



A GUIDE TO MAINTAINING OLDER BUILDINGS

Paralleling the national crisis over the rising cost of healthcare, there is a remarkably similar crisis emerging with respect to maintenance of aging buildings. Unfortunately, most building owners simply don't see the crisis coming.

If you stop and think about it, buildings are actually very similar to people. Both have structural components (bones), an exterior façade (skin), waste disposal systems (intestinal system), electrical systems (nervous system), etc. So what's the point of this analogy?



Roofing Replacement

In almost all cases, if Owners took care of their buildings the same way a health-conscious person cares for their body, most building components

would last longer, require less care, and cost Owners less money over the long term. Looking at it another way, decisions made by Owners today regarding the maintenance of buildings will have a direct and potentially profound impact on the severity, frequency, and overall cost of maintenance in the future.

No matter how you look at it, allocating funds towards good maintenance in

the short term, and properly repairing problems as they arise, directly impacts reserves and capital plans over the long term in a positive way; it makes your money go further.

Keeping your property in prime condition is key to maintaining and increasing its value. Building owners and property maintenance firms face daily challenges to extend the life of their investment. Here are some useful preventative maintenance reminders to help extend the life of your property and avoid major issues:

Exterior Protection:

Often, exterior building components are left exposed to UV and other elements without protection for far too long. This usually results in otherwise unnecessary repairs. Roofing, paints, waterproof coatings, sealants, and other exterior products protect structures from the elements. Monitor these systems consistently and replace them at the end of their serviceable life.

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PRINCIPAL'S NOTE



Karim Allana
Senior Principal

Welcome to the first issue of **The ABB Bulletin - Building Envelope News**. We hope to deliver you a sampling of industry buzz and keep you updated on our activities, accomplishments and news.

The company began in 1987 as Roofing Services and Consultants. Two name changes and 18 years later, Allana Buick & Bers, Inc. (ABB) was established in 2005.

In the last 22 years, ABB has become one of the largest and most renowned building envelope consulting firms in the nation.

Our cover article is linked with a core concept of our company; we help make your buildings last longer. Our Hawaii Principal, Dana Bergeman, provides an effective guide to ensuring the maximum life of a building.

The other article in this issue covers construction defects, specifically with regard to exterior wall failure. This is a topic that I have spoken about at length throughout my career. ABB has some of the most highly-skilled forensic architects and engineers who provide their expertise in determining the source and cause of wall failure.

I hope that you find this newsletter informative. Please don't hesitate to get in touch with any of us at ABB with your comments or questions.

ABB HELPING HANDS

HABITAT FOR HUMANITY
Honolulu, Hawaii



A big Mahalo goes out to ABB Hawai'i for their participation in Habitat for Humanity. It was a great success and the Ha'o Ohana was very appreciative of our hard work on their future hale.

As someone who is lucky enough to call Hawaii home and fortunate to live in such a paradise, I was pleased to see ABB Employees giving back. It was a privilege to help those less fortunate and work hard to improve their lives. ABB's goal is to participate annually with Habitat for Humanity and to continue learning and growing.

- Dana Bergeman, Principal

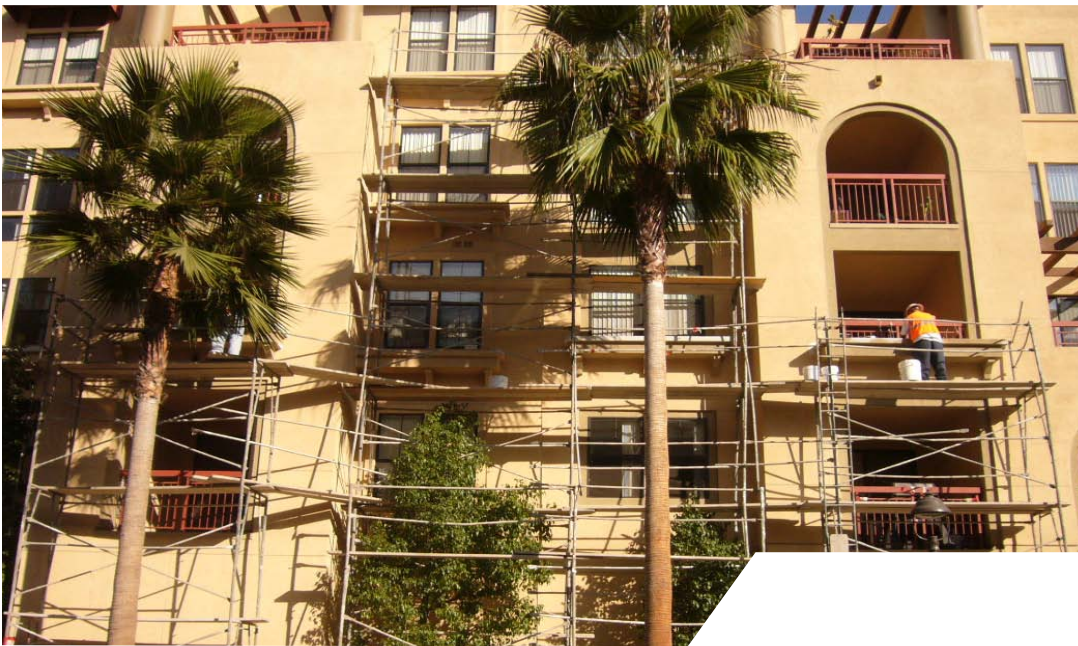


ABB TECH UPDATE

TROXLER GAUGES

Measuring Moisture

A Troxler nuclear moisture gauge is a non-destructive method that ABB uses to locate moisture in construction materials.

The gauge uses a small radioactive source (Americium 241 mixed with



Beryllium) to produce neutrons at a known rate. The neutrons slow down when they hit hydrogen and the gauge detects the backscatter of these slowed neutrons. The number of backscattered slow neutrons is directly proportional to the volume of water in construction materials directly under the gauge.

The method is considered non-destructive, since it's not necessary to take a physical sample of the construction material back to the laboratory to determine its moisture content. The gauge gives us a relative indication of how much water is in the roof or wall. If we need better precision than "wet" or "dry" we can correlate the Troxler gauge reading with laboratory-verified moisture content then extrapolate the actual moisture content of thousands of test locations from just 2 similar laboratory test samples. Since the Troxler gauge contains a small radioactive source ABB must be fully licensed by both the Federal and State government to own, store and operate this equipment.

CONSTRUCTION DEFECTS

ABB has specialized in Construction Defect expertise for more than 20 years. Our history of forensic roofing, exterior wall, waterproofing, building envelope, structural and mechanical engineering services based on real world experience is primarily gained from repairing failed buildings. We offer our knowledge as a resource to owners, designers and builders so that they can deliver a high-quality project to end-users.

Determining causes of exterior wall failure is often not a simple task. Seemingly simple items like excessive cracking and leaks in a stucco wall assembly could be a result of walls having:

- too much structural flexibility
- improper curing of stucco
- improper embedment or attachment of lath
- improper placement of expansion and control joints
- lack of story drift joints
- improper stucco mix design
- improper flashing and building paper integration
- improperly installed or wrong type of window
- improper placement of vapor retarders
- or a combination of these defects

Therefore, proper analysis of stucco defects often requires expertise in structural engineering, petrographic analysis, waterproofing expertise, stucco trade experience, window expertise, sheet metal expertise and general construction knowledge.

Similarly, below grade waterproofing failure can result from use of:

- the wrong type of material
- improper use of shotcrete, type of shoring method, soil mechanics and perched water table
- foundation drainage issues
- improper integration with wall and slab waterproofing
- improperly installed flashing
- other trade damage and other causes.

Seemingly simple failures involve complex analysis to understand the mode of failure and define culpability.

ABB's team approach to forensically studying and analyzing failures involves combining in-house expertise in all aspects of engineering, architecture, roofing, waterproofing, other trade experience and construction management.

Roof Maintenance Don't Wait For Failure

The current trend in buildings is sustainability. Perhaps the most cost-effective measure of sustainability is making buildings last longer. This involves designing and constructing long life-cycle systems and materials and proper maintenance. Here are key points to remember for your roof systems maintenance:

- Know what you have. Gather and organize roof related drawings, specifications, As Built documents, warranties, etc.
- Develop a preventive maintenance plan that includes annual inspections.
- Be cognizant of how other building systems (like HVAC) can effect the health of your roof.
- Know the cost benefit of repair vs. replacement. There will come a time when no amount of repair will cost effectively extend the life of the roof. Replacement will be the better option.

Can roofs last 40 years? Yes if properly designed, installed and maintained. Call us at **ABB** if you have questions about roof maintenance and setting up a life span maintenance program for your roof.

MAINTAINING BUILDINGS *Continued from page 1*

Active:

Address problems as soon as they arise. If your property is showing visible signs of needed repair, take immediate action. If extensive repair or rehabilitation is recommended, work with the consultant to produce a needs-based schedule which identifies the urgency of the repair work recommended.

Material Selection:

Use materials appropriate to your building. Using a lower-grade material in an effort to save money will often result in additional damage or more frequent cycles of material replacement; increased expenditures on a more frequent basis over time. Short term thinking regularly ends up costing owners money when ironically their goal is exactly the opposite.

Hire Professionals:

Engage a qualified engineering consultant to assist you with your building needs. Work with professionals experienced in providing investigation and analysis, and delivering options based on need, cost and schedule.

Sustainability:

Building Owners have the opportunity to do the right thing every day. Making sustainable choices, focusing on durability, and striving towards efficient solutions reduces consumption, reduces waste, saves energy, and makes the most of your money. Long term solutions may cost more up front, however well thought out decisions pay substantial dividends over time for both society and for your financial position.



ABB FACTOID garden roof

You might call it a living roof, an eco-roof, or even a rooftop garden; in every case it's a roof that has been planted with vegetation. The roof is typically covered with a layer of waterproofing material, then with soil or another planting medium, and planted with grasses, flowers, groundcover, or even shrubs and trees.

More at: abbae.com/garden_roof.html

ABOUT ABB

Allana Buick & Bers, Inc. (ABB) is determined to provide the most comprehensive and innovative consulting services with award-winning expertise in roofing, waterproofing and building envelope solutions. ABB is customer-focused, providing expert advice using cutting-edge technologies for time-enduring solutions. This publication is published several times a year. For more information, call (800) 378-3405 or email bd@abbae.com.

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