



**ALLANA BUICK & BERS**  
Making Buildings Perform Better

**BY ALLANA BUICK & BERS, INC.**

**CATEGORY: Construction Defects**



# MITIGATE RISK OF DEFECTIVE CONSTRUCTION

WE ARE HERE TO SUPPORT YOU

The Coronavirus crisis will eventually end, but the investment in your buildings will last for decades. It is still critical that buildings are built in a water-tight manner, built to last and perform well. With all the current stress and uncertainty, we are seeing first-hand that contractors and sub-contractors are struggling to maintain a high level quality of construction labor and supervision.

Without engaged third-party construction observation, the risk of defective construction increases exponentially, now more than ever. The last thing we want after emerging from this crisis is inherited issues with sub-standard construction, building leaks and lawsuits.

Allana Buick & Bers (ABB) is open to supporting essential construction projects and our construction staff are working during in these disruptive times. As you know, ABB specializes in protecting owners, contractors and architects from risk of building leaks by providing quality assurance services in the form of inspection, observation and testing. While working through COVID-19 issues was initially a challenge, we have successfully collaborated with our remote clients to be their eyes and ears on essential project sites. Currently, our construction monitoring and testing staff are only working within the 14 geographic areas and 8 States. Due to travel restrictions, we are unable to service remote projects beyond driving distance.

ABB is a building enclosure expert with over 33 years of industry experience. We learn how to mitigate risk of defective construction from other people's failures. Our learning and experience come from forensic investigation of premature failures, leaks and other defects and to assist owners and contractors figure out the issues and act as their expert witnesses. Collectively, we have investigated failures in thousands of buildings that cost billions of dollars to repair. This forensic learning has allowed us to build a very effective database of common defects that lead to failure, what not to do, what to look out for in quality assurance program to fit most budgets, including full-time and part-time observation services. Our tablet-based reporting is very effective in communicating with superintendents and sub-contractors daily and actively managing and closing out open issues quickly.

## **Common Construction Defects - What To Watch For**

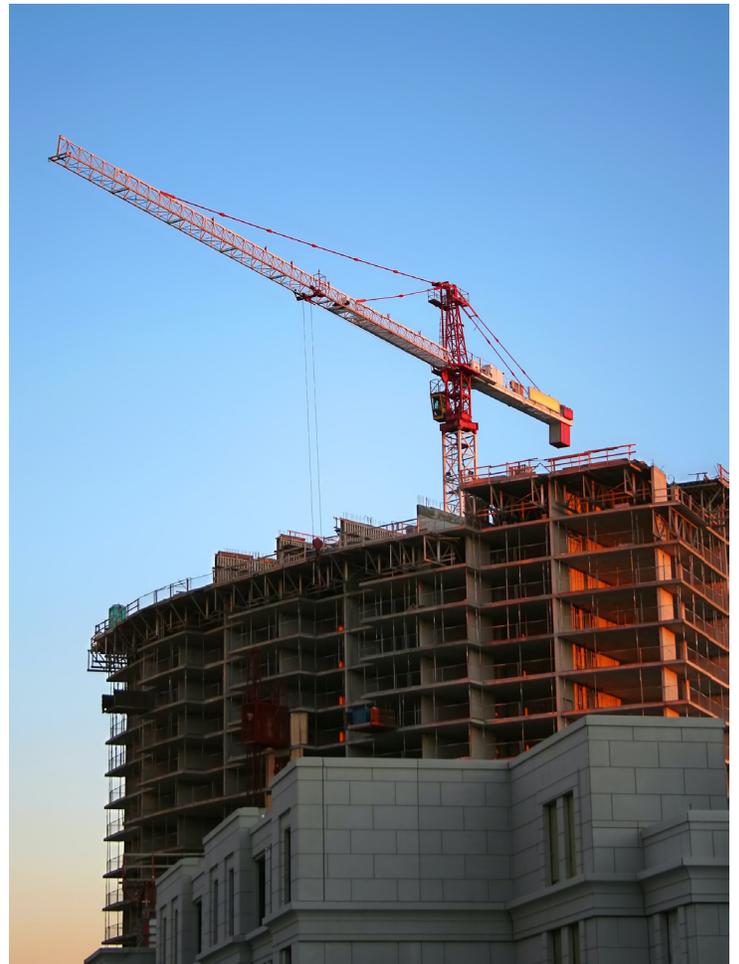
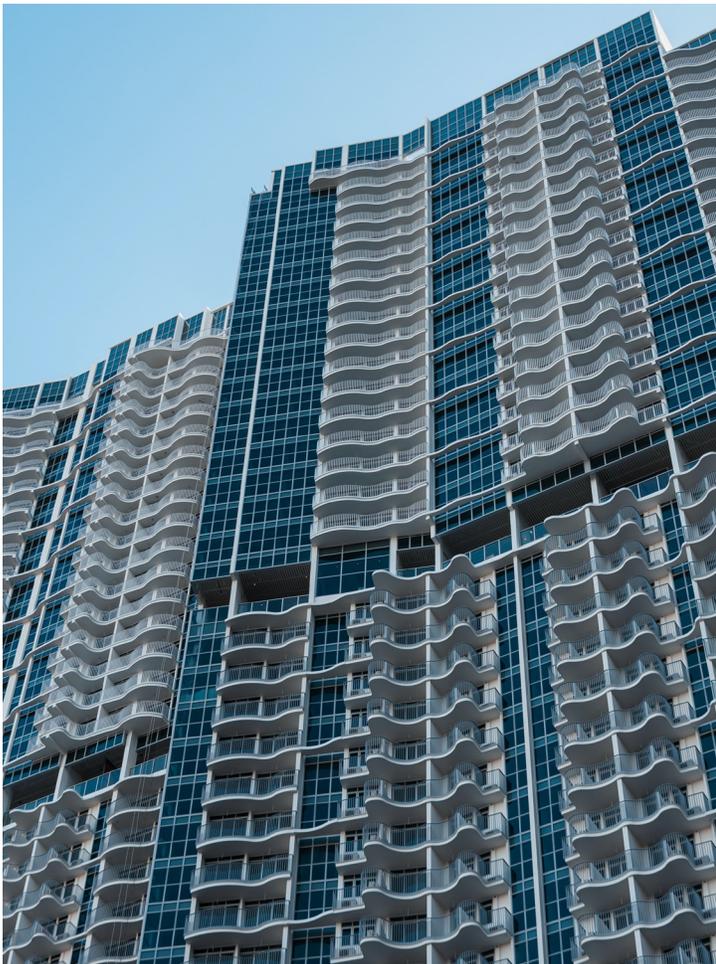
Defective construction isn't always obvious. More than 80% of the time, leaks take years to manifest themselves, well after construction is over. Small leaks and other seemingly minor issues during construction often represent the tip of the iceberg. If permanent fixes are left unresolved, "small issues" can lead to 100's of millions of dollars' worth of repairs.

Unfortunately, most defective construction does go undetected because waterproofing elements typically get enclosed relatively quickly following their installation and leaks don't happen until years. Yet, liability for leaks and defective construction can often have up to a 10-year statute of limitation, per most State law.

To be effective in reducing the liability, partially-completed trade construction needs to be inspected before it gets covered up. For example, it is imperative for façade construction that that weather resistive barriers, air barriers and wall flashings are built correctly before each layer is added. Many roofing systems also have critical elements like substrates, insulation board, and fire resistive barriers that need to be inspected and approved before being covered up. It is important that the insulation and roofing boards are properly staggered with the right fastening pattern before they are covered up with roofing.

Common construction defects include:

- Window flashings and weather resistive barrier issues
- Curtain wall/window glazing product fail to meet performance standards
- Roofing systems, insulation, vapor barriers and ventilation issues
- Exterior wall (stucco/siding) and façade failures
- Balcony/deck, elevated walkways and podium waterproofing failures
- Premature material failures
- Building ventilation, air conditioning and plumbing issues
- Fire resistive construction issues with gypsum wall board and smoke seals



## The Actual Cost Of Defect Reconstruction

In addition to acting as an expert witness, ABB also houses an award-winning architectural-engineering division that assists with building repairs, re-roofing, restoration and defect re-construction projects. We have seen first-hand how expensive it is to repair defective construction. While insurance can alleviate some costs, most owners are never made whole and **it's the building owners who are on the hook for the repairs and cost.**

## Case Study 1:

**650-UNIT RESIDENTIAL COMPLEX -  
TOTAL COR: APPROX. \$108,170,200**

**The Project** – This project included the forensic defect investigation, litigation support, and defect reconstruction for a 650-unit residential complex. By the time our staff finished the forensic investigation and testing, we had documented defects in the expansive curtain wall system, roof, parking garage, private balconies, common areas, and fire-resistive construction. Defects included several construction/installation related errors, particularly in the curtain wall system and the common, recreation areas. There were significant issues which should have raised red flags for experienced construction quality assurance monitors.

**The Cost of Repairs** – The Cost of Repairs (COR) for this project ended up being over \$100 million dollars. That's over \$166,400 per unit! Many of these issues could have been prevented with qualified peer review and third-party construction monitoring.

- Curtain Wall COR: \$45,891,982
  - Below-Grade COR: \$22,211,722
  - Balcony Deck COR: \$2,365,954
  - Roof COR: \$88,256
  - Fire-Resistive Construction COR: \$11,439,643
  - Add. Building Defects – COR \$26,172,656
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- Total Building COR: \$108,170,213

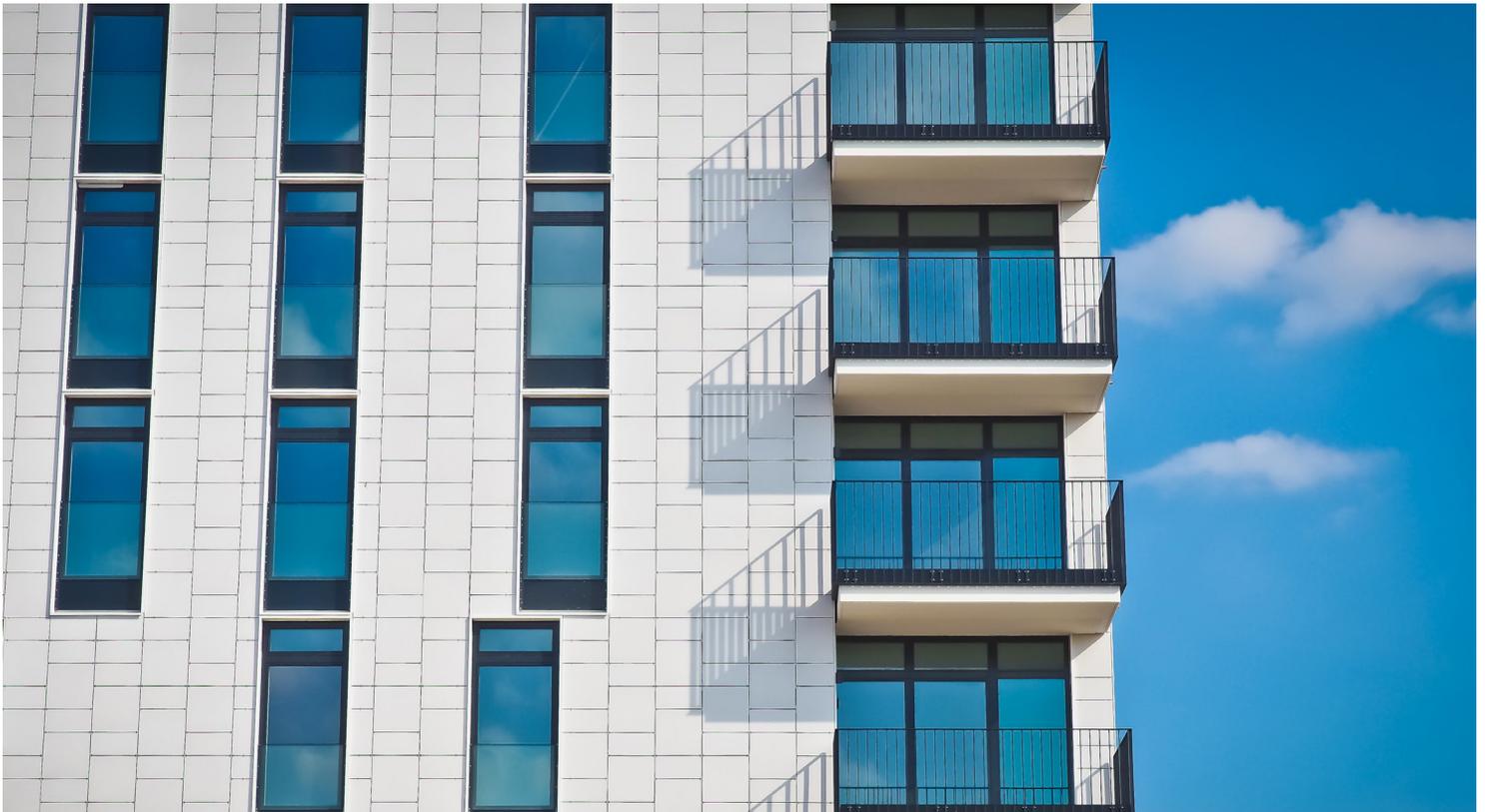
## Case Study 2:

**419-UNIT RESIDENTIAL COMPLEX -  
TOTAL COR: APPROX. \$73,971,500**

**The Project** – This project included the forensic defect investigation and defect reconstruction for a 419-unit luxury residential complex. This was a high-profile case which included significant defects at the curtain wall, below-grade area, plaza decks, plumbing, HVAC systems, and fire-resistive construction. Specific defects ranged from excessive condensation in the interior pool area, water intrusion, and improper drainage (to name a few).

**The Cost of Repairs** – The COR for this project ended up costing over \$70 million (over \$176,500 per unit). Like our first case study, many of the construction-related defects like the curtain wall and drainage issues could have theoretically been mitigated by engaged and effective third-party peer review and construction quality assurance monitoring.

- Curtain Wall COR: \$1,726,712
  - Below-Grade Area COR: \$14,652,206
  - Common Area COR: \$3,235,097
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- Total Building COR: \$73,971,509





## Mitigate Construction Defects With 3RD-Party Construction Observation & Testing

Statistically building enclosure components have the highest rate of system failure. As we've shown, it's also some of the costliest defects to rectify. It is imperative that owners and developers hire independent firms to provide high-level construction observation, particularly during building enclosure construction.

We have seen again and again in the field that vigilant construction monitoring is the most effective strategy for reducing defective construction (and generally increasing a building's life expectancy). Over our three decades of experience, we have found that the retroactive costs to repair enclosure defects typically way exceed the costs of proactively hiring a qualified building enclosure consultant by a factor of 5-10x.

Traditionally, professional third-party construction observation services also lead to a reduction in contractor Requests for Information (RFIs), Change Orders (COs), and other items that can delay construction and increase costs.

Retaining a qualified independent consultant to monitoring enclosure installations also confirms that installations were completed in accordance with the construction documents and industry standards, and document areas of non-compliance. Performance testing while you still have the contractor's retention, the crew at the jobsite and the ability to reject expensive fabricated items like window and curtainwall modules. By proactively conducting factory visits, it is possible to mitigate defective fabrication of pre-fab items like pre-cast panels, GFRC, curtainwall assemblies and pre-fab modules.

Our construction monitoring and observation program has several goals:

- To flag potential areas of concern missed in the original construction documents
- To confirm product installations are completed in accordance with the construction documents
- To check shop drawings and fabrication quality before pre-fab items are fabricated
- To confirm product installations are completed to owner/industry/manufacture standards
- To confirm product installations are completed in accordance with the construction documents
- Testing for air and water intrusion performance of assemblies like façade, waterproofing, and roofing
- To document situational occurrences (be it bad weather, high humidity, an earthquake, a questionable employee, etc.) that may impact the quality of current installations down the road

## How We Can Help

ABB provides a construction quality assurance plan with proactive (vs reactive) goals based on real world experience with failed buildings. Instead of providing a list of problems with the current construction, our team of experts provides solutions in real-time.

Our architectural engineering department (in conjunction with our construction monitoring division) have developed a detail-oriented, construction monitoring methodology over three decades of experience with building enclosure design and forensic analysis. Our construction monitors are some of the most highly-trained in the industry. They are also supervised by licensed architects, engineers, and certified building experts.

ABB provides the following quality assurance services:

- Construction monitoring for Quality Assurance / Quality Control (QA/QC)
- Registered Roof Observers (RRO), Registered Roof Consultants (RRC), certified EIFS and stucco inspectors, certified below grade waterproofing inspectors
- ABB is approved by most roofing, waterproofing and façade manufacturer as a certified special inspection firm
- Product installation monitoring for warranty compliance for most manufacturers
- Factory visits to verify compliance with shop drawings and industry standards
- Testing with industry-specific requirements (such as the Air Barrier Association of American's QEP Program for example)

Let our licensed professionals and building experts guide you for your projects, to help assure the projects are being installed in accordance with the design documents and to industry standards. With COVID-19, its becoming harder to control and manage our projects for quality assurance and ABB can partner with you to help manage this essential part of construction.

## Safety First

While safety has always been a high priority for ABB staff, we are now taking it more seriously than ever. Since we have been continuing to work on many essential projects during this crisis, we have had the opportunity to refined our jobsite safety guidelines with N-95 masks, gloves, distancing training, and other guidelines. And our staff have been formally trained in social distancing techniques for crowded jobsites. As soon as widespread testing becomes available, we intend to mandate proactively testing our employees for infection and anti-bodies. As a matter of corporate policy, our employees wear face masks during all face to face interaction per CDC/WHO recommendations.

While the situation is not ideal, we have found a way to maintain our high standard of care without compromising our staff or public health.



## In-House Expertise And Staff Resources

As mentioned, ABB has some of the most highly-trained construction monitors and building experts on staff. Our in-house staff of 200+ includes:

- Registered Architects
- Licensed Engineers—Structural, Mechanical, and Civil
- Certified Residential Building Inspectors (ICC)
- Certified EIFS Inspectors (CEI)
- Registered Roof Consultants (RRC)
- Registered Waterproofing Consultants (RWC)
- CETCO Certified Waterproofing Inspectors
- Registered Roof Observers (RRO)
- GCP Applied Technologies Preprufe Watertightness Warranty Inspectors
- Registered Building Envelope Consultants (RBEC)
- Registered Exterior Wall Consultants (REWC)



## Questions - Ask An Expert In Real-Time

Allana Buick & Bers' Mechanical Engineers, Enclosure Consultants, and Building Experts are here to answer your questions about ventilation, air circulation, and HVAC maintenance. Follow us on Twitter or visit our website for answers to your questions and discussions with other hospitality personnel and building experts.



## About Us

Allana Buick & Bers, Inc. is an architectural engineering and forensic consulting firm. We have over 34 years of experience making building enclosure, roofing, and waterproofing systems perform better. We have 16 office locations nation-wide ready to deliver a locally managed streamlined response for new construction, renovation, and repair projects.

- Palo Alto, California
- Oakland, California
- Sacramento, California
- Los Angeles, California
- Irvine, California
- San Diego, California
- Mesa, Arizona
- Maui, Hawaii
- Maui, Hawaii
- Las Vegas, Nevada
- Charlotte, N. Carolina (dba ABBAE, Inc.)
- Tulsa, Oklahoma
- Portland, Oregon
- Coppell, Texas
- Chesterfield, Virginia
- Seattle, Washington

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