



MFC NEWS

“Building Understanding”

MFC will find out the truth about buildings and answer the hard questions.

Summer 2015

Volume 10 Issue 2

What’s New at MFC...

Happy 25th Anniversary MFC!
April 1st marked 25 years MFC
Construction Consulting has
been in business.



Myles spoke at a Painting and
Decorating Contractors of America
Silicon Valley chapter meeting about
the Top 10 Waterproofing Errors and
how they relate to painters.

MFC now offers thermal infrared
imaging as part of our inspections and
water test. We recently added a Flir
Thermal Imaging camera to our tool
crib which will allow our Consultants to
find the source of water intrusion more
efficiently.

Quote of the Day

**“History is neither watchmaking
nor cabinet construction. It is an
endeavor toward better
understanding”**

~ Marc Bloch

Wisdom Corner

Considering the Berkeley Balcony Collapse

By Myles F. Corcoran

The tragedy in Berkeley this past
June 16th, the collapse of an eight
year old, fourth story balcony that
killed six of the thirteen young people
who fell to the concrete below, was
preventable.

We have six deaths and, at the time of
this writing, I read that five of those
who fell remain in the hospital. The
pain of the families and communities is
profound. May they have abundant
love and community to support them.
May the injured heal apace and fully.

The building industry and involved
communities can and will always learn
more about proper building. Studying
this failure may add nuance to our
knowledge, but we already know how to
prevent what happened in Berkeley.

MFC Tip of the Day

Imitation Is the Sincerest Form of Flattery

By Micah Rodler

As a designer of waterproofing elements, one focuses largely on how to keep water out of buildings. Another component of designing durable buildings is to build in redundant systems. Redundant waterproofing systems are not merely additional layers of the same system, but additional systems that address another system's possible failure.

For example, MFC promotes rainscreen cladding systems. Rainscreens systems provide an air space between the buildings exterior cladding and the water resistant membrane of the exterior wall assembly. The rainscreen system compliments the cladding system by allowing an avenue for moisture which has bypassed the cladding system.

When designed properly, the rainscreen system also provides good ventilation. An example of good ventilation is provided to us by nature, in the form of termite mounds which use natural air movement to provide ventilation within the mound. With openings at the top of the mounds and openings at the bottom, hot air rises through the openings at the top of the mounds which pulls cooler air into the mound.

Similarly, proper rainscreen design provides ventilation at top and bottom of the wall assembly.

This imitation of simple systems found in nature provides excellent drying of the weatherization systems. Which

extends the service life of water proofing components and the long term durability of your building.



Picture it!

Can you see the leak?



Now, can you see the leak?



A thermal imaging camera is great for detecting moisture quickly. Moist, porous materials typically will be cooler than dry ones. This fact allows the camera to show the user where moisture is hiding. The same can be done using traditional moisture meters, however the camera is much more efficient as it enables the user to view a broader area and takes a lot of the guesswork out of finding hidden leaks.



Balcony Collapse continued from page 1

This tragedy is a potent reminder of how important proper building techniques are.

Water/moisture control is not a new idea. There have been waterproofing specialists for many years. Maybe it is time that the building industry generally accept us as an integral team member.

I have been working with and repairing damaged buildings since January 1980. For over 35 years I have been hands, eyes and mind on what goes wrong, why and what to do about fixing and or preventing damages. My company and I are well founded in a building tradition going back far into history. We know how to build safe, long lived buildings.

In this age, we build primarily with wood. We can talk about concrete, stone and steel - especially the higher we build - but wood is what we build most of our structures with.

Wood is organic and fundamentally soft, even when it has been processed into plywood, oriented strand board (OSB), structural members or any other structural part. Molds and fungus devour wood which can disintegrate structural components in remarkably short time.

Admittedly I am less proud of my industry than I would like. There are far too many people in all facets of our industry that do not understand that keeping water, in all its forms, controlled can be quite technical and complex. Designs are often lacking in detail, misleading or wrong - where they exist at all. Manufacturer detailing is generic and it too is often

confusing, lacking in detail or both. The fine print can make "recommended" specifications very difficult to understand and sometimes do not make any sense. Never mind the requirements to adhere to special findings that are not provided (i.e. ANSI, ASTM, SMACNA, etc. etc.)



Photo taken after removing the perfectly fine stucco finish of a 3 year old structure in May 2015. This is the support frame for the floor above.

Too often the Construction team, the General Contractor and the Sub Contractors are expected to come up with the final design and implement it - regardless of the complexity.

I can, however, say with some pride that we (some of us - in any case), the design and construction industry, know how to look for problems in existing buildings and how to design repairs - and we know how to design and build so that these things do not happen in the first place.

The Building Code guides us to design and construct buildings that are safe for humans to live, play, eat, build and work in and that can withstand anticipated traumas, like fire, water and earthquakes, long enough for us to get out of them to safety. The Building

Code's primary purpose is, after all, to give us the minimum standards of construction.

MFC knows this is important work. MFC takes the Codes "minimum standards" approach as just that - the bare minimum. Our designs always exceed the bare minimums and are based on long experience with damaged buildings.

Water proofing design and oversight professionals, like us here at MFC, should, I believe, be considered just as important to a proper construction team as the Architect, the engineers and the builders.

Structural integrity (even in an earthquake) and the known fire resistance are ground zero in the Building Codes. These factors do get, on the whole, the level of oversight they deserve. Engineers are employed by municipalities to check the structural plans you submit to build and the Fire

Marshall checks the plans for proper fire resistance.

Building inspectors generally know how to check for basic structural plan adherence and fire resistance.

This has not been the case for water/moisture control. Details often either do not exist or are boiler plate abstractions. Builders, whose real job is to build what owners get designed, end up, time and again, being the water control system designers. On top of the master craft of organizing and performing large modern building projects involving dozens of tradespeople, they are expected to design it too.

Add to that the widespread lack of third party quality control. You can expect your municipal building inspector to catch that missing structural hold down or fire wall, but it is highly unlikely they will catch that the required pre waterproofing primer was improperly applied.

A close friend, who is a structural engineer, once told me that working with MFC had made him think how, it's no matter if the frame is built structurally sound if the wood is rotted away. One measure of a structure's fire resistance is how long it takes to burn through the wood parts. If those parts are dry rotted, there is no moisture or density remaining - just airy kindling. In both systems the safety equations no longer work when the wood is damaged.

With the experience of hundreds of construction defect matters and repair designs behind me, I know that I can not, from here, know exactly what went wrong nor say who I would think was responsible for the tragedy in Berkeley. I can, however, speak in wide



This is the opposite side of the same building, also on the 1st of two floors.

generalities from this distant vantage point: That balcony would not have collapsed if it had been properly built to common understandings about wood frame construction.

And please: **Don't blame the kids!** It is highly unlikely that 13 young people's combined weight was more than that balcony should have been designed to hold. There is, I believe, absolutely no possibility that the entire balcony would have fallen off of the building sans the water damage. If it were overweighted, it probably would have caused cracks along the grains of the cantilevered structural joists, more than likely causing the balcony to list downward, which would have alerted the kids to get the heck off of there.

In conclusion: If you own a building or spend a lot of time in one, consider having a moisture intrusion inspection. Such an inspection may not uncover every sub finish damage, but there are culprit assemblies that a trained professional will be aware of and know how to test and or advise on.

If you are thinking of building, the cost of good waterproofing detailing and trade education/oversight is a minimal percent of the entire cost. This especially relative to the cost of repairs where one small leak can end up costing millions of dollars in repairs, loss of use, cumbersome, grinding, emotionally draining, prolonged and very expensive legal disputes and most importantly, endangering users.



About MFC News

MFC News is the e-Newsletter published quarterly by the Editorial team at: Myles F. Corcoran Construction Consulting, Inc. (MFC) located in Santa Cruz, California. It is circulated to our colleagues in the construction and construction-related fields. Visit our website www.mfcbuild.com for more information and testimonials.

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