



Offered in: California, Hawaii, Washington, Oregon, North Carolina



## ROOFING PROGRAMS

### Roofs Can Last in Excess of 30+ Years But Most Do Not

- Examples - 30+ year sustainable traditional BUR
- Visual essay - bad roof construction vs. proper details and methodology, including forensic evaluation
- Forensic evaluation - 18 year old PVC
- Evaluation - 12 year old SBS roof membrane premature failure
- Case Study - 12 year old copper roof; failure and repair

### Architectural Sheet Metal Roofing & Flashings

- Review the major types of sheet metal and see how they differ in corrosion resistance, finishing, joining, and where to use
- Cross compare the various types of sheet metal
- Review how common components such as parapets, gutters, flashings, stops and edge material are incorporated

### Avoiding Condensation in Low Slope Roofing Assemblies

- Understand the science behind vented and unvented compact roof assemblies
- Review how common Learn the differences between vapor barriers and vapor retarders
- Demonstrate forensic case studies of condensation related roofing failures
- Learn specific design considerations for avoiding condensations

### Understanding Metal Roofing Systems

- Review difference between hydrokinetic and hydrostatic metal roofing
- Describe the 3 basic types of metal roofs
- Review requirements for each roof system
- Understand metal roofing underlayment
- Learn from several metal roofing forensic case studies

### Proper Selection of Roof Types: 12 Roof Types Considered

- Deciding which roof type is best for your project

- How geography affects roof type
- Design issues
- How roof type affects materials selection
- Aesthetics vs. Durability

### Understanding and Design of Garden Roofs

- Review examples of intensive and extensive roof garden systems
- Provide examples of structural and drainage components
- Understand examples of fluid applied and sheet membrane systems and examples of insulation and protection

### Waterproofing for Garden Roofs

- Overview and history of Garden Roofs
- Extensive vs. Intensive
- Systems & components overview
- Best type for roof garden
- Systems selection for waterproofing protection and roof insulation

## ABOUT ABBAE

Allana Buick & Bers, Inc. (ABBAE) offers seminars and training classes in a variety of formats. From 60 minute 'lunch and learns' to half day seminars. All ABBAE courses provide AIA Continuing Education learning Units. This flyer provides a summary of our most popular classes.

ABBAE is dedicated to providing comprehensive and innovative consulting services with award-winning expertise in building envelope design, architectural engineering, mechanical optimization, and construction management. ABBAE is customer-focused, providing expert advice using advanced technologies for enduring solutions.

### Roof Coating 2018: What, When, and How to Use

- What a roof coating system is
- The types of roof coatings
- Understand when roof coating vs. replacement is appropriate.
- Basics of a roof recoating projects

### Critical Review of the Life Span of TPO and PVC Single Ply Roof Membranes

- A visual field essay on TPO Roofs and their performance under high heat and reflectivity
- Manufacturer, additive, and environmental issues
- Sustainability Scores of TPO roofs based on membrane material, traffic impact, damage and design
- How physical forces (sun, water, wind) can affect TPO and PVC roof systems

### EXTERIOR WALL PROGRAMS

#### Curtain Wall Seminar

- Overview of what a Curtain Wall system consists of. Review of Curtain Wall Assemblies in use in the United States.
- Structural Elements. Rainscreen and Barrier Elements: Barrier Wall Systems. Rain Screen Systems.
- Drainable Wall Assemblies. Metal Wall Panels. GFRC.
- Glass. Design Issues. Sealants.

#### Understanding Wall Assemblies

- Understanding stucco and EIFS assemblies
- Understanding moisture management in the exterior wall assembly
- Comprehensive review of cement plaster in commercial buildings
- Thermal movement effects of metal studs and large foam shapes

### Introduction to Curtain Wall and Window Wall System Issues

- Review of U.S. curtain wall assemblies
- Design Issues
- Rainscreen and barrier elements
- Energy performance
- Curtain wall testing
- Structural and seismic elements
- Window wall failure case study
- Understand performance issues and forensic analysis with vinyl windows
- Review case studies to gain an understanding of the causes behind glazing, frame-joint, drainage pathways, muller windows and other structural fenestration failures
- History of Architectural Glazing
- Manufacturing of Float Glass
- Post Production Processes

### Curtain Wall Failures - Design or Products

- Review of window and curtain wall assembly failures
- Performance issues
- Forensic studies showing glazing successes and failures

### High Performance Buildings

- What is a high performance building?
- Understand how to lower energy costs while increasing operating income

### Understanding Exterior Walls and Code Changes

- New building code and construction document requirements
- Differences in exterior wall types and systems
- Shift in responsibilities, scopes of work and standards
- Real facts on building science and properties of materials
- Critical details for the interfacing of components

### IGU's and You: Benefits of Insulated Glazing Units

- Learn the history of architectural glazing
- Understand the manufacturing process of float glass
- Learn about various post production processes such as thermal treatments, applied coatings, and manufactured glazing.
- Pros and cons of insulated glazing units.

### Performance Issues and Forensic Analysis with Vinyl Windows

- Provide insight to specifying windows to mitigate performance issues
- Participants will gain an understanding of failure issues in relation to how the vinyl windows are manufactured and sealed
- Participants will review several case studies and gain an understanding of the causes behind glazing, frame-joint, drainage pathways, muller windows and other structural fenestration failures.

### WATERPROOFING PROGRAMS

#### Below Grade Waterproofing

- History, properties, types and applications
- Advantages to using a bentonite waterproofing system
- Blindside construction procedures and their impact on bentonite-based waterproofing systems
- Case study of failed blindside waterproofing system with review of repair procedures

#### Waterproofing Basics

- Provide an overview of basic primer on Thermal and Moisture Protection issues
- Review ground water control, dampproofing, waterproofing, precipitation control and roofing materials
- Review condensation control, thermal control, flashing and expansion joints

### Below Grade Waterproofing - Design Considerations and Common Failures

- Positive Side Waterproofing: Waterproofing applied to the outside or "wet" face of the foundation wall Water and soil pressure forces the waterproofing membrane against the structural substrate Most successful waterproofing approach
- Design Considerations Geotechnical Report Perched Water Relieved and Non-Relieved Foundations Positive vs. Negative Side Waterproofing Excavation and Shoring Foundation Wall Construction (Cast in Place vs. Shotcrete) Waterproofing System Options Forensic Lessons Wood Lagging – Bentonite-Shotcrete System Failure High Storm Water Flow – Bentonite Geotextile Failure
- Blindside construction procedures and their impact on bentonite-based waterproofing systems
- Case study of failed blindside waterproofing system with review of repair procedures

#### Design of Plaza Deck Waterproofing

- Discussion will cover general Plaza Deck types: Protected Membrane, Split Slab, Traffic Bearing, Surface Applied, Roof Garden
- Plaza Deck training course will cover the following topics: Geotechnical Report, Plaza Deck Configurations, Structural Considerations, Waterproof Membranes, Drainage, Protection and Root Barriers, Insulation Warranties
- In-depth training on the essential components of plaza deck waterproofing design by an industry expert with decades of experience in new construction, remedial design and forensic investigation. Receive instruction on design and construction best practices protocols that are vital to create waterproof and sustainable plaza decks.

- Review of Plaza Deck design. We will illustrate the importance of plaza deck design and how it integrates into other systems.

### Waterproofing is Not Skin Deep Lath and Plaster Systems

- Understanding moisture management in stucco wall assembly
- Suitable substrates for stucco in Type III and Type V buildings
- Proper lathing and flashing techniques
- Understanding scratch, brown and finish coats for 1 and 3 coat plaster systems

### Horizontal Above Grade Waterproofing

- Learn about various configurations, considerations, protections, insulations, and warranty questions regarding plaza deck waterproofing
- Learn about the different types of plaza decks and the pros and cons of each
- Learn how to protect your plaza/podium from water, root, and thermal damage.
- Understand the structural substrates and pros and cons of each.

### Advanced Hygrothermal Analysis

- Understand material properties, exterior environment and interior environment approach in Advanced Hygrothermal Analysis.
- Understanding a traditional approach to assembling building materials, determining condensation point from psychometric chart, and calculating the thermal drop across the materials.
- Understand where to use ASHRAE Standard 160 "Criteria for Moisture-Control Design Analysis in Buildings"
- Understand how Fraunhofer WUFI hygrothermal analysis software tool is perform ASHRAE Standard 160 analysis

### BUILDING ENVELOPE PROGRAMS

#### Air Barrier Assemblies and Continuous Insulation

- Air Management vs. Moisture Management.
- Moisture Movement in Walls.
- Air Barrier Principles and Design Considerations.
- Why the Need for Continuous Insulation?
- Continuous Insulation Design Considerations and Local Code Requirements

#### Air and Water Testing of Building Envelope Assemblies

- Understand what building envelope tests are code required or are just a plain good idea
- Differences in standards for water testing, testing methods for horizontal waterproofing assemblies
- Differences in test methods for sealant and coating adhesion and peel tests and standards in air barrier testing
- See live videos of window, air barrier testing and AFVM and what should be done when testing provides inadequate results

#### Life Expectancy & Longevity of Building Envelope Systems

- Review the significant lifespan variation for similar building assemblies
- Review qualities that impact lifespan and maintenance
- Understand the cost-savings, ROI analysis of higher quality building envelope systems
- Take steps to ensure an optimized building lifespan to meet the owner's objectives
- Impact of maintenance and operating cost on lifespan

### Mitigating Risk in Construction

- Learn how pre-construction meetings with key enclosure sub-contractors can set quality control measures at the onset of construction.
- Demonstrate through examples how mock-up construction allows an opportunity to make design and construction changes in the field.
- Learn the test standards of air barrier testing, water testing, and horizontal waterproofing and how these tests can identify failures, design defects, and manufacturing failures.
- Learn how conductive substrates can be built-in during construction to mitigate costly repairs and precisely pinpoint roof leakage before there is underlaying damage.

### BUILDING MAINTENANCE PROGRAMS

#### How to Know When Plumbing Systems Go Bad.... And How to Plan For It.

- Plumbing 101 – understanding basic plumbing components and what can cause reserve under funding
- Show examples of easily accessible plumbing components and the more expensive components hidden behind walls
- Show examples of plumbing problems hidden within the pipes themselves
- Look at a case study of a recent HOA/AOAO projects
- Describe the remaining useful life of plumbing systems per most reserve studies, and according to some recent experiences

### Prevention of Concrete Spalling

- Understanding causation of concrete spalling
- Preventative measures for preventing spalling
- Provide a review of what items to include in cost estimating for the reserve study
- Review repair techniques
- Review the types of other repairs that should be done at the same time as spall repairs, and the implication for cost estimating

### Get Rid of Deferred Maintenance in HVAC: Commercial Building Owner Savings

- The exponential, negative effects of deferred maintenance in HVAC in commercial buildings.
- How to identify deferred maintenance in HVAC
- Getting past lowest first cost on HVAC and Energy projects - How financial analysis wins the case for higher first cost projects
- How lower energy costs contribute to a higher asset value