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Perils and Strategies in High Rise Litigation

I Who is Involved?

Big buildings come with big litigation exposure. There are a lot of players involved – general contractors, numerous subcontractors, developers, and insurers. But what is driving resolution these days?

II. Shift in WRAP Policies

Wrap-up insurance is a liability policy that serves as all-encompassing insurance that protects all contractors and subcontractors working on large projects costing over $10 million. The two types of wrap-up insurance are owner-controlled and contractor-controlled. Owner-controlled insurance is set up by the owner of a project for the benefit of the builder or contractor to cover all listed contractors. The general contractor, meanwhile, may use a contractor-controlled insurance program to extend coverage to all the contractors and subcontractors signed up on the project.

In the world of WRAP policies, business risk exclusions are being watered down to the point where the merits of the alleged defects and damages more often rule the day.

It is also important to be conscience of taking advantage of all risk transfers, which means tendering early and often.

III. Problems

Plaintiffs' attorneys describe what they say was a pattern of conduct by suppliers of CPVC tubing and metal pipe components to suppress internal company findings of incompatibility between the corrosion inhibitors applied to the steel pipes and the plastic resins in the CPVC components of the sprinkler systems. Citing internal company emails from a CPVC pipe manufacturer to a maker or steel pipes, the plaintiffs say that CPVC maker's chemists knew in 2007 that the steel pipe shouldn't be connected to the plastic pipe because of likely damage

to the plastic. According to the complaint, pipes made of 'chlorinated polyvinyl chloride' or CPVC, were popular in fire sprinkler systems during a nationwide building boom that started around 2005. But the pipes contain a resin that breaks down easily when combined with other common building products.

Plaintiff's firms in South Florida are asking for entire rip and tears of high rises due to perceived incompatibilities in the steel/CPVC systems.

Post tensioning is a technique for reinforcing concrete with steel cables, typically referred to as tendons. Post-tensioning tendons, which are high-strength steel cables inside plastic sheathing, are positioned in the forms before the concrete is placed. Once the concrete has gained strength and before the service loads are applied, the cables are tensioned with jacks and anchored against the outer edges of the concrete. The open pockets at the stressing anchors are typically filled with nonshrink grout. Post tensioning is commonly used in construction of buildings and parking garages. The benefits include the following: allows for longer spans than conventionally reinforced concrete, thinner slabs, fewer beams and less reinforcing steel bars. Similar to other structural building components in service and exposed to the elements, post tensioned concrete slabs need to be maintained, inspected and repaired

In typical post tension buildings with balconies, the balcony slab is an extension of the concrete floor slab and usually cantilevered with a guardrail or parapet on the outer edge. The balcony slabs are exterior building components and are subjected to weather, temperature fluctuations, UV exposure, air pollutants and foot traffic.

Post-Tensioned concrete is a very common type of concrete structure for parking garages today and can be constructed below grade or above grade. The system can be configured in short-span, two-way slabs or in long-span, beam and slab systems. They are typically supported on concrete columns and perimeter foundation walls. Protection to the slab surface can be provided by a traffic bearing coating or penetrating sealer. The garage slabs are exterior building components and are subjected to weather, temperature fluctuations, air pollutants, vehicular traffic, snow plows and deicing salts.

Many high rises are designed with multiple chillers that get their condenser water from a single large tower water system. During the summer months, when the comfort cooling demand is high, there is a regular flow of tower water through all of the chillers. The tower system is treated with a corrosion inhibitor, an oxidizing biocide and a non-oxidizing biocide that are designed to control corrosion and bacterial growth in the system.

During the cooler months, it is often the case, that only a single chiller is needed to provide comfort cooling to the building. This may leave one or more chillers idle for long periods of time. In most cases, there is a motorized valve, on the inlet side of the chillers that interrupts the flow of tower water to the chillers that are not running.

The chillers that are offline, see no flow, and become a large dead leg. Because there is no regular flow of water through these chillers, no inhibitor or biocide will be introduced. The

lack of chemicals will accelerate corrosion and bacterial growth inside the tube bundles of these machines. A secondary problem associated with this condition is the potential for bacterial growth (Legionella) inside the idle chillers that may migrate into the bulk tower water.

What is envelope failure? In many of the cases investigated around the country, failure comes in the form of moisture that penetrates the building exterior or is trapped within the envelope system during construction or occupancy. Moisture intrusion either leads to mold growth or slowly degrades the integrity of the envelope system to the point of structural failure. In most cases, rain penetration is the primary source of moisture intrusion

Design deficiencies. Architects occasionally specify materials or design systems that are inappropriate for their intended use. Common mistakes include specifying materials that are incompatible with materials with which they come into contact or have inadequate performance criteria for thermal movement, structural capacity, or water penetration resistance. Issues also arise when subcontractors try to reduce the weight, size, or amount of building envelope components (aluminum, glass, sealants, flashing, etc.) required on a project. This can lead to inadequate performance or capacity of the materials specified.

Material failure. It's also common for properly specified materials to fail to meet the published performance levels. This could be a result of errors in the manufacturing, handling, or storing of the product or components within the product. Common examples include degrading sealant adhesion, laminated glass delamination, and metal fatigue.

Poor workmanship. During construction booms, the problem of poor workmanship is exasperated as a result of having many inexperienced, unsupervised, and untrained personnel working on projects. It is common to find building envelope components not installed per the manufacturing specifications.

Acts of nature. Even with flawless installations, bad things can happen to good work when environmental conditions exceed those that were anticipated during design. The effects of hurricane-force wind loads, driving rain, and extreme temperature fluctuations can overload a properly designed and constructed building envelope, causing damage to the system and making it vulnerable to further deterioration or failure. While failures of this type cannot be stopped, many can be prevented through routine inspection and maintenance.

Soil degrading is also a significant problem for high rise condominiums, both from the standpoint of the building itself (see Millennium tower in San Francisco) to adjacent property claims in tightly-condensed residential areas.

IV. Extrapolation

It is impossible for any association to afford to pay for its experts to invasively test every inch of a building. That is why courts allow parties to use limited invasive testing done by experts to support an opinion that the same conditions found in the limited testing exist

everywhere on the buildings.

The trial Judge is the gatekeeper of the evidence the jury gets to hear at trial. As a general matter, the use and admissibility of expert testimony based on extrapolation supporting claims of damages caused by design and construction deficiencies is based on an evaluation by the Judge of:

1. The randomness of the sample
2. The size of the sample

Certain factors may be considered to determine the reliability of expert testimony: (1) whether the theory or technique at issue can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) whether there is a known or potential rate of error; (4) whether standards controlling the technique's operation exist and are maintained; and (5) whether the technique is generally accepted within the relevant scientific community.

The focus under the Daubert standard, of course, must be solely on the expert's principles and methodology, not on the conclusions that they generate. But conclusions and methodology a One key tool plaintiffs use in construction defect cases to increase the amount of damages claims is extrapolating the findings from a small sample set to the entire building or project. The defense can challenge this attempt to extrapolate if it is prepared. This approach to challenging a portion of the experts' opinions can serve to eviscerate the overall claim by the plaintiff or, at times, discredit the plaintiff's expert.

The defense experts need to be able to critically analyze and apply reverse logic to evaluate the opposing expert's sample size(s). Buildings vary by type and are creations designed by people; thus, no set formula or statistical algorithm may be appropriate. There is no cookie-cutter equation for "appropriate sample size" for testing a suspected building defect.

Investigation of construction defects inherently involves multiple levels of sample size determination. However, this does not equate with what makes the evidence sufficiently reliable upon which to allow the trier of fact to accept extrapolation from the sample set to the full universe of the project.

Determining the sample size and how that sample set is applied to the greater universe requires a detailed analysis. For example, if you have a sample set of 33% of windows, what is that comprised of? Are there different types of windows, different window assemblies in different building types? Were there different designs for each building type? What about what crew performed the work? Further, what means and methods of selection, testing and evaluation of the sample size were employed? Thus, the only way to determine, and thus challenge, the significance of the size of a sample, and multiple levels of subsamples, is through careful analysis of a qualified expert who is intimately familiar with the building type(s) being investigated.

D.R. Horton v. Heron's Landing is instructive. There, Heron's Landing Condominium Association filed a complaint against D.R. Horton, Inc.-Jacksonville, the developer and general contractor of the project. The project consisted of 240 residential units in 20 buildings. The Association alleged D.R. Horton violated the Florida Building Code, breached warranties and was negligent in its construction of the project. Prior to trial, D.R. Horton filed a motion in limine, seeking to preclude the testimony of the Association's construction defect expert. In the expert's report, it was recommended that all of the stucco on the project be replaced based on a limited number of stucco samples. D.R. Horton alleged the expert should not be allowed to testify about the defects or repair recommendations as his opinions were inherently unreliable and based on improper extrapolation.

The Association's expert testified that he had done "hundreds of building condition assessments and building condition surveys over the years." The expert also testified that he recommended all 220,000 sq. ft. of stucco needed to be replaced based upon "200 something feet of testing." The expert explained that his opinion was formed based on "[a] lot of visual observation, a lot of indications of problematic conditions with the stucco that we have seen many times on other projects that have led to a need to remove those and the unpredictability of where water actually comes in…" He also testified that a professional engineer performed a peer review of his report for accuracy.

The trial court held the extrapolation by the Association's expert was "scientifically reliable," and the case went up on appeal to the 1st DCA in Florida. The appellate court upheld the trial court, ruling the expert used a scientifically reliable and peer-reviewed methodology that was the industry standard and neither new nor novel.

At trial, D.R. Horton had moved for a directed verdict on two causes of action: violation of the Florida Building Code and breach of the warranty of habitability, both of which were denied. On appeal, D.R. Horton argued the Association failed to demonstrate actual damage, as required for a claim of violation of the Florida building code, per Section 553.84, Florida Statutes. The appellate court disagreed, ruling the Association's expert had testified regarding defects and had opined those defects needed to be remedied in order to avoid additional loss and damage. The appellate court upheld the denial of the motion for directed verdict, in essence upholding the use of speculative damages as a basis for the award of damages.

D.R. Horton also argued on appeal that the Association failed to establish a breach of the implied warranty of habitability, as there was no evidence that any of the units were uninhabitable. D.R. Horton argued that, based on the Supreme Court's ruling in *Maronda Homes, Inc. of Fla. v. Lakeview Reserve Homeowners Ass'n,* 127 So. 3d 1258, 1268 (Fla. 2013), as no units were uninhabitable, no breach of the warranty of habitability had been proven. The appellate court again disagreed, noting that, although the defects did not force the homeowners to abandon their homes, there was testimony the units did not meet the ordinary, normal standards reasonably expected of living quarters of comparable kind and quality, which was enough to support the claim.

This ruling out of Florida's 1st DCA is a major blow to defendants in construction defect cases. Expert witness opinions, which are based on opinion more than fact, will now be judged as "scientifically reliable." Coupled with the recent move in Florida from *Daubert* to the *Frye* standard, the bar for allowable expert testimony is nonexistant. We do anticipate this ruling will be appealed, but in the meantime, working toward an early resolution of construction defect cases is more important than ever before.

V. Affirmative Defenses

There is an affirmative defense referred to as betterment in construction defect cases. This is a defense raised to challenge the amount of damages incurred by the plaintiff when the plaintiff performs repairs better than the original design / contract documents. *See Grossman v. Sea Towers, Ltd*., 513 So.2d 686, 688 (Fla. 3d DCA 1987) ("It is significant on this point that neither the architectural specifications nor the structural design was deficient for the original intended purpose. The proper measure of damages, therefore, should have been the amount necessary to restore the deck to its original condition….").

The concept of betterment has long been used by defendants in cases involving defective design or construction to limit the damages awarded to a plaintiff. The theory behind betterment is that: if in [the] course of making repairs [an] owner adopts a more expensive design, recovery should be limited to what would have been the reasonable cost of repair according to original design. Betterment is often raised as an affirmative defense, requiring a defendant to prove that the plaintiff has received a good or service that is superior to that for which the plaintiff originally contracted. A recent South Florida case seems, at first blush, to suggest the burden of establishing the value of betterments may fall to the plaintiff, although a closer reading indicates the decision is likely to have limited applicability.

In *Magnum Construction Management Corp. v. The City of Miami Beach,* the Third District Court of Appeal was asked to review the damages award to the City for construction defects associated with the redesign and improvement of a park. The completed project contained landscaping deficiencies, along with other "minor defects" in the playground's construction. After a unilateral audit, and without providing the contractor its contractually required opportunity to cure the defects, the City "removed, redesigned, and replaced the playground in its entirety." It did so despite no recommendation by the City's own expert to perform such work. During the bench trial, the "only measure of damages provided by the City was the costs associated with the planning, permitting, and construction of a park that is fundamentally different from the one it contracted with [the contractor] to build."

Thereafter, the trial court found the City's complete removal and replacement of the playground to be excessive, and the court awarded the City approximately $1.3 million of its claimed $3 million in damages. The trial court deemed the difference between the two "a 'betterment,' which the trial court defined as aspects of the City's remediation plan which improved upon and differed significantly from the original designs and specifications in the contract documents." On review, the appellate court held not only that the City's failure to provide the contractor with an opportunity to take corrective action per the contract precluded

liability, but found the trial court's determination of damages based on the exclusion of betterment costs "speculative," because "the City ha[d] not cited to any evidence and [there was] no evidence in the record as to the **value** of the betterments . . . ."

Defendants in construction defect cases could argue that the Third District Court of Appeal in *Magnum* viewed the valuation of betterment as a burden for the plaintiff to satisfy as part of its proof of damages. However, a closer reading reveals that the case does not expressly speak to the comparative burdens of proof, and the court was not attempting to articulate this as part of any fundamental re-alignment of the burden to prove the existence and value of betterment in construction defect cases, generally.

In most cases, the issue of whether the remediation undertaken by a plaintiff is a betterment is hotly disputed. Both parties are likely to present at least some evidence regarding whether the repairs undertaken were reasonable and appropriate. Such was not the case in *Magnum*. The City undertook a complete removal and replacement using a fundamentally different design without any testimony that it was required. The defendants, in turn, proffered testimony that all of the defects in the playground could have been repaired. Thus, the trial court concluded that the City's costs did not represent "the reasonable cost of construction and completion **in accordance with the contract**" and that the difference between the City's costs and the correct measure of damages was a "betterment."

What the appellate court appears to take issue with is not the trial court's finding as to the *existence* of a betterment, but its attempt to calculate the *value* of that betterment to determine the City's damages in the absence of any evidence of that value. It found a complete absence of evidence to support the trial court's valuation of the betterment. Thus, defendants in construction defect cases may attempt to use the *Magnum* court's decision to require a plaintiff to present evidence that its alleged damages are reasonable and appropriate in view of the original contract, and that this is all the more critical when the repair is fundamentally different from the original design. That being said, the decision in *Magnum* does not suggest any broader shifting of the burden for proving the value of a betterment to the plaintiff in all cases.