutter and modified bitumen roof covering. Developed budgeting scope of work, repair scope, and conceptual drawings; application monitoring.

PROJECT SAMPLING

University of California, Berkeley (various facilities)

Recreational Sports Facility

Investigated extensive leakage through windows and stucco walls. Coordinated with structural engineer. Conducted watertests and observed selective component removal. Prepared budgeting scope of work with selected options for contractor to price. Presented report to University. Led design team in developing specifications and detailed drawings for reclading the walls. Attended meetings and made observations during reclading work.

PROJECT SAMPLING (continued)

University of California, Berkeley (various facilities) continued

Latimer Hall

Investigated leakage in various rooms of ninth story penthouse expansion of chemistry labs. Investigated stucco wall leaks, doors, roofs, and leaks through openings in conduit aggravated by negative interior air pressure. Conducted watertests and observed selected component removal. Prepared budgeting scope of work with selective options for contractor to price. Presented report to University.

Centralized Dining Hall

Consultations on a new four-story building. Reviews of architect's design development and construction drawings and specifications concerning low-sloped roofing, curved metal roofing, flashings for stucco walls, plaza deck waterproofing, and below-grade waterproofing. Provided isometric illustrations of flashing suggestions.

Zellerbach Hall

Investigated leakage through windows and concrete walls. Coordinated successful mock-up concepts for window repair. Researched removal of mineral scale deposits on windows and coordinated successful mock-up of various cleaners. Participated in drawing and specification preparation for window repair, flashing and waterproofing of walls. During construction phase, reviewed submittals, conducted weekly meetings and reviewed contractor's repair efforts.

Math Science Building

Leak and condition investigations into windows, doors, wood siding, flashing, HVAC units, and steep- and low-slope roofing. Co-prepared report of conditions with conceptual recommendations.

Faculty Club

Condition survey of stucco, shingle, board siding, tile roofing, and built-up roofing.

Temporary Surge Buildings

Window, door, skylight, louver, and wall watertesting, leak investigation and roof observations during construction. Review of skylight flashing concepts. Review of wall flashing concepts. Preparation of reports, punch lists and conceptual repair detail drawings.

Valley Life Sciences

Observed contractor's proposed window repair mock-up and provided peer review commentary.

Lawrence Hall of Science

Periodic monitoring of plaza waterproofing.

Evans Hall

Ten-story concrete tower. Led TRS team exploring and mapping spalls at all elevations.

University Village

Two- and three-story, wood-framed, residential student housing. Performed watertesting during construction to see if window, door, and wall assemblies leak. Prepared recommendations for repair including flashing details.

PROJECT SAMPLING (continued)

Encinal Properties

Lawrence Berkeley National Laboratories - Oakland Scientific Facility

A four-year-old, four-story, office and supercomputer facility. Investigated leakage through stucco wall cladding, doors, ductwork, elevator pit walls, and roof expansion joint to curtain wall juncture. Worked with owner's team (fireproofing consultant, structural engineer, curtain wall consultant, and water testing consultant) to devise repair for the roof expansion joint to curtain wall juncture that leaked into the supercomputer room that was waterproof, had appropriate movement capabilities, and was appropriately fire resistant. Attended meetings and made observations during repair work. Prepared PowerPoint presentation of leakage and conditions found for litigation and participated in mediation.

Tansev and Associates, San Francisco, California

Yerba Buena Lofts

A new 10-story, 200-unit, live/work residential building in San Francisco. Review and commentary on proposed and alternative concepts for wall weatherproofing, deck and foundation, wall waterproofing, roof coverings, various flashing and sealant concepts, and the architect's drawings. Attended meetings and made observations during roofing and waterproofing work.

77 Dow Place Lofts

A new 14-story, 83-unit, live/work residential building in San Francisco. Review and commentary on proposed and alternative concepts for wall weatherproofing, deck, and foundation wall waterproofing, roof coverings, and various flashing and sealing concepts. Review and commentary on the architect's drawings. Preparation of detail sketches and specifications for the Architect to incorporate regarding roofing and waterproofing. Attended meetings and made observations during roofing and waterproofing work.

Cathedral Hill Plaza, San Francisco, CA

Cathedral Hill Plaza - 14-story, 169-unit apartment building in San Francisco.

Investigated leakage at walls, windows, doors, balconies, louvers and roof. Investigated condensation at pool building. Researched repair options for tower.

Burlingame Country Club, Burlingame, California

Burlingame Country Club Dining Room

Investigated leakage from patio deck and doors above.

San Francisco Furniture Mart, San Francisco, California

Furniture Mart

Investigated multiple and widespread chronic leaks in this block-long building that was constructed in various phases from the 1930's to the 1970's. Leak sources and areas of concern included: windows, stucco walls, intake louvers, built-up, TPO and EPDM roofing, sealant, precast concrete, masonry, rooftop mechanical units, and metal flashing. Investigation, research, and preparation of alternate repair budgeting scope, preparation of drawings and specifications that provided long-term type repairs/replacement to two roof areas and related stucco masonry walls. Extensive resloping with many added drains on one roof. Provided periodic application monitoring, attended weekly project meetings, prepared progress reports on contractor's efforts.

City and County of San Francisco, California

Taraval Police Station, San Francisco, CA

Investigated extensive and widespread leakage into a newly renovated and expanded police station. Leak sources and areas of concern included: expansion joints, fiber cement shingles, built-up and modified bitumen roofs, metal crickets, masonry copings, and walls, windows, basement waterproofing, stucco walls, louver vents and various flashings.

PROJECT SAMPLING (continued)

San Francisco Produce Mart, San Francisco, California

Produce Mart

Large, older metal roofed wholesale produce distribution/market with chronic roof leaks and corrosion. Consulted with owner, assisted with value engineering and evaluation of contractors' repair proposals, developed scope of work in conjunction with owner's contractors, and periodic site visits to observe work. The cost-effective repair program addressed corrosion and has stopped leakage without disruption of operations.

Major Airline Client, San Jose International Airport

Terminal A Extension

Seven-year-old occupied airline terminal with chronic corrosion and leaks through metal roof flashing and HVAC units. Leak and roof deterioration investigation, research and preparation of alternate repair budgeting scope, preparation of drawings and specifications that provided a 20-year type repair system that did not disrupt the public or airline operations. Weekly meetings and application monitoring during repairs.

Sedgwick, Detert, Moran and Arnold Law Firm; and Crow Spieker, San Francisco, California

Montgomery Washington Tower

Built in mid-1980, 26-story high-rise with chronic leaks and inadequate diagnosis and repairs by others. Curtain wall, solarium, sealant, window, door, roof, stone cladding, metal flashing, railing, deck and balcony membrane leak investigations; developed repair scopes of work, detail drawings, observed repairs; and litigation support. Developed extensive quantity estimates and budgeting scopes of work. Constructed graphic exhibits and full-scale mock-ups of as-built conditions and proven repair methods. Served as lead defense expert. Developed cost-effective and successful deck and balcony repairs that minimized disruptions to the occupants and did not require dismantling walls and railings to implement. The jury and the HOA's repair designer endorsed/ adopted those repair concepts.

Sedgwick, Detert and Arnold Law Firm; and Pearson and Johnson General Construction

Colina Condominiums Daly City, California

Performed leak investigations just following reconstruction due to previous leakage. Prepared report and testified at trial.

Fong and Fong Law Firm

Park Villas HOA, Pleasanton, California

Investigated leakage and developed opinions regarding paths of water entry leading to decay in wood-framed condominiums. Prepared report, trial exhibits and testified at trial.

The Gables HOA, Pleasanton, California

Leak investigations, condition surveys, destructive testing, and construction defect presentation for the Homeowner's Association. Prepared poster boards illustrating conditions. Attended settlement conference.

Law Offices of Ann Rankin

Market Place at Town Center, multiple buildings at this shopping Center Eldorado Hills, California

Investigated leakage at windows, louvers, access doors, sign penetrations, column flashings, built-in gutters, pipe penetrations, flashings for tile roof, CMU walls, and in field of stucco walls. Investigated stucco cracks. Reviewed the condition of roofing: concreted tile, composition shingles, and built up roofing. Prepared reports and PowerPoints in support of litigation. Planned full scale mock ups of various elements the walls and roofs for presentation at trial. Gave deposition testimony. Prepared detail drawings and specifications for repairs in conjunction with a Architect.

PROJECT SAMPLING (continued)

Gordon/Clifford Realty, San Francisco, California

Major Charity's Facility

Three-story concrete and metal framed building, with extensive history of leakage and unsuccessful repairs. Traced leakage to stucco walls, windows, patio waterproofing, doors, and numerous flashings and transitions. Uncovered seriously deteriorated metal framing and building paper. Provided owner with budgeting scope of work and report to allow them to make business decisions regarding weatherproofing of the building.

Armco Management Company, San Francisco, California

- 439 Greenwich HOA - Leakage investigation into walls, windows, doors, decks and roofs. Specifications, drawings, consulting, and periodic monitoring of repair efforts.
- 1885 Jackson Street - Leakage investigation into walls, windows, doors and roof, specifications, roof plans and details.
- 2855 Jackson Street - Leakage investigation and drawings regarding plaza deck and walls.
- Church Street Gardens HOA - Leakage investigation into walls, windows, doors, decks and roofs. Specifications, drawings, consulting, and periodic monitoring of repair efforts.
- 1385 Greenwich - Leakage investigation, drawings, and scope of repair regarding walls, windows and roof.
- 2425 Market Street, Castro Commons - Leakage investigation, litigation support, condition survey and periodic monitoring of repair efforts regarding roofs, walls, and decks, drawings.
- Alamo Terrace HOA - Investigated leakage, provided litigation support.

Mills Hospital, San Mateo California

Hospital Building

Observed reported leakage and made conceptual recommendations for repairs to concrete walls, louvers, doors, built-up roofing and skylights and prepared report.

Pleasanton Physician Affiliates, Pleasanton, California

Medical Office Building

Eighteen-year-old, three-story, medical office building. Investigated chronic leakage through stucco walls.

Rolling Hills Professional Association, Fairfield, California

Dental Office Building

Investigated leakage through stucco wall window flashings, windows, sheet metal flashings, roof ducts, and built-up roof. Prepared report and met with owners and their attorney. Prepared budgeting preliminary project description for contractor to price.

Kaiser Foundation Health Plan, Oakland, California

Medical Office Building, Antioch, California

Built in 1991, one-story, wood frame building. Investigation into numerous leaks and possible pathways of water intrusion through perimeter walls, observed condition of roof and repaired report.

Dr. Chong's Office, Walnut Creek, California

Medical Office Building

Investigated leakage through roof ducts, observed condition of built-up roof, and prepared report.

PROJECT SAMPLING (continued)

Kaiser Office Tower, Oakland, California

Built in early 1960's, twenty-eight-story concrete and aluminum office tower, five-story concrete mall and garage with a three-acre roof garden. Investigation into extensive roof garden leakage, primarily from previously repaired expansion joints buried beneath soil, planters, and sidewalks. Research and development of warrantable repair joint and waterproofing, scope and detail drawings, periodic application monitoring. Roof condition survey for complex. Tower roof leak investigation and development of repair concepts.

Napa Sanitation District, Napa, San Francisco, California

Administration Building, Soscol Water Treatment Plant

Leak investigation at concrete and CMU walls. Preparation of report.

AT&T (formerly SBC, formerly Pacific Bell) Headquarters, San Ramon, California

Pacific Bell Administrative Center

Large, mid-1980's, sprawling concrete and steel three-story building with extensive chronic leaks through fluid-applied urethane plaza deck waterproofing, Bentonite basement waterproofing, metal arch/internal gutter, and miscellaneous flashings/transitions. Performed extensive leak investigations. Recommended repair concepts and options. Recommended repairs for below-grade waterproofing and flashings. In conjunction with the owner's architect, prepared specifications and drawings for waterproofing and flashings for re-waterproofing the central plaza deck and dining roof containing large built-in planters and patios. Managed periodic application monitoring, attended weekly project meetings, prepared progress reports on contractor's efforts over a 5 year period.

Mervyn's Building Services, Hayward, California

- Kendall, Florida - Leak investigation and repair supervision at walls, expansion joints, roofs, and skylights following Hurricane Andrew.
- Detroit, Michigan - Leak investigation at rooftop HVAC units.
- Hayward, California - Roof and wall leak investigations, roof application monitoring.
- Phoenix, Arizona - Roof application monitoring.

Longs Drug Stores, Walnut Creek, California

- Riverside, California – Monitored roof membrane application monitoring.
- Point Hueneme, California – Monitored roof membrane application monitoring.
- Atascadero, California – Monitored roof membrane application monitoring.
- Victorville, California – Monitored roof membrane application monitoring.

2200 Pacific Homeowner's Association, San Francisco, California

2200 Pacific

Twelve-story concrete condominium. Leakage investigation at walls, built-up roofs, rooftop pool, and surrounding deck following unsuccessful repairs by others. TRS prepared specifications in conjunction with Avelar and Associates, AIA.

370 7th Street HOA, San Francisco, California

370 7th Street

Newer seven-story frame wall and CMU condominium. Leakage investigation at stucco walls, door flashings, windows and doors, deck waterproofing, shingle roof flashings and built-up roof flashings. Prepared report and reviewed conditions with HOA.

PROJECT SAMPLING (continued)

290 Roosevelt HOA, San Francisco, California

290 Roosevelt

Older three-story frame wall condominium. Investigated leakage at stucco walls, door flashings, windows, and deck waterproofing. Prepared report and reviewed conditions with HOA. Reviewed repair concepts with contractor and discussed repair options with the HOA after contractor provided repair budgets.

MSA, Inc., San Ramon, California

Olympian Hills HOA, Hercules, CA

Built-up roof and modified bitumen consulting, specifications, drawings, roof application monitoring.

Transpacific Development Co., Oakland, California

1999 Harrison Street, Oakland, CA

Concrete and steel, twenty-eight-story, high-rise built in the mid-1980's having a protected roof assembly, and curtain wall with aluminum-framed windows, granite and concrete panels, caulked with urethane and butyl sealants. Investigation into chronic curtain wall leakage through windows and sealants, curtain wall condition survey, development of repair concepts and repair mock-up.

Douglas G. Peterson and Associates, Greenfield, Massachusetts

Various Structures on Island of Kauai, Hawaii

Following Hurricane Iniki - Four months of roof evaluations, failure evaluation, leak investigation, condition reports, and repair recommendations on structures all over the Island. Roofs evaluated included metal, tile, wood, built-up, modified bitumen, and fiber cement.

Fingerhut Distribution Center, Spanish Fork, Utah

Investigated role that roof membrane and ballast played in snow load collapse of roof structure at this 1.1 million square foot warehouse and distribution center. Review of possibilities of future wind damage losses.

Blackhawk Country Club, Danville, California

Blackhawk County Club

Construction in the early 1980's. Tile roof, deck, waterproofing, and door leak investigations.

Single Family Residences, California

- **San Francisco** – (older home) Investigated leakage through plaza decks, waterproofing and flashing to stucco walls; uncovered major decay and much more extensive leakage than had been reported, resulting in the client negotiating for repairs prior to purchase. Developed budgeting scope of work and detail drawings for contractor to price.
- **San Francisco** – (home under construction) Investigated leakage through window flashings of this home after original contractor was replaced.
- **Noe Valley** (new home) – Deck, waterproofing, railing, shingle, wall, door, and flashing leak investigations, repair concepts, and litigation support.
- **Hillsborough** – (new home) Investigated leakage through deck waterproofing transitions to doors and stucco walls, through door and window flashings at stucco walls and at the juncture of windows to concrete walls. Investigated condition of modified bitumen roof. Worked with owner's architect to devise repair concepts.
- **Lafayette** – (older home) window wall flashing and built-up roof flashing leak investigation, report preparation, and review of repair concepts with the owner and a contractor.
- **Berkeley Hills** (newly remodeled) – Extensive deck, waterproofing, stucco, wall, window, and French door leak investigations; developed repair scope and drawings; and litigation support.

PROJECT SAMPLING (continued)

- Hillsborough – (Fifteen-year-old home) Investigated leakage through plaza deck waterproofing, deck waterproofing transitions to doors and stucco walls, through doors and door and window flashings to stucco walls. Investigated chronic breaking of roof slate and condition of built-up roofs. Waterproofing and structural deficiencies necessitating removing and rebuilding the backside of the home, reroofing and extensive repairs to other walls. Worked with owner's team of architect and structural engineer to devise repair specifications and drawings. Provided periodic application monitoring, attended project meetings, and prepared progress reports on contractor's efforts.
- Orinda – (new home) Deck, waterproofing, stucco, wall, window, French door, built-up roof, and wood shake leak investigations; repair concepts.
- Oakland – (older home) investigated leakage at replacement shingle and modified bitumen roof coverings and roof to wall flashings. Prepared report. Litigation support. Met with roof contractor to review report.
- Blackhawk (two new homes) – Extensive tile roof, stucco, wall, deck, waterproofing, window, and door flashing leak investigations.
- San Rafael (new home) – Wall, window, door, and roof leak investigations; repair concepts; and litigation support.
- Kentfield (new home) – Stucco penetration, window and door flashing, and deck leak investigation and report preparation.
- Tiburon (new home) – Window flashing/wood siding and chimney leak investigation; litigation support.
- Napa (home under construction) – Stucco wall crack investigation and report.