



Maintenance and Repair Strategies

CAA Seminar – Increasing Your Property Value
March 23, 2004

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Allana Buick & Bers, Inc. 2020



ALLANA BUICK & BERS

Making Buildings Perform Better

Best Practice

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Karim P. Allana, PE, RRC, RWC

- **Education:** B.S., Civil Engineering, Santa Clara University
- **Registration:** P.E., Civil Engineering, California, Washington, Nevada, and Hawaii
- **Certification:** Registered Roof Consultant (RRC), Roof Consultants Institute, and Registered Waterproofing Consultant (RWC)

- **Overview:**

- CEO and Senior Principal at Allana Buick & Bers.
- Former Turner Construction Employee (Project Engineering and Superintendent)
- Over 37 years experience providing superior technical standards in all aspects of building technology and energy efficiency.
- Principal consultant in forensic investigations of building assemblies, failure analysis, evaluation and design of building infrastructure and building envelope evaluation and design.
- Expert in all aspects of building envelope technology.
- Completed numerous new construction, addition, rehabilitation, remodel and modernization projects for public and private sector clients.
- Specialization in siding, roofing, cement plaster, wood, water intrusion damage, window assemblies, storefronts, below grade waterproofing, energy efficiency, solar engineering and complex building envelope and mechanical assemblies.



ABBAE Firm Overview

- Allana Buick & Bers (ABBAE) is an Architectural Engineering firm specializing in Building Envelope Systems
- ABBAE is one of the 5 largest building envelope consultants in the country
- ABBAE has over 33 years of experience & over 12,500 projects
- ABBAE is also a leading Forensic Defect firm with hundreds of forensic projects (litigation)
- Locations – 16 offices across California, Nevada, North Carolina, Oklahoma, Oregon, Texas, Virginia, Washington, Colorado and Hawaii



Staff & In-House Expertise

- Licensed Professional Engineers – Civil, Structural, and Mechanical
- Registered Architects
- Building Enclosure Commissioning Process Providers (BECxPs)
- Registered Building Envelope Consultant (RBEC)
- Registered Roofing Consultants (RRCs)
- Registered Waterproofing Consultants (RWCs)
- Registered Exterior Wall Consultant (REWCs)
- Registered Roof Observers (RROs)
- Certified Exterior Insulation and Finish System (EIFS) inspectors
- Curtain Wall Specialists
- ICC Certified Building Inspectors
- Quality Assurance Monitors
- Water Testing Experts
- Leak Investigation and Diagnosis Experts
- Infrared Imaging and Nuclear Moisture Scanning Experts

ABBAE Building Expertise

- Building Envelope Systems

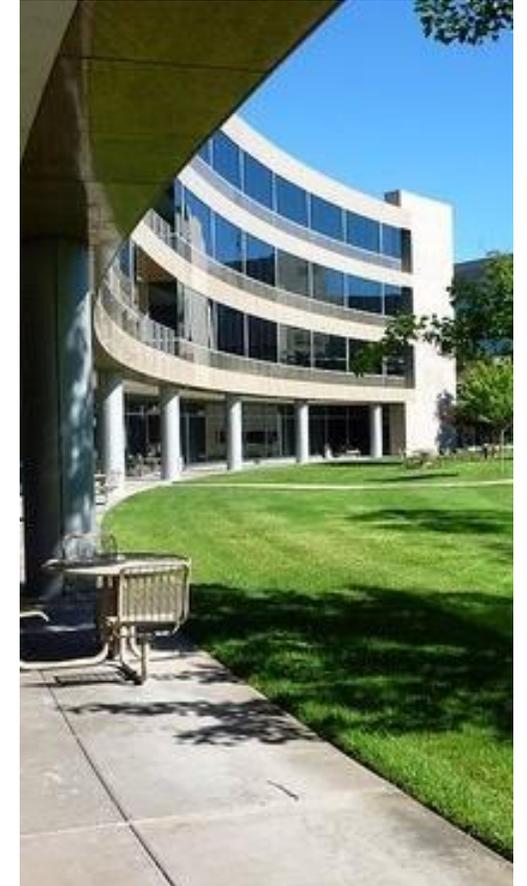
- Roofing Systems
 - High-Slope/Low-Slope Roofs
 - Green/Garden Roofs
 - Drainage Systems
 - Pedestrian Plazas
- Exterior Wall Systems
 - Wall Cladding/Siding/GFRC/pre-cast
 - EIFS/cement plaster/stucco
 - Sheet Metal Flashings
- Windows and Glazing Systems
 - Punched Windows
 - Curtain Wall/Window Wall Systems
 - Sliding Glass Doors
 - Skylights

- Building Envelope Systems (cont'd)

- Roofing & Waterproofing Systems
 - Deck/Balcony/Lanai Waterproofing
 - Podium Waterproofing
 - Pool/Spa Deck Waterproofing
 - Above-Grade/Below-Grade Waterproofing
 - All types of low and steep sloped roofing
- Commissioning BECx
 - OPR/BOD/Commissioning Plan
- Mechanical/HVAC Systems
 - HVAC design
 - Plumbing systems
 - Commissioning and testing

ABBAE Core Services

- Consulting and third-party peer review services
- Engineer of record for building envelope systems
- Contract administration services
- Inspection services (usually direct with owner)
- Air and water performance testing
- Mock-up design, observation, and testing
- Building assessments and forensic investigations
- Litigation support and expert witness services
- Educational seminars with AIA credits



Maintenance Vs. Repairs

- Inherent construction defect requiring repairs is not maintenance!
- Identify repairs that fall outside of regular maintenance.

In Order to Define What Is Maintenance...

- Define life expectancy for components.
- More frequent replacement or repair = likely construction defect, not maintenance.
- Maintenance = cleaning, debris removal, etc.

Life Expectancies...

- Sealants: 10 to 25 years
- Painting: 5 to 7 years
- Hardboard siding: 25 years
- Roofs: 20 to 30 years
- Below grade waterproofing: Life of the building.
- Windows: Life of the building.
- Stucco: Life of the building.

Repairs Due To Defective Construction

- If a 20 year type roofing system needs “repairs” other than, leaf cleaning, or physical damage.
- If 20 year type (or 10 year type) sealants need replacement or fail in less than their life expectancy.
- Window leaks in less than 10 years.

If You Identify Defective Construction...

- Immediately notify a Supervisor or Principal of the company.
- For re-roofing, re-painting, replacement sealants, etc., 10 year construction statues may apply.
- Approach the Contractor and ask them to permanently repair or replace the problem application.

New Construction Defects

- California law holds Contractors responsible for latent defects up to maximum of 10 years from completion.
- Once a defect is known, the statute of limitation is 3 years.
- After either time period runs out, the Contractor can not be held responsible.



Roof Maintenance

Ongoing Roof Maintenance

- Frequently occurring items like:
 - Gutter cleaning.
 - Annual inspection of roofs.
 - Tree trimming.
 - Repair damage from tree limbs.



Hardboard Siding Maintenance

Siding Is...

- Cement plaster (stucco).
- Window walls and other glass.
- EIFS (thin coats of stucco over foam-type material).
- Masonry (brick siding, brick veneer, etc.).
- Wood products (redwood, cedar, etc.).
- Composites (T-111, hardboard, OSB, etc.).

*** According to the National Roofing Contractors Association Roofing and Waterproofing Manual, 4th edition**



**We will focus on hardboard
and wood siding...**

History of Materials and Construction Methods

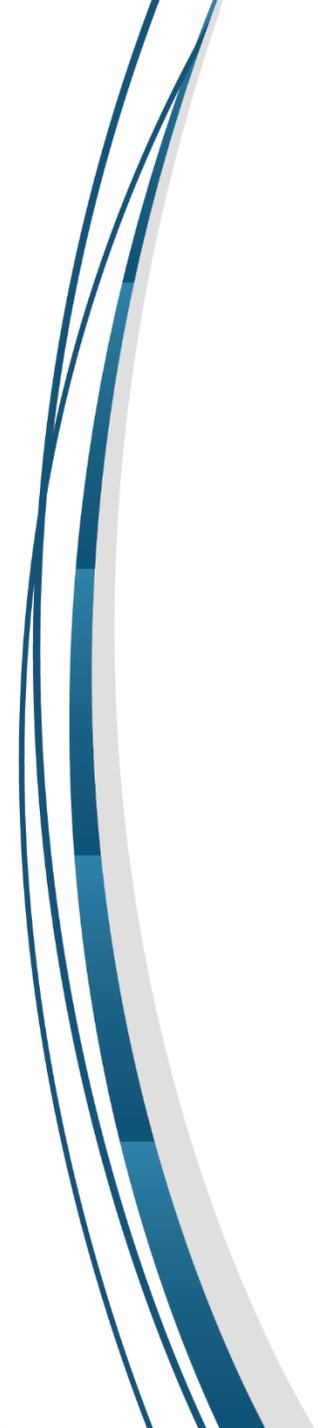
- Old growth wood now harder to find
- For energy purposes, buildings are tighter and do not ventilate as well
- An example of ventilated old siding.
- Hardboard and oriented strand board (OSB) are inferior in performance to wood, especially old growth wood.



















Maintenance Tips

- Regularly inspect and replace sealants.
- Back prime all replacement trim and wood – end prime all wood.
- Redirect sprinklers away from building siding.
- Paint on a regular cycle, 3 to 5 years.
- Paint the bottom edges of siding.





How To Recognize Problems In Siding

- Cracks and splits in siding and sealants, especially at corners and joints.
- Swelling and buckling of siding.
- Separation, due to swelling or shrinkage at windows, doors, and other opening.
- Siding problems.
- Sealant problems.
- Flashing problems.











Sealants and Painting for Stucco and Siding

Design Rules of Thumb

- Use appropriate details.
- Specify head flashings and install properly.
- Specify and install flexible flashings and underlayments.
- Properly select trim materials and installation methods.
- Specify sealants that are appropriate for the use and installed properly.