Construction Defects from the Developer/GC Perspective

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Construction Defects from the Developer/GC Perspective

INTRODUCTION

Construction Defect Litigation from the Developer/GC Perspective is a series of case studies in successful planning, analysis and execution of expert work on behalf of developers and general contractors. Construction defect litigation can be expensive, confusing and long lasting, but it doesn't have to be. Through this presentation, we will break down the process from the Developer/GC point of view, and provide approaches and alternatives in construction defect litigation.

This Webinar will demonstrate how developer and general contractor litigation should be investigated and executed from an expert consultant perspective, using the most current ASTM standards and science-based building performance analysis. In preparing for trial, you want the highest level of professionalism in conducting building performance investigations. Investigations should involve conformance with the best standards of practice, a written investigation plan, random selection protocol for inspection and testing locations so the data is not biased, a comparison of performance to perfection, realistic repair estimates, and allocations to trade contractors. This program will include real-life case studies applying various approaches to construction defect litigation matters and examples of good work.

PROGRAM OUTLINE

1. Introduction
2. Preliminary Analysis
3. Analysis
4. Detailed Analysis
5. Allocation & Mediation
6. Deposition & Trial
7. Conclusion

LEARNING OBJECTIVES

- Gain a big-picture perspective on handling construction defect litigation from a developer or general contractor perspective.
- Review Case Studies of numerous project types.
- Look at actual project deliverables.

BACK-UP MATERIALS

1. Common Construction Defects 1998
2. Managing Expert Costs 2008
3. Managing Construction Quality 2009
4. Level 5 Estimating 2009
5. Portfolio Management of Construction Claims 2011
6. SB 800 Introduction and Summary: CA Builders Right To Repair Law 2011
7. Everybody Has A Plan 2015

PROGRAM CONTENTS


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October 28, 2015

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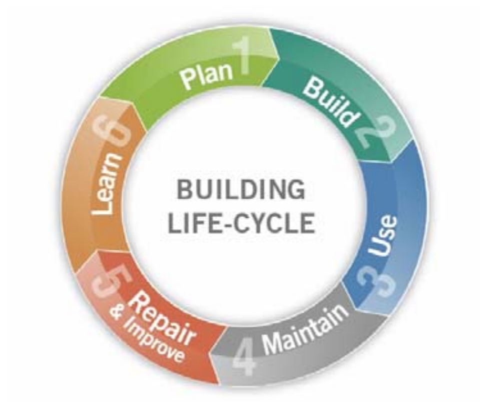

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- Construction Management
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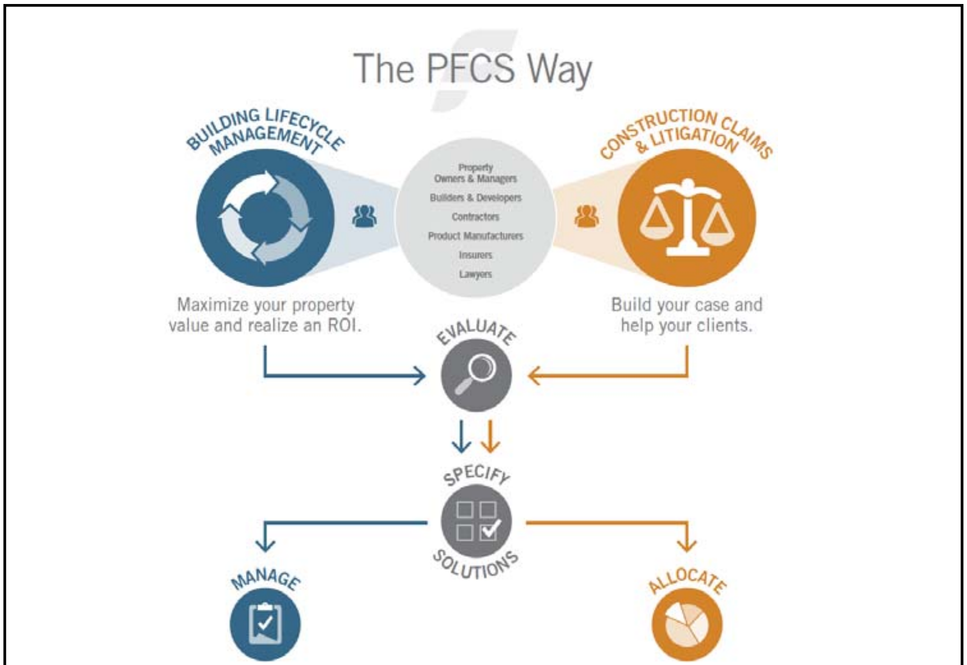

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Evaluate Performance: We perform structured building inspection and testing evaluations, exceeding the highest standards.

Specify Solutions: We analyze, report, make recommendations and compose specifications and estimates for construction, maintenance & repairs.

BLM OR LITIGATION?

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Allocate Responsibility: For insurance and legal clients we use our expertise in evaluating, specifying and managing construction to compare what happened in problem projects to what should have. We apply professional judgment to allocate responsibility.

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1. INTRODUCTION

1. INTRODUCTION

Introduction

- Presenter Information
- Webinar Materials
- CE Certificates
- Feedback
- Learning Objectives
- Program Introduction Key Points / Summary
- Resources

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Webinar Materials

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PFCS Webinar 1/30/2014: Building Life Cycle Management

Seminar Information

Event Date	01/30/2014
Event Time	10:00am
Location	Online via GoToWebinar

Video

There is no video version of this presentation available.

Attachments / Backup Materials

File

Backup Materials

CE CERTIFICATES WILL BE SENT OUT WITHIN 3 BUSINESS DAYS

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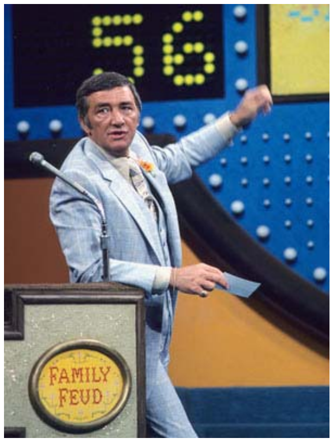

You will receive a survey link immediately following the webinar. We put a lot of effort into providing these programs free of charge, we just ask that you take a few seconds to leave your feedback on today's presentation

Learning Objectives

- Gain a big-picture perspective on handling construction defect litigation from a developer or general contractor perspective.
- Review Case Studies of numerous project types.
- Look at actual project deliverables.

Program Introduction

WHY THIS IS IMPORTANT

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Key Points

DISCUSSION

- How to present in an hour?
- Consistency across project types?
- Building Lifecycle Management
- Pete = Crazy Person
- ROI: Return on Investment
- What's the goal? What we have. What we have done. What we think. What we recommend.

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1. INTRODUCTION

PFCS Resources

ARTICLES & WHITEPAPERS

• Common Construction Defects	1998
• New Developments in CA Construction Law	2003
• DBSKCV Construction Management Method	2006
• Solving Building Problems	2008
• Managing Expert Work & Costs	2008
• Managing Construction Quality	2009
• Level 5 Estimating	2009
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• Everybody Has A Plan	2015

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1. INTRODUCTION

PFCS Resources

SEMINARS & WEBINARS

• Construction Contracts, Risks & Insurance	11/13/2014
• Common Construction Defects	02/23/2012
• Construction 101	01/29/2015
• Construction Defect Life Cycle	09/29/2011
• Construction Defects from the Plaintiff Perspective	08/27/2015
• Construction Document Literacy	03/19/2015
• Defect Litigation Investigations for Developers and GCs	09/13/2010

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Common Construction Defects

Since the early 1990's the Southern California building industry has been engulfed in a bitter fight. Spawned by substandard construction during the region's 1980's building boom, construction defect litigation has become a full fledged "industry," with many architects, engineers, and former building contractors now working full time at construction defect consulting. Attorneys, acting as advocates for homeowners, hire these experts in the effort to prove that shoddy workmanship is causing new homes to rapidly deteriorate. Meanwhile, the home building industry, put on the defensive, is claiming that the real problem is unscrupulous attorneys who are feeding off the media coverage and exploiting the legal system. The reality is probably somewhere in between. Regardless, residential construction in Southern California has never been so thoroughly scrutinized.

A guided tour through some of the Most common errors and omissions Fueling the litigation frenzy in the California building industry

Figure 1. Nails that miss the truss – a result of sloppy work with a pneumatic nailer – void the strength of the roof diaphragm.

Figure 2. The plywood on this interior shear wall should have been carried all the way to the roof diaphragm.

Figure 3. This shear plywood falls short of the shear wall posts on the right and left, and is attached with too few nails.

As a licensed GC and construction consultant, I wanted to see for myself the kinds of problems that were being uncovered. After reviewing more than 20 typical repair estimates from past and current construction litigation cases, I compiled a list of the kinds of defects that appeared most often (see "Most Common Defects," chart). The purpose of this article is not to cover every possible defect, but to illustrate some of the most common ones that I see. In most cases, the cost of doing the job right in the first place is far less than any corrective measure. And if you happen to build in an area where defect litigation is rampant, keep in mind that a seemingly minor surface defect could – given an unhappy client – result in an inspection of your job that turns up all sorts of code violations that had previously gone unnoticed.

Structural & Framing Defects

Once an inspection gets rolling for some other reason, framing and structural problems are almost always uncovered.

Most of Southern California is located in the most severe seismic zone, meaning most homes are designed by engineers. The builder must strictly follow the engineers specifications, otherwise the construction can be considered defective – even if there is no manifest damage.

Diaphragms and Shear Walls

Failure to follow the nailing requirements for shear walls and diaphragms is a common defect. Many builders temporarily set the plywood in place with a few hand-driven nails, then return later to finish the nailing with a gun. Unfortunately, we sometimes find that the second step in the process has been forgotten and the finish materials are installed over inadequately attached plywood. Another typical mistake is the substitution of box nails or sinkers for the specified common nails, or use of a smaller size nail. Figure 1 shows an example of just plain sloppy nailing.

A more subtle but common problem is failure to carry an interior shear wall all the way to the roof diaphragm down to the foundation.

Sometimes the shear plywood does

not extend across the entire width of the shear wall area and thus doesn't reach the post and hold-down that make the system complete (Figure 3). Other times the plywood reaches only the bottom of the two top plates (Figure 4), interrupting vertical continuity at the critical connection between the top of the shear wall and the floor or roof diaphragm above. This can happen when the plywood is installed while walls are framed on the deck and the double top plate is not yet in place. A simple fix is to install a Simpson A35F (flat) or similar metal connector, but the process is made more difficult because finishes must be removed or the work must be performed in a tight attic space.

Connector Problems

Another common mistake occurs when the hold-downs are attached to the wrong members, creating a shorter shear wall than the plans called for. This is important because the uplift load on the hold-downs increases exponentially as the hold-downs get closer together. When the hold-downs are placed too close together, the uplift loads will exceed the hold-down's capacity, creating the potential for catastrophic failure in an earthquake or hurricane (Figure5).

Improper installation of joist and beam hangers is also quite common (Figure 6). These metal connectors frequently have missing nails and are often found mangled and twisted out of shape, having been cut or bent to fit an application never intended by the manufacturer or structural designer.

As with most structural defects, the repair is simple if the area is accessible. Unfortunately, all too often the repair involves removing expensive finishes to access the framing.

Roofing

Along with leaky windows, roofing problems are at the root of more construction litigation in Southern California than any other defect. Every roof detail – hips, valleys, ridges, the rake, the eaves, head walls, and so forth – is a potential problem area. Leaks at penetrations are common. Often the

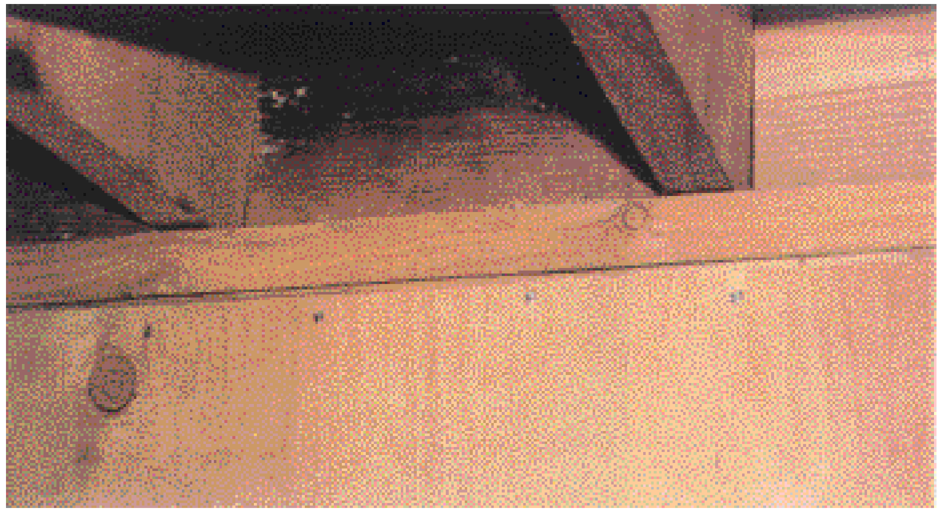


Figure 4. This shear plywood should have extended to the top of the double top plate – a mistake that can be remedied with the addition of metal connectors across the two plates.

Figure 5. These shear wall hold-downs are too close together, making the shear wall practically useless in resisting over turning forces.

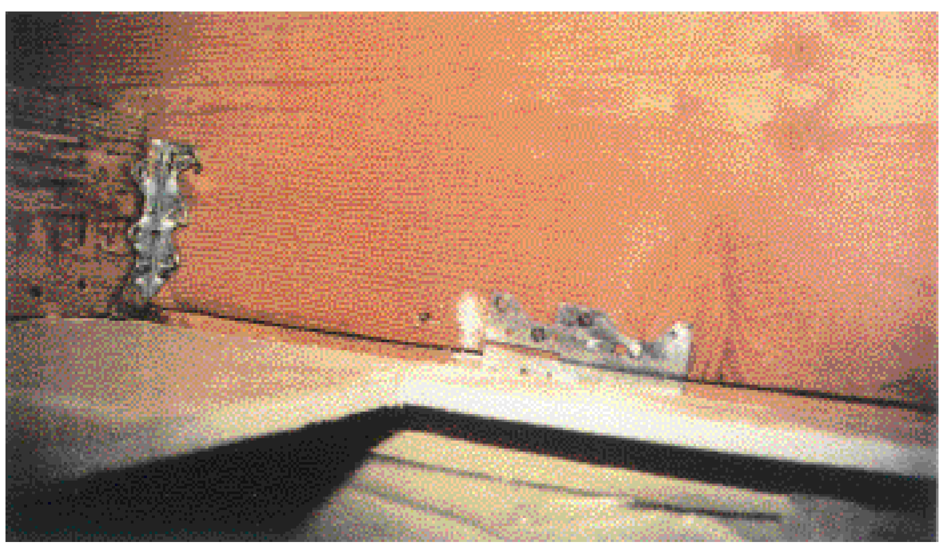


Figure 6. An inspection made through a hole cut in the ceiling reveals that the joist hanger at left is bent and missing nails.

Figure 7. Instead of folding down over the edge, the felt paper on this rake overhang was cut flush with the top of the sheathing, allowing rain water to wet the surface of the roof deck.

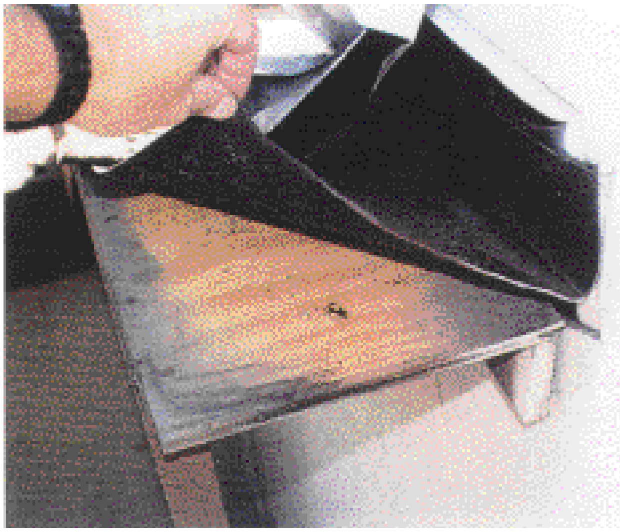
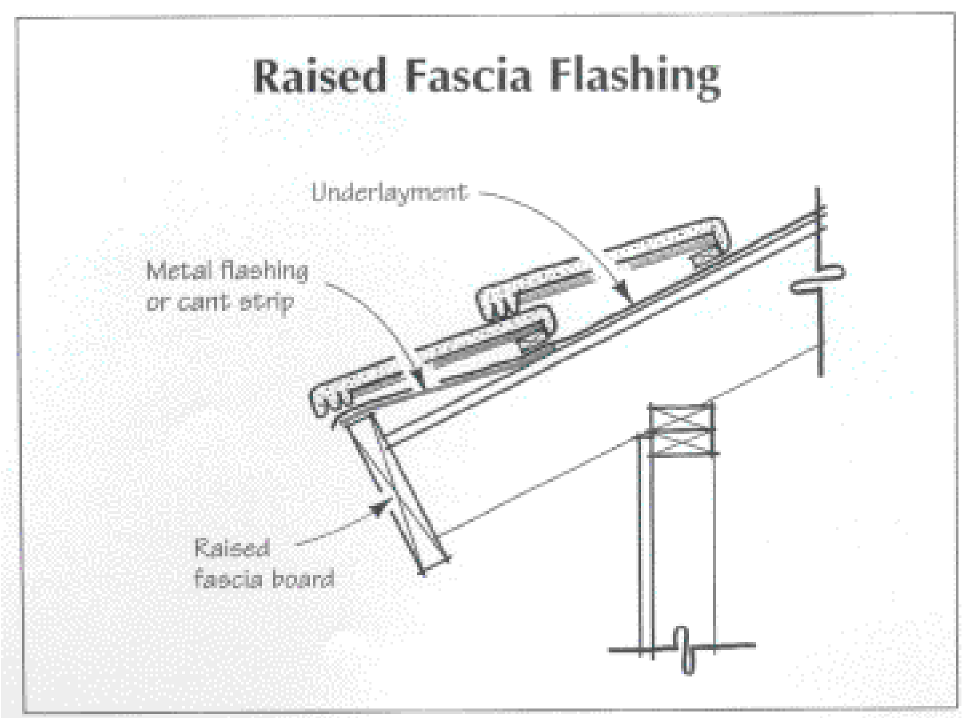


Figure 8. A raised fascia board (illustration) requires a heavy metal flashing or cant strip to ensure that runoff passes over the edge. Otherwise, water will pond, as in the photo, resulting in leaks and rot in the eaves.



roofing felt is not extended over the top of the base flashing in weatherboard fashion or is not extended far enough. Sometimes the base flashing is installed with roofing mastic as the primary water-shedding mechanism. The mastic will usually not last for the entire life expectancy of the roof; in fact, it often fails soon after installation.

Rake & Eaves Details

One of the most common mistakes I see is the failure of the roofer to turn down the 30-lb. felt underlayment to cover the edge of the decking at the rake. Instead, the felt is cut flush with the top edge of the roof sheathing or barge rafter. Any water that makes its way past the rake tiles has an easy path onto the wood deck (Figure 7). Unfortunately, like most roofing defects, this cannot be readily inspected on a completed roof because the rake tiles cover the edge of the roof.

Another common mistake involves a standard tile roof detail: the raised fascia board. The detail is acceptable, but accommodation must be made for the void that is created behind the fascia board by installing a sheet metal flashing or other anti-ponding device. Many roofing contractors omit this flashing, and the underlayment soon begins to sag and pond water, which makes its way behind the fascia and into the eaves (Figure 8).

Windows

There seems to be a problem in the minds of some window installers and other subs whose work interacts with window flashing: the fundamental concept that water runs down hill has not been firmly established. Keeping this theory in mind is the surest resolution to the majority of both window and roofing leaks.

A classic problem is the "reverse lap" at the sill flashing paper, which should lap over the building paper below. The kraft flashing paper is put on first and the building paper is then lapped over (Figure 9). This allows water to easily enter the interior of the building envelope once it passes the exterior finish. Occasionally I'll see an instance where a worker made an effort to get the building paper under the sill flashing paper but failed to detail the corner junction correctly (Figure 10). These mistakes can be repaired only by removing the exterior finish and reinstalling the building paper to properly integrate with the window flashing paper.

Painting Wood Windows

Wood windows are the exception in Southern California construction (most are aluminum), which may be the reason they are often not protected adequately from the harmful effects of moisture and temperature extremes. Although most wood windows come with an exterior primer from the factory, all components and all edges should be painted as soon as possible. When wood windows are not properly painted on all surfaces, the unfinished surfaces will take on moisture at a higher rated than the painted areas, creating uneven expansion and contraction and the possibility of rot (Figure 11). A common manifestation of damage is when the windows fail to operate properly, especially after swift changes in the weather.

Poorly Flashed Penetrations in Stucco

Stucco is the most popular exterior finish in Southern California, and because of this, most water intrusion issues, with the exception of roof leaks, are inevitably associated with stucco in some way. As with window installation, the areas where another trade must interact with the stucco are the source of most of the problems. There is a remarkable shortage of detailed information regarding the flashing and intersection details that cause so many of the problems encountered in construction defect litigation. Most installation specifications and code documents make general statements about the application of plaster or proper cement mixes but do not make detailed recommendations for waterproofing penetrations other than windows, even though they plainly state that "stucco plaster should not be con-

Most Common Defects

Rank by No. of Instances	Defect Description	Avg.%of TotalEstimates
1	Structural/Rough Carpentry	14.7%
2	Roofing	8.4%
3	Windows	7.8%
4	Plumbing	5.4%
5	HVAC	2.9%
6	Lath & Plaster (Stucco)	3.5%
7	Fireplaces & Chimneys	0.9%
8	Waterproof Decks	3.4%
9	Fire-Resistive Assemblies	7.5%
10	Civil/Site Drainage/Fine Grading	5.6%

The chart lists the top ten defect items, ranked by the number of instances cited in the repair estimates reviewed by the author. The number in the right hand column is the average percentage by item of the total estimated cost.

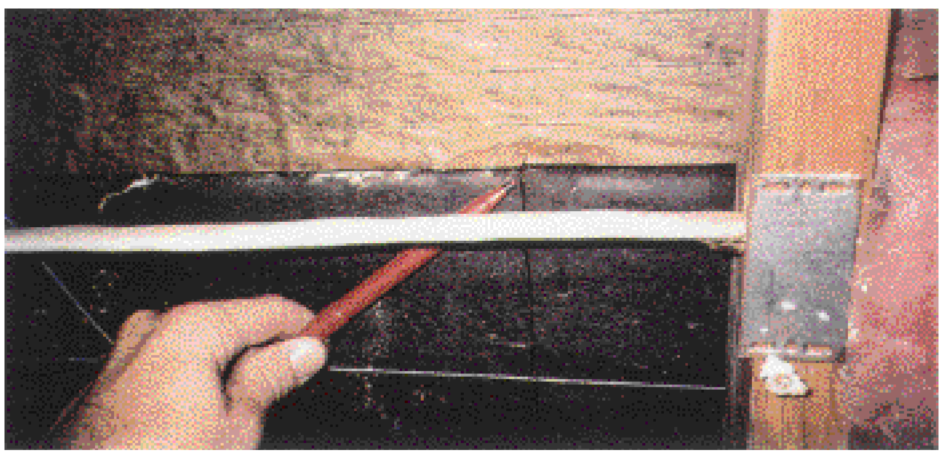


Figure 9. The building paper below a window must be tucked below the flashing paper – a detail often botched, as in the top photo. Above is a reverse lap seen from the inside of the wall cavity.

Figure 10. Here the building paper is installed under the flashing paper at the bottom of the window, but not on the side – leaving a vulnerable corner where the flashing paper has been cut.

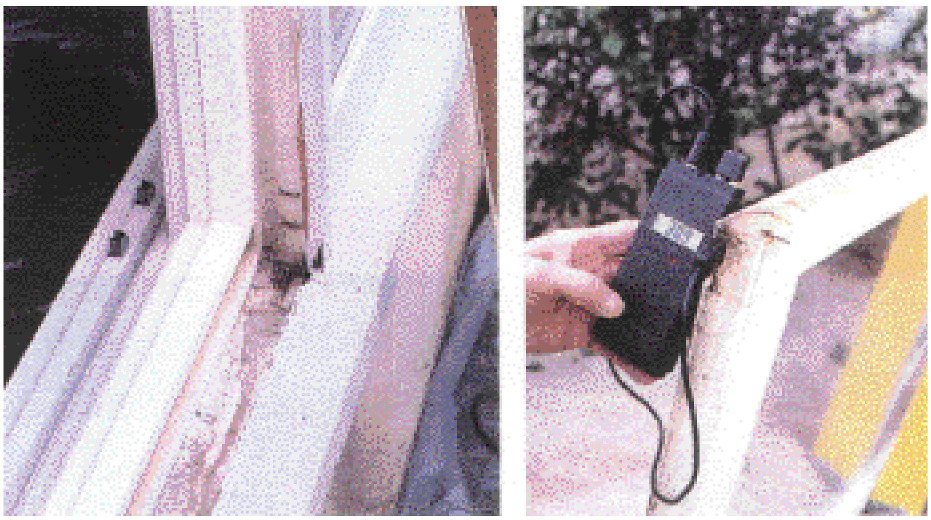


Figure 11. Wood windows should be painted on all raw wood surfaces. Otherwise, they will pick up excessive moisture (as the moisture meter reading in the photo at right shows), causing them to swell or even rot.

Figure 12. Framing protrusions, such as handrails (left) and cantilevered joists (right), are difficult to flash properly, inevitably leading to moisture intrusion, cracked stucco, and decay in the structure below.

sidered waterproof."

A condition that frequently results in failure is where a deck handrail or cantilevered joist passes through the stucco skin to the framing below (Figure 12). These intersections are difficult to flash and the necessary coordination between the trades is usually lacking. The best idea is to avoid these protrusions altogether. Instead, frame the deck with four posts from the ground and stop the handrail shy of the building.

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Buried Weep Screed

Because a traditional stucco exterior is not "waterproof," some accommodation must be made to allow moisture to escape. The Uniform Building Code mandates the installation of a galvanized steel weep screed at the base of the wall (Figure 13). The screed is nailed to the sill plate, and its upper leg is covered by the building paper. This creates a neat and clean termination for the plaster in addition to allowing the escape of moisture that has found its way behind the stucco.

Unfortunately, all too often the screed is buried behind a patio slab or concrete walk that gets installed after the stucco contractor has left – again, a problem in coordination and planning. When this happens moisture can't escape, causing the stucco to deteriorate and frequently leading to rot in the sheathing and framing.

Stucco Cracks

Stucco cracking is one of the most common homeowner complaints (Figure 14). In part, this is a matter of education: Homeowners should be told to expect minor cracks as the stucco shrinks. But it's also a matter of workmanship. Many cracks could be avoided by paying attention to control joints, proper attachment of lath, allowing enough time between coats, and moist curing.

Some industry experts recommend that any cracks 1/32 inch or wider should get some type of aesthetic repair, especially in smooth finished stucco. On the other hand, NAHB's manual, Quality Standards for the Professional Remodeler, allows a gaping 1/8 inch. Whatever your standard, it's best to be up front with the client and establish realistic expectations early in the process.

The repairs for non structural stucco cracks might involve applying Thurolastic knife-grade filler and a stucco fog coat over the entire wall plane, using a brush-on elastomeric sealant feathered to match, or dusting in a matching color coat and allowing the moist night air to cure it.

Waterproof Deck Problems

Waterproof decks are only eighth on the list of defects, probably because they're not found in every residence. But whenever I find them on 1980s mass produced housing that's involved in litigation (including condos and single family tracts), these decks seem to always have problems. Many builders have realized the practical difficulty of waterproofing this type of construction, and are now avoiding it altogether. If you continue to build waterproof decks, include as few penetrations as possible and strictly follow the decking manufacturer's installation directions.

The photo at the beginning of the article shows a poorly flashed post penetration. The unsealed flashing acted more like a funnel, sending the water right into the framing and keeping it

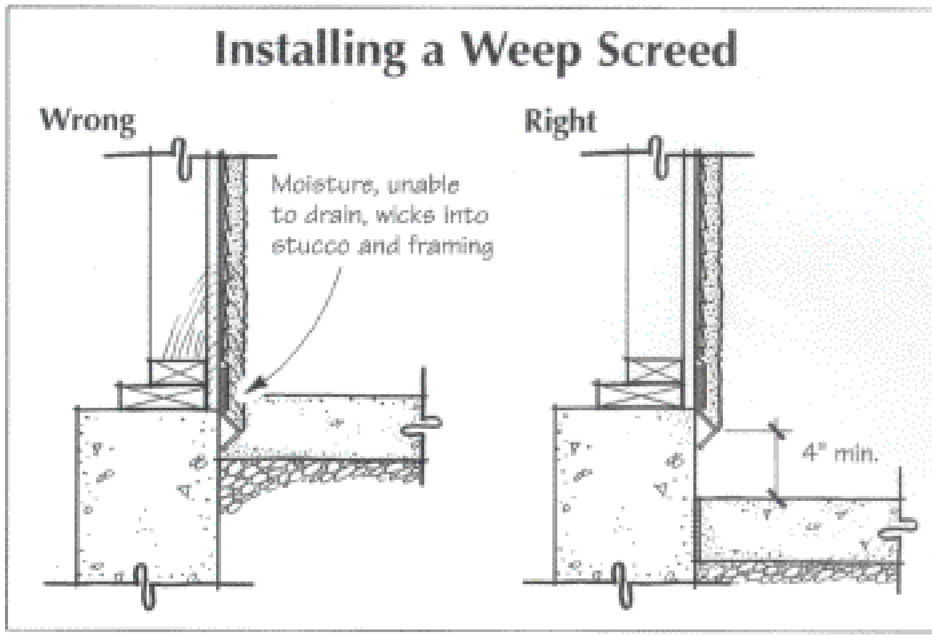


Figure 13. The stucco at the bottom of this wall (photo, top) should have been terminated with a weep screed above grade rather than being buried behind an outdoor patio slab.

Figure 14. Stucco cracking is one of the most common customer complaints. Tight surface cracks are normal in stucco and can usually be repaired. With quality workmanship, larger cracks can be avoided.

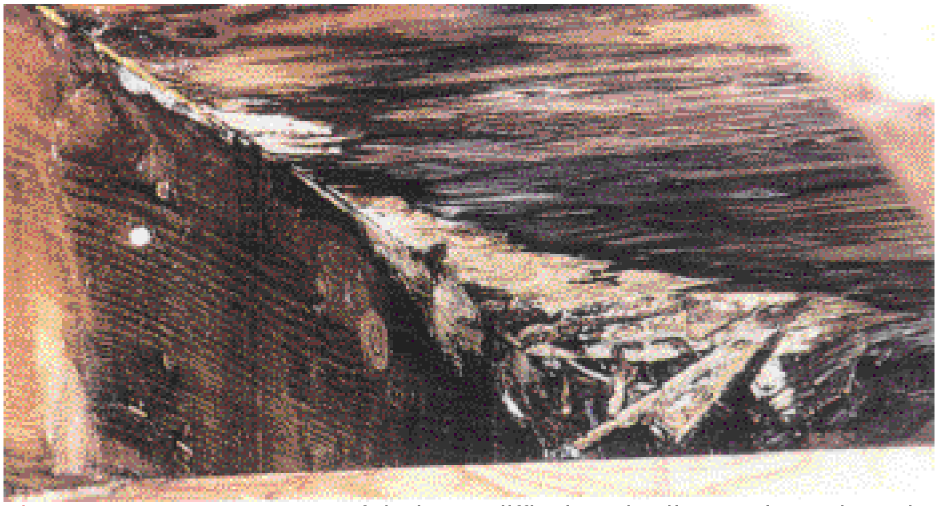


Figure 15. Because waterproof decks are difficult to detail properly, rotting substructrue is a common defect.

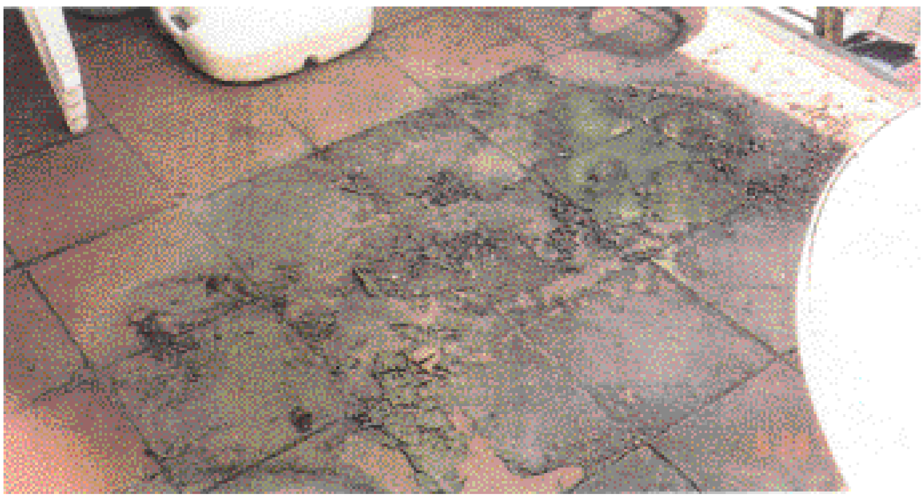


Figure 16. Besides ruining the finish surface, ponding on waterproof decks also leads to deterioration of the framing below.

Figure 17. If hidden by finish surfaces, a leaky toilet connection can go undetected until structural decay sets in.

there, where it could do the kind of damage evident in Figure 15. Ponding of water on waterproof decks is another common problem (Figure 16), which can also lead to rot in the structure below.

Plumbing Defects

Many of the defects discussed thus far involve exterior water sources. Plumbing defects bring that water source inside the house, with equally serious consequences. Some of the plumbing defects I see are more in the way of nuisance or code violations, like water hammer, excessive water pressure, or loose shower arms. These typically don't involve structural damage from leaks.

A common source for a plumbing leak is a poorly installed toilet (Figure 17). The connection to the closet flange is important because the toilet receives so much use, which includes supporting the entire body weight of the user. If the toilet has not been set level, or if the flange is too high or low in relation to the finish floor, it's only a matter of time before a leak develops. A leaky toilet often goes unnoticed for some time, since the water may leak under the finish flooring directly into the framing.

Chipped Sinks

This is a manufacturing defect plain and simple – and one that tends to be highly visible and irritating to the owners (Figure 18). Although it's not a structural concern, if condo owners or track house dwellers notice this in one another's homes, it can help start the defect litigation ball rolling. The chipping is normally located at the spot welds in the sinks. The enamel doesn't stick well to the welds and easily chips away, sometimes in a pattern. The solution is not to buy cheap sinks from manufacturers you have not heard of.

Ponding in Bath Tubs

Ponding in a tub may be a manufacturing problem but more often stems from improper installation (Figure 19). The builder needs to take the time to check the framing, and shim and level the tub as necessary. Otherwise, water will collect and may stain the unit. Again, this is not a life or death issue, but it's one that homeowners will easily see. The cure for this defect, some might argue, is more painful than the disease: Remove the tub and reinstall it correctly – which usually involves removal and replacement of ceramic tile surrounds.

HVAC Issues

As with plumbing, many of the hvac defects cited in a typical defect case are nuisance and code issues that are easy to correct. Like construction debris in the return air plenum, unsecured units, and no trap vent on the condensate drain. These issues rarely cause serious owner dissatisfaction. Pinched or crushed ducts are another common problem (Figure 20), which can cause uneven heating or cooling and result in owner discomfort. The cause may be sloppy installation or damage by a subsequent trade. The repair is as simple as unpinching the duct or replacing any short sections that have been permanently damaged.

Flues Too Close to Combustibles

This is a real life safety issue that can cause fires (Figure 21). It's something the municipal inspector should catch, but it often seems to be missed. Different types of flue vents have different distance requirements from combustibles. Generally, a single-wall vent must maintain 6 to 18 inches or more clearance, while a double-wall (B, BW or L type) needs anywhere from 1 to 9 inches, depending on the rating of the appliance it is venting. Many vents have clearance guidelines printed directly on the pipe. The stick in the spokes for builders is that many materials we normally think of as not by the fire safety section of code. For example, drywall is considered a combustible material by this code definition.

Sometimes the repair for a problem with distance to combustibles is a simple matter of exchanging a single-wall vent with a double –wall, thus decreasing the required distance. Sometimes it might require reframing the area. The best way to avoid problems such as these is to remember that all flue pipes carrying product of com-

Figure 18. The chipped enamel in this cheap lavatory sink is the kind of defect that will send condo or tract homeowners ballistic – especially when they see it in every home on the block.

Figure 19. Ponding in the bottom on a tub unit – the result of an out-of-level installation – is not structurally serious but is obvious to any homeowner.

Figure 20. A pinched duct can result in uneven temperatures. It's easy to fix if it's accessible, but easier still to avoid.

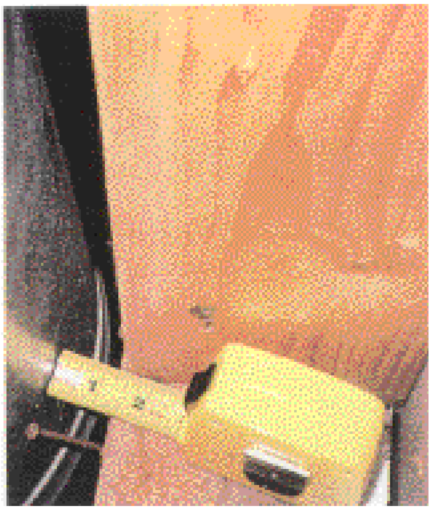
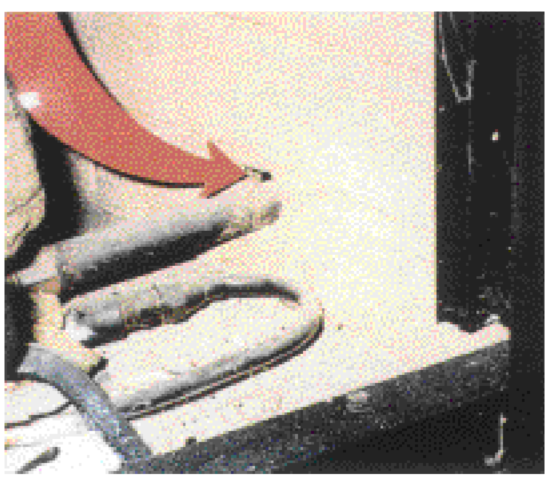


Figure 21. As a matter of life safety, combustion appliance vent pipes must have proper clearance to combustibles. The guidelines are usually stamped right on the appliance itself.

Figure 22. Firestops are an important safety requirement. Unfortunately, if a gap is missed by the inspector, all too often it will be permanently concealed from view.

Figure 23. The pipe penetration into a gas fireplace must be properly sealed with a firestop material – a defect that's easy to spot and easy to fix with fireproof grout.



bustion require some separation from combustible materials and to follow the manufacturer's installation instructions, which will usually state this requirement very clearly. If you purchase the device and the flue separately, always use the flue recommended by the manufacturer of the appliance.

Breaches in Firestops

With a mechanical firebox, a firestop must be installed at each ceiling level where the flue passes on its way to the roof. Firestops work the same way fireblocking does to prevent fire from traveling from floor to floor, as in balloon framing. Specialty subcontractors often install fireboxes and firestops, and sometimes the installation goes into an opening that was not properly framed. Instead of calling for the framer to reframe the opening, which would cost the fireplace installer and the framer time and money, the sub often completes the installation anyway, thinking that unless there is a fire, no one is likely to ever know of the improper installation. Gaps in firestops are a definite code violation and a life safety issue (Figure 22).

Unsealed Gas Line Penetration in Firebox

Mechanical fireboxes are very common in moderately priced Southern California residential construction. An unsealed gas line penetration at the mechanical firebox is one of the most common construction defects we see (Figure 23). It's a problem because fire that is supposed to be contained within the mechanical firebox could spread to the wood framing behind the box. Lucky for builders, it's also very easy to recognize and easy to fix.

There's no removal of expensive finishes needed. The repair is a simple application of fireproof grout to seal around the penetration.

2. PRELIMINARY ANALYSIS

Preliminary Analysis

- Case Studies
- PFCS Resources
- PFCS Sample Deliverables
- Discussion

Multiple Single Family Homes

106 single family residences involved in pre-litigation process (SB800). PFCS worked as the only expert for the developer/builder evaluating the homes performance individually, specifying repairs as necessary, and documenting the repairs. 36 of the homes were dismissed during the pre-litigation process at the request of the Owners.

PFCS Project 11-192

2. PRELIMINARY ANALYSIS

High-End Single Family

11,500 s.f. residence that listed for sale for $15 million. PFCS took over representing the design-builder from an expert not sophisticated enough to compose an alternate scope, allocate repair costs to trade contractors, compose demand packages, and testify supporting a lower repair estimate and responsibility. PFCS Project 13-166.

Read about industry impacts on our blog at **www.petefowler.com**

2. PRELIMINARY ANALYSIS

PFCS Resources

SEMINARS & WEBINARS

• Property Condition Assessments Using ASTM E2018-08	07/20/2011
• Analyzing Construction Defects	03/21/2012
• Analyzing & Monetizing Construction Defects	05/29/2014
• Builders Right To Repair Bills: California's SB 800	11/07/2013
• Evaluating and Prioritizing Building Maintenance and Repairs	09/24/2013
• Prioritizing Maintenance & Repairs	06/26/2014
• Project Management Skills for Litigation	02/28/2013
• Project Planning & Management for Professional Services	10/09/2014

Read about industry impacts on our blog at **www.petefowler.com**

PFCS Sample Deliverables

- See Construction Defect (CD) - Sample GC / Developer Defense (PFCS SM-006)
- 1. Preparatory Work
- 2. Preliminary Analysis

Discussion

- Preparatory Work (First 10 Things)
- Project Planning & Management
- Big? Small? SB800? Thermonuclear?
- Building Performance Analysis (BPA)
- Preliminary Analysis
- Budget numbers or Level 1 estimating

Pete Fowler
CONSTRUCTION
Services, Inc.

Managing Expert Costs

Date:	December 1, 2008
To:	Whom It May Concern
From:	Pete Fowler Construction Services, Inc.
Regarding:	Managing Expert Costs System
Note:	Copyright 2008 Pete Fowler Construction Services, Inc.

Introduction

PFCS has been working for years to create a system for delivering consulting services at the highest level of professionalism while controlling expenses. This document contains an overview of our system. The entire system is summarized on this single page. The additional pages are more discussion and attachments.

You are welcome to distribute this document to your clients for their thoughts. Also, we would be glad to come to your office to discuss this system with your staff. PFCS is a registered CA State Bar MCLE provider and this material can be used as a training course so attorneys can receive continuing education units.

System Components Summary

1. Project Information: At the beginning of a project (case) you deliver information like project name, description, name of who we will represent and scope of work, a brief “why we are here”, outline of available information, etc. PFCS will organize the information and make it available online on our Client Access system.
2. Project Planning: An internal, structured process by technical expert(s) and project managers using our (1.) 10-Step *Solving Building Problems* method which includes a “Menu of Deliverables”, (2.) our “Analysis Levels” document (attached) and (3.) our proprietary on-line planning and management tools.
3. Project Plan: Memo that describes the objective, milestones, deliverables, estimated time and budget for execution. Available to all decision makers on Client Access.
4. Approval for Work: Written or verbal approval of work described in Project Plan. Changes to the plan can be requested and integrated at this point.
5. Execution: Disciplined work focused on accomplishing the milestones, creating deliverables described in the Plan, and presenting our work with professionalism.
6. Project Plan Updates: Naturally, litigation can be messy. No amount of planning can make the process 100% predictable. But control can be exercised when assumptions change by updating the Plan (memo), figuring out what analysis is required, and requesting approval so “return on investment” (ROI) decisions can be made.
7. Project Status Memos (Optional): On more complex or expensive projects we can compare performance to plan on a periodic (monthly or quarterly) basis.
8. Project Close Memo (Optional): A final Project Status Memo where we compare performance to plan so learning opportunities can be gleaned.

Detailed Discussion

1. Project Information

A. At the beginning of a project (case) you deliver information like project name, description, name of who we will represent and scope of work, a brief "why we are here", outline of available information, etc. PFCS will organize the information and make it available online on our Client Access system.

B. Structured information that is available to all applicable stakeholders on PFCS Client Access system minimizes duplicative work.

C. Maintaining Client Access information allows all parties to get up-to-speed quickly.

D. We often compose an "Images and Information" file with big picture information, satellite and aerial images, exterior photographs and other internet-available data.

2. Project Planning

A. An internal, structured process by technical expert(s) and project managers using our (1.) 10-Step *Solving Building Problems* method which includes a "Menu of Deliverables", (2.) our "Analysis Levels" document (attached) and (3.) our proprietary on-line planning and management tools.

B. In a Project Planning Meeting (PPM) we identify the Objective, Method, Milestones, Deliverables and Actions required to move the project from where it is to the best available alternative as quickly and inexpensively as possible.

C. PFCS has a standard Project Planning Meeting Agenda and method from our Project Management training. Copies available upon request.

D. Our planning method for litigation projects is explained in an article called *Solving Building Problems* (Copies available upon request) that includes a multi-level, 10-step method, which includes a "Menu of Deliverables", for analyzing and solving problems on construction projects and buildings.

E. We plan and execute investigations at the highest level of professionalism by using our program *Building Wall Inspection and Testing* (Copies available upon request), which integrates the most important building industry standards for analysis of building performance.

F. We know our work requires ROI and we consider this during planning.

G. We can plan various "Analysis Levels" and "Exposure Analysis" points at increasing levels of depth and accuracy (Level 1 = Early, Level 5 = Final Analysis). Our "Analysis Levels" document (attached) describes how we work depending on the value of the project. We work with clients to make ROI decisions about the quantity and depth of information and its relative value at various times during the project.

3. Project Plan

A. Memo that describes the objective, milestones, deliverables, estimated time and budget for execution. Available to all decision makers on Client Access.

B. The Project Plan memo will be as concise as possible; usually 1-2 pages plus a budget worksheet for easy comparison of original plan, current / revised plan, and performance compared to plan.

C. For small projects the Plan will generally be organized by Project Milestones or Deliverables with approximate times for each. For example:
   1. Document Index and update as necessary (1-3 Hours)
   2. Issues List (includes inspection check-list and interviews) (5-8 Hours)
   3. Visual Inspection and Documentation (preparation, execution and processing) (16-18 Hours)
   4. Issues List – UPDATED (4 Hours)
   5. Opinion Letter with Recommendations (12-14 Hours)

D. Large Project Plans are organized in a Work Breakdown Structure, like a construction scope of work or estimate, with several main categories (Level 1) and specific deliverables listed below each category (Level 2). See attached Managing Expert Costs - Project Plan sample.
   1. Level 1: Preparatory Work: (A.) Client Access information (including One Minute Summary) (B.) Images and Information (C.) Issues / Inspection Checklist
   2. Level 2: Preliminary Investigation: (A.) Document Review and Summary (B.) Interviews with Key Players (C.) Visual Inspection (Prepare for Inspections, Execute Inspections, Process Documentation) (D.) Contract Summary
   3. Level 3: Analysis: (A.) Update Issues Lists (B.) Preliminary Analysis (Issues-Discussion Matrix) (C.) Opinion Letter with Recommendations (D.) Players List
   4. Level 4: Detailed Analysis: (A.) Testing Protocol (B.) Coordinate and Conduct Testing and Process Documentation (C.) Issues List Update (D.) Finalize Analysis (Issues Summary Report) (E.) Construction Cost Estimate (Level 4)
   5. Level 5: Final Analysis: (A.) Presentation Outline (B.) Presentation (C.) Meetings (D.) Deposition Testimony (E.) Trial Testimony

E. Either method allows easy comparison of performance to plan.

4. Approval of Work

A. Written or verbal approval of work described in Project Plan. Changes to the plan can be requested and integrated at this point.

B. The approval mechanism should be established in writing before beginning work.

C. The “approval of changes” mechanism should be established before beginning work.

D. The payment process and timing should be agreed upon before beginning work.

5. Execution

A. Disciplined work focused on accomplishing the milestones, creating deliverables described in the Plan, and presenting our work with professionalism.

B. As discussed above, our work is executed in various levels of depth, depending on the project and the “exposure” of the parties.

C. We will be working toward the completion of approved milestones and actions only.

6. Project Plan Updates

A. Naturally, litigation can be a messy. No amount of planning can make the process 100% predictable. But control can be exercised when assumptions change by updating the Plan (memo), figuring out what analysis is required, and requesting approval so “return on investment” (ROI) decisions can be made.

B. As changes become necessary, like when an increase in the time required for analysis occurs due to unforeseen or new circumstances, PFCS will re-estimate the time to completion and seek approval of the revised plan at the earliest practical time.

C. If changes are requested we will update the Plan and seek approval.

D. Like a kitchen remodel that includes (1.) demolition, (2.) new cabinets, (3.) paint and (4.) flooring, consulting work can be broken down into a similar, simple “work breakdown structure” and managed. If a professional remodeling contractor believes more work is required, the additional work should be approved by the payor prior to execution whenever possible. So too with consultants. Also, Owners in construction often ask for lots of small changes without recognizing the accumulated impact, and then at the end of the project they get an unpleasant surprise. It therefore behooves the professional contractor to update the plan and have it approved. So too with consultants.

7. Project Status Memos (Optional)

A. On more complex or expensive projects we can compare performance to plan on a periodic (monthly or quarterly) basis.

B. Format similar to the Project Plan memo so that performance can be compared to plan.

C. This is generally used on medium to large projects.

D. The Project Status memo will sometimes be a prompt for a multi-party Project Status Meeting.

8. Project Close Memo (Optional): Similar to the Project Status Memo. A final Project Status Memo where we compare performance to plan so learning opportunities can be gleaned. Used to compare performance to plan so learning opportunities can be discussed with the entire team.

References and Standards

1. PFCS *Analysis Levels – Deliverables and Durations* spreadsheet (Attached)
2. PFCS *Managing Expert Costs – Project Plan* sample (Attached)
3. PFCS Client Access brochure (Attached)
4. PFCS *OMAA-Goodness! Project Planning and Management Framework*
5. PFCS *Solving Building Problems*
6. PFCS *Building Wall Inspection and Testing*
7. PFCS *Building Wall Design & Construction*
8. PFCS *Contracting 101*

PFCS Analysis Levels

Deliverables and Durations

Line	PFCS 10-Step Solving Building Problems Method	Level 1: Preparatory Work	Level 2: Preliminary Investigation	Level 3: Analysis	Level 4: Detailed Analysis	Level 5: Final Analysis
1	Collect, Organize & Understand	Images and Info.	Document Index, Project Summary memo	Document Summary	Deposition Summary, Document Index UPDATE (with LOTS of documents the Index may require re-organization)	See Level 4
2	Plan	5-15 points on One Minute Summary, Project Plan memo	Project Plan Update, Project Status Memo	Project Status Memo	Earned Value Analysis	Earned Value Analysis
3	Scope of Work	1 sentence to 1 paragraph on One Minute Summary	Contract Summary, Players List	Scope of Work Matrix (Multiple Parties), Scope Hypothesis Memo	See Level 3	See Level 3
4	Issues	5-15 points on One Minute Summary, Issues List, Plaintiff Issues List	Timeline	See steps 7 and 8	See steps 7 and 8	See steps 7 and 8
5	Locations	1 sentence to 1 paragraph on One Minute Summary, Aerial Images	Locations Matrix, Inspection Summary, Site Map	Locations Matrix with additional data: Inspections, Testing, etc…, Elevation Drawings (Marked-Up), Floor Plans (Marked-Up)	Complete Quantity Take Off for L3-4 Estimate	See Level 4
6	Costs	1 sentence to 1 paragraph on One Minute Summary	Plaintiff Estimate Summary, PFCS Order of Magnitude Estimate	PFCS Level 2-3 Cost Estimate	PFCS Level 4 Detailed Estimate	PFCS Level 5 Bid-Level Estimate
7	Issues-Locations Analysis	None	Visual Inspection Documentation	Issues List w- Locations, Visual Inspection Analysis	Testing, Testing Summary Matrix, Issues-Locations Matrix	See Level 4
8	Issue-By-Issue Analysis	None	Limited to None	Issues-Discussion Matrix, Scope of Work (Repairs)	Issues Summary report, Allocation Matrix	Testimony Outline
9	Hypothesize	Initial Reaction, Exposure Analysis (L1)	Opinions in Opinion Letter or verbal talking points, Exposure Analysis (L2)	Opinions in Issues-Discussion Matrix, Exposure Analysis (L3)	Exposure Analysis (L4)	Exposure Analysis (L5)
10	Present	Telephone Call, Proposal	Opinion Letter, Investigation Recommendation	Meeting Agenda / Minutes	Powerpoint Presentation, Detailed Issue Analysis, Detailed Issue Response	Deposition, Arbitration and / or Trial Testimony
11	Total Time	1-10 Hours	8-80 Hours	60-160 Hours	100-200 Hours	200 Hours +

Managing Expert Costs

Project Plan

Line	Scope of Work / Deliverables	Status	Original Plan		Current Plan		Month 1	Month 2	Month 3	Month 4	Month 5
			Hours	Costs	Hours	Costs					
1	Level 1: Preparatory Work										
2	A. Client Access Information (including One Minute Summary)		2	$ 290.00	2	$ 290.00					
3	B. Images and Information		1	$ 145.00	1	$ 145.00					
4	C. Issues / Inspection Checklist		2	$ 290.00	4	$ 580.00					
5	D. Document Index		2	$ 290.00	8	$ 1,160.00					
6											
7	Level 2: Preliminary Investigation										
8	A. Document Review and Summary		4	$ 580.00	16	$ 2,320.00					
9	B. Interviews with Key Players		2	$ 290.00	4	$ 580.00					
10	C. Visual Inspection: Prepare, Execute, Process Documentation		16	$ 2,320.00	20	$ 2,900.00					
11	D. Contract Summary		2	$ 290.00	3	$ 435.00					
12	E. Meetings / Telephone Conferences		0	$ -	8	$ 1,160.00					
13											
14	Level 3: Analysis										
15	A. Update Issues Lists		4	$ 580.00	4	$ 580.00					
16	B. Preliminary Analysis (Issues-Discussion Matrix)		6	$ 870.00	16	$ 2,320.00					
17	C. Opinion Letter w- Recommendations		10	$ 1,450.00	24	$ 3,480.00					
18	D. Players List		2	$ 290.00	4	$ 580.00					
19	E. Meetings / Telephone Conferences		0	$ -	8	$ 1,160.00					
20											
21	Level 4: Detailed Analysis										
22	A. Testing Protocol				4	$ 580.00					
23	B. Testing: Coordinate, Conduct and Process Documentation				32	$ 4,640.00					
24	C. Issues List Update				8	$ 1,160.00					
25	D. Finalize Analysis (Issues Summary Report)				24	$ 3,480.00					
26	E. Construction Cost Estimate (Level 4)				24	$ 3,480.00					
27											
28	Level 5: Final Analysis										
29	A. Presentation Outline				8	$ 1,160.00					
30	B. Presentation				32	$ 4,640.00					
31	C. Meetings				16	$ 2,320.00					
32	D. Deposition Testimony				40	$ 5,800.00					
33	E. Trial Testimony				40	$ 5,800.00					
34											
35											
36	Total		53	$ 7,685.00	350	$ 50,750.00	-	-	-	-	-

Managing Expert Costs

"No plan can be considered complete - or satisfactory - until it produces measurable outcomes and incorporates mechanisms that allow mid-course corrections based on results." - Judith Rodin

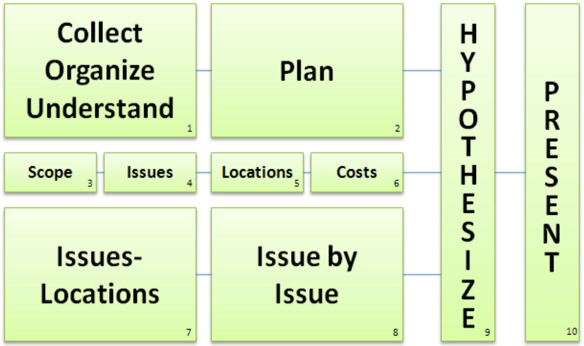
Construction litigation can be messy, and messy can get expensive. We have been working for years to create a system for delivering construction consulting services at the highest level of professionalism while controlling expenses. We have created a powerful system called *Managing Experts Costs*. Using this system combined with our 10-step *Solving Building Problems Method* we guarantee to get our clients through the project as quickly and efficiently as possible. We do this through carefully thought out project planning, disciplined execution of the plan, and frequent review of the "return-on-investment" (ROI) versus cost.

We invite you to attend one of our 1-hour continuing education teleconference seminars to learn about this resource and the benefits of taking control of what some argue is unmanageable.

For information on seminar dates or for a copy of the *Managing Expert Costs* article call us or visit http://www.petefowler.com/publications_seminars.html

To register for a seminar, please e-mail us at marketing@petefowler.com

PFCS Solving Building Problems Method



PFCS Managing Expert Costs System

1. Project Information Collection
2. Project Planning Process - 10-Steps
3. Project Plan and Budget Documents
4. Approval of Project Plan and Budget
5. Execution and Management of Plan
6. Project Plan Changes and Updates
7. Project Status Meetings and Memos
8. Project Close

3. ANALYSIS

3. ANALYSIS

Analysis

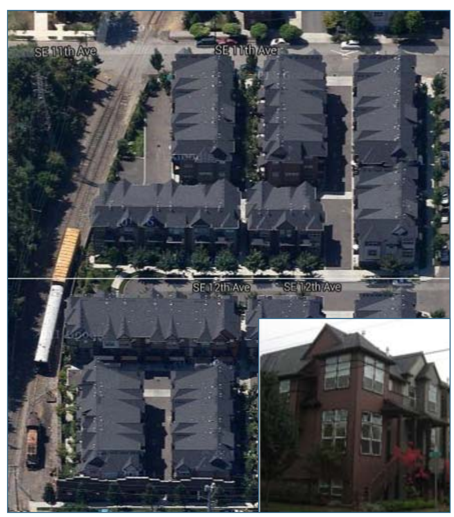
- Case Study
- PFCS Resources
- PFCS Sample Deliverables
- Discussion

Read about industry impacts on our blog at **www.petefowler.com**

3. ANALYSIS

Low-Rise Multi-Family

69 condominium units in 13 buildings. PFCS was the only developer expert: Evaluating performance, specifying repairs, and estimating. Composed a formal request for proposal (RFP). Owner's experts estimates > $2.9 million; our trial-ready scope and bids of $500,000-950,000. Project settled very favorably. PFCS Project 08-301.



Read about industry impacts on our blog at **www.petefowler.com**

3. ANALYSIS

PFCS Resources

SEMINARS & WEBINARS

• Budgeting & Estimating: Building Construction, Maintenance, Repairs & Improvement	08/28/2014
• Building Inspection & Testing - Orange County	11/10/2010
• Building Leakage Evaluation	03/27/2014
• Building Walls: Stucco, Siding & Masonry	07/30/2015
• Construction Defect Estimating and Analysis	04/18/2012
• Evaluating Water Leakage of Buildings using ASTM E2128	07/25/2013
• Fire Resistive Assemblies	10/01/2015
• Random Selection and Extrapolation of Construction Defects	11/21/2013

Read about industry impacts on our blog at **www.petefowler.com**

3. ANALYSIS

PFCS Sample Deliverables

- See Construction Defect (CD) - Sample GC / Developer Defense (PFCS SM-006)
- 3. Analysis

Read about industry impacts on our blog at **www.petefowler.com**

3. ANALYSIS

Discussion

- Digging deeper
- To test or not to test?
- Mapping
- Opinions / Conclusions
- Estimating

Read about industry impacts on our blog at **www.petefowler.com**

Managing Construction Quality

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GENERAL INQUIRY

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THE GOOD OLD DAYS

Successful construction projects used to go something like this: Owners would hire experienced, hardworking Architects and Engineers who developed plans and specifications that were not perfect, but good enough that experienced, hardworking General Contractors could hire experienced, hardworking Trade Contractors to do the work of making a project happen. We worked through the inherent difficulties of construction by working long hours, keeping our word and understanding that "stuff happens". We accepted that no project was perfect, that people screw up, and knew that there was little use in crying over spilled milk. The satisfaction of a job well done carried us through the toughest days.

We didn't spend much time telling specialists, like trade contractors, how to do their job. They had skilled tradesmen, the construction was relatively simple, and most contractors did things pretty much the same. If we had a contract, it was something the "suits" put together, and copies might not be sent to the job site since they had little or no connection to the "getting the job done".

THE NEW WORLD

Construction professionals are living in a new world:

- Consumers expect quality increases and price decreases in all products.
- The building industry is not keeping pace with the quality and price advances many industries are making.
- Consumers are more litigious than ever and there is a proliferation of attorneys.
- The building industry is not attracting the best and brightest young people.
- The built-environment has been altered in the last 20 years, including increased complexity, less fault-tolerant materials, and tighter, slower drying buildings.
- Consumers are more conscious of building-related health issues than ever.
- In some areas, a lack of skilled construction labor makes the construction professional's job even more critical.

CONSTRUCTION MANAGEMENT

Our company delivers training in construction management and we have categorized the phases of project planning and management in a framework we call

"The DBSKCV™ (pronounced "dib-skiv") Method."

SUMMARY OF THE DBSKCV METHOD

- Define the Scope of Work (this includes the design phase).
- Budget: Identify how much the project will cost the contractors and owner.
- Schedule when the construction will happen and share this information.
- Contract (K): Who is doing what? Everyone should know what to expect.
- Coordinate the construction.
- Verify, document and communicate that everyone is doing what they should.

For details, please read *The DBSKCV™ Construction Management Method*.

CONSTRUCTION RISK MANAGEMENT

Growing legal risks, administrative issues, sky-rocketing workers' compensation costs, increasing fees and taxation, and complicated insurance issues are only a few of the reasons why the price of construction is higher today than ever before. Managing construction risk is a full time vocation for many professionals and beyond the scope of this article (we do training on this too).

THE ABC'S OF RISK MANAGEMENT

- A = Avoid Potentially Dangerous Situations (Impossible in construction)
- B = Be Really Good At What You Do
- C = Cover Your Assets

The ABC's apply to Managing Construction Quality because (A.) we must face the fact that "risk avoidance" as a construction professional is impossible, (B.) being good at what you do means doing all you can to make sure a project succeeds, and doing a little bit of someone else's job will sometimes become necessary, and (C.) the best "coverage" is avoiding problems by delivering work that meets expectations. Just accept buyers expect high quality *and* performance, even when they pay rock-bottom prices, and lawyers expect perfection; the former is hard, but easier than the latter.

PROJECT DEFINITION

The "Define" phase of construction management consists of documenting the work to be performed. This is usually graphic and written with plans, specs, references to codes and standards, and detailed "Scope of Work" documents. Getting a clear, specific and detailed project scope is the first step in the construction project management process and it is where a project's "quality" should be established.

SOME QUICK DEFINITIONS

- Plans and Details: Graphic representation of construction.
- Specifications: Specs are the written representation of construction, which usually includes a greater level of detail regarding construction performance, process, products, and quality.
- Construction Contract: Agreement between two or more parties for the delivery of construction; plans and specifications are used as the definition of what is being bought and sold.
- Standards: Documents, with graphic and written information, referenced by plans, specifications and construction contracts, which specify performance criteria and/or methods in greater detail than typical plans or specifications. Standards are created by standards setting bodies like ASTM, product manufactures, and industry trade groups.

- Scope of Work: The written definition of what is being bought and sold. Usually articulated in writing by making a list or description of responsibilities and specific exclusions (work that is NOT included), with references to plans, specifications (prescriptive or performance based), and industry standards. I strongly prefer when the scope can be summarized in a 5-15 point list, or conform to the fundamentals of a 2 or 3 level "Work Breakdown Structure," collectively representing 100% of the project scope.
- Hold-Point: Critical time in the construction process where construction should stop for verification of conformance with plans, specifications, standards (including performance) and contracts. Verification can include inspection, testing, recording, and reporting.

In "the good old days" we left the details of "how to" to the trade contractors. After all, they are the specialists. But for the reasons stated above, leaving the details to trade contractors to work out among themselves has left a lot of projects in a less than enviable position: lack of integration, quality problems, re-work, leaks, lack of durability and on and on.

Owners or their representatives should no longer sign a one or two page "Proposal" from a contractor which serves as the "Scope of Work." Such documents are not likely to contain information specific enough to ensure the scope is complete, to ensure that the parties are on the same page for quality or performance, and they lack adequate contractual protections.

Specification writers making obscure references to documents that are difficult to obtain is not new. But acquiring these documents is much easier due to the internet. It is now possible to "define" (design) our projects using readily accessible documents that we can use during the building process to make sure the on-site work is being installed and integrated correctly. This information needs to be integrated throughout the plans, specifications, standards and contracts. In practice, these documents should be created or referenced in the *Define* phase, referenced in the *Contract* phase, and used to compare the actual work in the field to the plan during *Coordination* and *Verification*.

MANAGING CONSTRUCTION QUALITY

There is no way to 100% guarantee project success and performance; the closest I have found is the use of a proven system.

Think of it this way: *Construction plans and specifications are a hypothesis, and a hypothesis should always be verified*. The hypothesis is that the designers and specialty consultants have composed a set of documents that are appropriate to build a project that will meet the *performance expectations* of the owners and applicable codes. The contractors on the project then work under the hypothesis that the design is functional, and that the work they do will also meet *performance expectations.*

Question: How do we verify our construction projects are going to perform?

Answer: (1.) During the define phase, we make sure our design hypothesis is reasonable by having someone with experience in building performance issues review, comment and recommend improvements; (2.) We make sure the plans, specifications, standards, and contracts are consistent in describing to the contractors who will install the specified material "what good performance looks like"; (3.) We establish a procedure to "verify" at specified *Hold-Points* during construction; (4.) During construction we inspect to verify conformance with the design (plans, specs, standards, and contracts). (5.) After the initial assemblies are installed, test them to verify performance, or build a mock-up and test it before construction (whichever is more cost effective).

Remember: We must be willing to administer consequences to project team members who don't do what they promise. You will get resistance. If a contractor has signed a contract to perform consistent with a specified standard, it will sometimes take a strong will to make some of them perform.

ATTACHMENT: The attached *Independent Quality Review* spreadsheet is a matrix of optional activities one might perform or purchase from a consultant. The minimum activities required, for a third party to be of assistance in ensuring project quality, are identified; higher levels of service are like buying more insurance. Remember, this does not include *doing* the actual design. At a minimum, this is making sure the project definition is close to complete, and helping assure that proper installation and integration of the assemblies will lead to appropriate performance. Further work can ensure a connection between the plans, specifications, standards and contract scope of work documents.

QUALITY MANAGEMENT PLAN

Here is the system, organized in the context of The DBSKCV Method. Remember, the DBSKCV Method is iterative, meaning we walk through all steps many times throughout the life of a project. We should go through the "D-B Loop" (e.g Define-Budget-Repeat) many times before moving forward.

DEFINE

- Architectural, Structural, and Specialty Design
- Specification Writing
- Referenced Standards

QUALITY PLANNING

- Evaluation of plans and specs
- Evaluation of referenced standards, and contract / scope of work language review (Optional)
- Hold Point Development and performance verification planning (Optional)
- Mock-Up of assemblies and testing (Optional)
- Recommendations (final) from Quality Review Consultant
- Meetings or teleconferences between Quality Review Consultant and Owner, Designers and/or Contractors (Optional).
- Review of updated design, specification, referenced standards and contracts made in response to Recommendations from Independent Quality Review Consultant (Optional).

BUDGET

Update as necessary throughout the process. Make active decisions about "how much insurance to buy".

SCHEDULE

- Establish Hold Points
- Be prepared to stop the project if acceptable performance cannot be achieved

CONTRACT

Connect the Plans, Specifications, and Standards, Quality Management Plan, including Hold Points, to the Contract and Scope of Work documents so that Quality does not "cost extra" (in change orders) during construction.

COORDINATE

- Make sure prime and trade contractors know the standards they will be held to during the Verify phase.
- Coordinate actions at Hold Points in the construction schedule to verify quality of installations.

VERIFY

- Visual Inspection at Hold Points to verify conformance with project definition (plans, specs, standards and contract scope of work documents) and to evaluate any on-site changes (Optional)
- Testing to verify performance (Optional)
- Final Report that might include: Quality control process, design summary, evaluation process, inspection summary, testing summary and on-going maintenance recommendations (Optional)

Line	Description of Potential Services	Service and Document Review Levels																		Typical Durations	
		1A	1B	1C	2A	2B	2C	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	6C	Low	High
1	Evaluation of plans and specifications	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	8	40
2	Evaluation of referenced standards		x	x		x	x		x	x		x	x		x	x		x	x	4	40
3	Evaluation of contracts (scope of work)			x			x			x			x			x			x	4	40
4	Hold Point Development							x	x	x	x	x	x	x	x	x	x	x	x	4	40
5	Mock-Up of Assemblies and Testing										?	?	?	?	?	?	x	x	x	16	80
6	Recommendations (final)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	8	80
7	Meetings or Teleconferences	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	40
8	Review of Updated Design	?	?	?	?	?	?	?	?	?	?	?	?	x	x	x	x	x	x	4	40
9	Visual Inspection				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	160
10	Testing							x	x	x	x	x	x	x	x	x	x	x	x	8	80
11	Final Report										x	x	x	x	x	x	x	x	x	8	40
12																					
13	Potential Deliverables																				
14	Opinion Letter re: Evaluation	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	16
15	Issues List with Recommendations	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	16
16	Inspection Summary				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	8
17	Inspection Report										x	x	x	x	x	x	x	x	x	4	16
18	Location Matrix				?	?	?	?	?	?	?	?	?	x	x	x	x	x	x	1	16
19	Hold Points				?	?	?	x	x	x	x	x	x	x	x	x	x	x	x	1	16
20	Testing Protocol							x	x	x	x	x	x	x	x	x	x	x	x	2	16
21	Testing Summary Report							x	x	x	x	x	x	x	x	x	x	x	x	4	16
22	Project Close Report							?	?	?	?	?	?	x	x	x	x	x	x	4	16

Explanation of Service Levels
- L1: No Inspection
- L2: Limited Visual Inspection
- L3: Limited Visual, Limited Testing
- L4: Periodic Inspection, Limited Testing
- L5: Extensive Inspection, Limited Testing
- L6: Extensive Inspection, Extensive Testing

Document Review Levels
- A: Plans and Specs only
- B: Plans, Specs, and Standards
- C: Plans, Specs, and Standards and Contracts

4. DETAILED ANALYSIS

Detailed Analysis

- Case Study
- PFCS Resources
- PFCS Sample Deliverables
- Discussion

Mid-Rise Condominium

7 story, 3 building 262 unit mid-rise condominiums. PFCS was the lead expert representing the developer/builder. We specified and estimated the repairs, and composed a formal request for

proposal (RFP). The Owner's experts estimates exceeded $15 million, compared to our trial-ready scope and estimate of $1.2 million. The project settled favorably. PFCS Project 12-180.

PFCS Resources

SEMINARS & WEBINARS

• Building Codes & Standards	02/26/2015
• Specifying & Building Construction, Maintenance, Repairs & Improvements	07/24/2014
• Managing Building Maintenance, Improvement & Repair	12/11/2014
• Mold Management: What Have We Learned?	02/24/2010
• Quality Control for Construction, Maintenance, Repairs & Improvements	10/23/2014

PFCS Sample Deliverables

- See Construction Defect (CD) - Sample GC / Developer Defense (PFCS SM-006)
- 4. Detailed Analysis

4. DETAILED ANALYSIS

Discussion

- Issue by Issue Analysis

Read about industry impacts on our blog at **www.petefowler.com**

Level 5 Estimating

5 Levels - 10 Steps

		Level 1	Level 2	Level 3	Level 4	Level 5
Line	**Steps**	**Order of Magnitude**	**Conceptual**	**Preliminary**	**Detailed**	**Bid / Construction / Trial**
1	Format	Summary Sheet Only	Add capital letters (or numbers if L1 are letters) with 2 to 15 items under each of the main categories	Conform with the WBS rules: Main Category, then capital letters or numbers, then alternate with each new level.	See PFCS Samples for deeper and deeper levels. Conform to rules of WBS.	Final Pass for clarity and ease of making references and following all of the component parts.
2	Scope	A Level 1 Work Breakdown Structure (WBS): 1 paragraph to 1 page. There are only basic quantities (no real QTO) in approximate figures	Add details with 2-10 categories each with letters and CSI codes. Basic QTO on main items (SF, FA, LF, etc.) Usually not calculated units like Cubic Yards (CY)	Level 3 WBS with letters, numbers, and CSI codes. More detailed QTO.	Complete, detailed QTO.	Final Pass. Check QTO on key items.
3	Time/Labor	Little or no breakdown of labor / time in this step	Rough Estimate, Typical crews, Round numbers, slightly over estimating. No calls	Productivity rates, Use Walker's book on big #'s	Use Walker's Labor Rates	Final Pass
4	Material	A guesstimate. Little QTO, Quantities only - not cost of materials. Assembly level estimates at the most	QTO, Rough Estimate, Slightly over estimating. Books only for big #.'s, NO calls unless faster than book	Calls, Books, Maybe Alternatives	Calls, Bids, Alternatives refined	Final Pass
5	Equipment	WAG. Often none	Rough Estimate. No Calls	Calls, Books	Calls, Books, Bids	Final Pass
6	Subs	Unit prices, WAG, Use books only on BIG #'s	Books, NO calls	Some Calls	Lots of Calls, Maybe send info, Maybe Bids	Final Pass
7	GC's	% of Direct Cost	Reconsider % or Amount	Reconsider % or Amount	Broken Down	Same as L4
8	OH	% of Direct Cost	Reconsider % or Amount	Reconsider % or Amount	Possibly Broken Down	Same as L4
9	Profit	% of Direct Cost	Reconsider % or Amount	Reconsider % or Amount	Reconsider % or Amount	Reconsider % or Amount
10	Non-Construction	WAG	SWAG	More Support	More Support	Calls/Bids
11	Time:	1-4 Hours	2-24 Hours	16-100 Hours	50-200 Hours	100+ Hours

5. ALLOCATION & MEDIATION

5. ALLOCATION & MEDIATION

Allocation & Mediation

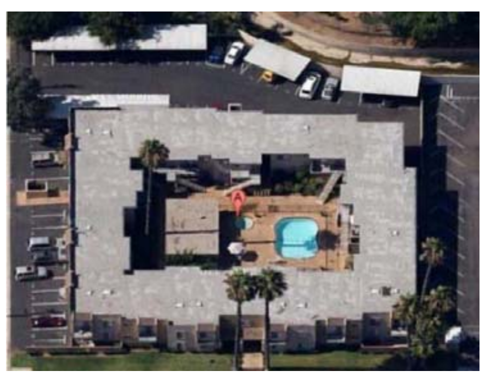
- Case Study
- PFCS Resources
- PFCS Sample Deliverables
- Discussion

Read about industry impacts on our blog at **www.petefowler.com**

5. ALLOCATION & MEDIATION

Condominium Conversion

32 unit San Diego apartment complex built in 1975 converted to condos in 2003. The developers directed "maintenance and improvement" work of numerous contractors including a GC we represented. Original claim: $200K spent plus $220K more necessary; jumped to $1.5 million compared to the developer's estimate of $54K. PFCS testified and the matter settled favorably for the GC.



PFCS Project 11-397

Read about industry impacts on our blog at **www.petefowler.com**

PFCS Resources

SEMINARS & WEBINARS

• Allocation of Responsibility for Construction Defects	12/18/2013
• Contracting 101	04/23/2015

PFCS Sample Deliverables

- See Construction Defect (CD) - Sample GC / Developer Defense (PFCS SM-006)
- 4. Analysis / Mediation

Discussion

- Allocation of Responsibility
- Contracting 101 / Roles & Responsibilities
- Who pays what?
- Fixing?
- Specifications & Bidding?
- Maintenance Planning?

Pete Fowler
CONSTRUCTION
Services, Inc.

Portfolio Management of Construction Claims

For building industry players who are engaged in multiple construction claims (builders, general contractors, larger trade contractors, material manufacturers, insurance companies, attorneys) each case can be considered a single battle in a larger war. Deciding how much to spend on each claim – each battle – is hard. How do these expensive decisions get evaluated? Although it should not be guesswork, it often is. PFCS has created a structured process for making these complicated, difficult, strategically important, return-on-investment (ROI) decisions.

PFCS will show you a method for managing your portfolio of construction claims, helping you develop a process for evaluating the costs of various scenarios in construction claim handling. At any point in any case, whether you've spent $1.00 or $3 million, you can ask and answer, or at least estimate, these key questions: How much has been spent so far? How much will it cost to get out now? What is a small fight worth? A big fight? What might trial costs look like, and is it worth the risk? As anyone familiar with litigation knows, each of these questions is likely to have best-likely-worst case answers.

The cheapest option is sometimes to get out of the case early, after only the most preliminary analysis. But claims run the gamut, so sometimes a long, expensive fight is the cheapest, best solution, especially if a good outcome will influence other cases.

Key System Components

1. <u>Claims Management Plan</u>: Brief strategy and tactical document including written objective, executive summary, litigation budget, written agreements with attorney and other vendors, a timeline, and a Claims Plan Manager job description.
2. <u>Company Level Analysis</u>: Worksheet that is a master list of all cases with best-likely-worst case scenario figures and a strategy summary for each. This includes a summary of all the individual Project Level Analysis worksheets.
3. <u>Project Level Analysis</u>: Worksheets for each case including best-likely-worst case figures for Attorneys, Experts, Other and Settlement/Judgment costs at various levels of litigation including immediate settlement, a small fight, a big fight and through trial. This includes a summary of the Vendor Scope-Budget Matrix worksheets, plus a settlement hypothesis.
4. <u>Vendor Scope-Budget Matrix</u>: This is an individual budget from each vendor on each project broken down to conform with the Project Level and Company Level Analysis worksheets.
5. <u>Meeting Agenda / Minutes</u>: Structure for preparing for, reviewing and updating the analysis periodically.

Construction Contractor

Company Level Analysis

#	Claim	Demand	Best Case Scenario	Likely Scenario	Worst Case Scenario	Strategy Summary
1						
2						
3						
4						
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49						
50						

Construction Contractor

Project Level Analysis

Line	Scenario	Level				
		L1: Spent	L2: Now/ASAP	L3: Small Fight	L4: Big Fight	L5: Trial
1	**Attorney Fees**					
2	Best Case					
3	Likely Case					
4	Worst Case					
5						
6	**Expert Fees**					
7	Best Case					
8	Likely Case					
9	Worst Case					
10						
11	**Other**					
12	Best Case					
13	Likely Case					
14	Worst Case					
15						
16	**Settlement/Judgment**					
17	Best Case					
18	Likely Case					
19	Worst Case					
20						
21	**Total**					
22	Best Case	$ -	$ -	$ -	$ -	$ -
23	Likely Case	$ -	$ -	$ -	$ -	$ -
24	Worst Case	$ -	$ -	$ -	$ -	$ -

Construction Contractor

Scope-Budget Matrix

Line	Scope of Work/Deliverables	Status*	Plan Estimate Hours	Plan Estimate Costs	Billed to Date	Cost to Complete
1	**Level 1: Preparatory Work**		**0**	**-**		
2	A. Images & Information Memo	TBC				-
3	B. Document Index	TBC				-
4	C. Issues List	TBC				-
5	D. Unit Matrix	TBC				-
6	E. Site Plan/Map	TBC				-
7	F. Meetings, Teleconferences & Correspondence	TBC				-
8						
9	**Level 2: Preliminary Investigation**		**0**	**-**		
10	A. Investigation Recommendations	TBC				-
11	B. Inspection Request with Random Selection	TBC				-
12	C. Inspection Documentation	TBC				-
13	D. Players List	TBC				-
14	E. Scope of Work Matrix	TBC				-
15	F. Plaintiff Estimate Summary	TBC				-
16	G. Project Summary Memo	TBC				-
17	H. Plan Review Memo	TBC				-
18	I. Cost Estimate - Order of Magnitude	TBC				-
19	J. Meetings, Teleconferences & Correspondence	TBC				-
20						
21	**Level 3: Analysis**		**0**	**-**		
22	A. Issues-Discussion Matrix	TBC				-
23	B. Testing Request with Random Selection	TBC				-
24	C. Testing Summary	TBC				-
25	D. Testing Maps	TBC				-
26	E. Damage Maps	TBC				-
27	F. Issues-Locations Matrix	TBC				-
28	G. Scope of Repair	TBC				-
29	H. Opinion Letter	TBC				-
30	I. Research Memo	TBC				-
31	J. Meetings, Teleconferences & Correspondence	TBC				-
32						
33	**Level 4: Detailed Analysis**		**0**	**-**		
34	A. Request for Proposal	TBC				-
35	B. Issues-Summary Report	TBC				-
36	C. Allocations	TBC				-
37	D. Meetings, Teleconferences & Correspondence	TBC				-
38						
39	**Level 5: Final Analysis**		**0**	**-**		
40	A. Deposition Questions	TBD				-
41	B. Deposition Summaries	TBD				-
42	C. Presentation Outline	TBD				-
43	D. Presentation (PowerPoint)	TBD				-
44	E. Exhibit List	TBD				-
45	F. Expert Designation	TBD				-
46	G. Meetings, Teleconferences & Correspondence	TBD				-
47	**Totals**		**0**	**$ -**	**$ -**	**$ -**
48	*D=Done, IP=In Progress, TBC=To Be Completed, TBD=To Be Determined					

6. DEPOSITION & TRIAL

Deposition & Trial

- Case Studies
- PFCS Resources
- PFCS Sample Deliverables
- Discussion

Hospitality

3 story, 71-room, 43,000-SF hotel. PFCS was the only general contractor's expert: Evaluating, specifying repairs, and estimating. Owner's experts estimate was $1.5M; PFCS testified that required repairs totaled $405,000. The project settled and the Owner's attorney hired PFCS to pursue another similar matter. PFCS Project 07-331.

6. DEPOSITION & TRIAL

Industrial

A commercial food processing/bottling plant with problems related to the wastewater capture system and the epoxy floor coating system. PFCS was the lead expert representing the general contractor. The Owner's demand through testimony was $1.5 million; our analysis was $0 liability. The case settled favorably on the eve of trial.

PFCS Project 06-336

Read about industry impacts on our blog at **www.petefowler.com**

6. DEPOSITION & TRIAL

PFCS Resources

SEMINARS & WEBINARS

• Trial Presentations	02/22/2011
• Expert Witness Success	03/28/2013

Read about industry impacts on our blog at **www.petefowler.com**

6. DEPOSITION & TRIAL

PFCS Sample Deliverables

- See Construction Defect (CD) - Sample GC / Developer Defense (PFCS SM-006)
- 5. Trial

6. DEPOSITION & TRIAL

Discussion

- These are expensive
- Arbitration vs. Trial
- They appear to be getting more common
- When you get squeezed, what comes out?

Pete Fowler
CONSTRUCTION
Services, Inc.

SB 800 Introduction and Summary

Date:	December 2, 2011
To:	PFCS Clients and Fans
From:	Pete Fowler Construction Services, Inc.
Regarding:	SB 800 Introduction and Summary: CA Builders Right To Repair Law
Pages:	Lots
Note:	Copyright 2011 Pete Fowler Construction Services, Inc.

Introduction

Senate Bill (SB) 800, the 'Builders Right To Repair' bill was signed into law September 20, 2002, and took effect for every living unit sold in California after January 1, 2003. Printed the bill is 12 pages and specifies the rights and requirements of a homeowner to bring a construction defect action, contains building standards and functionality requirements for new residential units, and gives a detailed pre-litigation procedure. SB 800 was developed as a compromise of various factions of the building and legal communities to address the problems of the home building industry. The 9,000 word bill states the intent of the legislature is to improve the procedure for the administration of civil justice in construction defect cases.

Problems that led to the development and passage of the bill into law include:
- Issues of quality in home building and consumer protection
- Pervasive construction defect litigation
- A lack of insurance coverage for builders, subcontractors, and suppliers

Important components of SB 800:
- Pre-litigation procedure requires the owner to notify and allows 'Builders Right To Repair' before being sued
- Immunity for 'qualified' third party quality inspectors. This is meant to encourage the practice of third-party quality control.
- Allows recovery for damages previously excluded under *Aas*
- Builders must notify owners of maintenance requirements and SB 800 protections at time of sale
- Builders now have a document retention requirement, by statute
- Specific statute of limitations, less than the blanket 10 years, for many components in residential construction
- Builders cannot demand a 'release' for performing repairs. Builders can get a full release if they offer cash or upgrades in return for release.
- The pre-litigation process does toll the statute of limitations
- Conduct during the pre-litigation procedure is admissible in a subsequent suit. Bill does apply to subcontractors, suppliers, manufacturers and designers, except pre-litigation procedure

Actionable Defects

Water Issues

(1) A door shall not allow unintended water to pass beyond moisture barriers.
(2) Windows, patio doors, deck doors, and their systems shall not allow water to pass beyond moisture barriers.
(3) Windows, patio doors, deck doors, and their systems shall not allow excessive condensation.
(4) Roofs, roofing systems, chimney caps, and ventilation components shall not allow water beyond moisture barriers.
(5) Decks, deck systems, balconies, balcony systems, exterior stairs, and stair systems shall not allow water to pass into the adjacent structure.
(6) Decks, deck systems, balconies, balcony systems, exterior stairs, and stair systems shall not allow unintended water to pass within the systems themselves and cause damage.
(7) Foundations and slabs shall not allow water or vapor to enter into the structure so as to cause damage.
(8) Foundations and slabs shall not allow water or vapor to enter into the structure so as to limit the installation of the type of flooring materials.
(9) Hardscape, irrigation systems, landscaping systems, and drainage systems, shall not cause water or soil erosion or come in contact with the structure so as to cause damage to another building component.
(10) Stucco, siding, exterior walls, exterior framing, exterior wall finishes and fixtures, pot shelves, horizontal surfaces, columns, and plant-ons, shall be installed in such a way so as not to allow unintended water to pass into the structure or beyond moisture barriers.
(11) Stucco, siding, and exterior walls shall not allow excessive condensation to cause damage to another component.
(12) Retaining and site walls and their drainage systems shall not allow unintended water to pass beyond moisture barriers so as to cause damage.
(13) Retaining walls and site walls, and their drainage systems, shall only allow water to flow beyond, around, or through the areas designated by design.
(14) The plumbing system, sewer system, and utility systems shall not leak.
(15) Plumbing, sewer, and utility lines shall not corrode so as to impede the useful life of the systems.
(16) Sewer systems shall allow the designated amount of sewage to flow through the system.
(17) Shower and bath enclosures shall not leak water into the interior of walls, flooring systems, or the interior of other components.
(18) Ceramic tile and tile countertops shall not allow water into the interior of walls, flooring systems, or other components so as to cause damage.

Structural Issues

(1) Foundations shall not contain significant cracks or vertical displacement.
(2) Foundations shall not cause the structure to be structurally unsafe.
(3) Foundations and soils shall comply with the design criteria for chemical deterioration or corrosion resistance in effect at the time of construction.
(4) A structure shall comply with the design criteria for earthquake and wind load resistance.

Soil Issues

(1) Soils and retaining walls shall not cause damage to the structure.
(2) Soils and retaining walls shall not cause the structure to be unsafe.
(3) Soils shall not cause the land upon which no structure is built to become unusable.

Fire Protection

(1) A structure shall comply with the design criteria and codes.
(2) Fireplaces, chimneys, chimney structures, and chimney termination caps shall not cause unreasonable risk of fire.
(3) Electrical and mechanical systems shall not cause unreasonable risk of fire.

Plumbing and Sewer Issues

Plumbing and sewer systems shall operate properly and not impair use of the structure. Four year statute.

Electrical System Issues

Electrical systems shall operate properly and not impair the use of the structure. Four-year statute.

Other Areas of Construction

(1) Exterior hardscape (driveways, sidewalls, etc.) shall not have excessive cracks or vertical displacement. Four-year statute.
(2) Stucco, siding, and exterior wall finishes shall not contain significant cracks or separations.
(3) (A) To the extent not otherwise covered by these standards, manufactured products, shall be installed so as not to interfere with the products' useful life.
(3) (B) "useful life" means a representation of how long a product is warranted or represented, through its limited warranty or any written representations, to last by its manufacturer, including recommended or required maintenance. If there is no representation by a manufacturer, a builder shall install manufactured products so as not to interfere with the product's utility.
(3) (C) "manufactured product" is completely manufactured offsite.
(3) (D) If no useful life representation is made, the period shall be no less than one year. This subparagraph does not limit recovery if there has been damage to another building component caused by a manufactured product during the manufactured product's useful life.
(3) (E) This title does not apply in any action seeking recovery solely for a defect in a manufactured product located within or adjacent to a structure.
(4) Heating, shall be capable of maintaining a temperature of 70 degrees Fahrenheit three feet above the floor in any living space.
(5) Air-conditioning, shall be consistent with the size and efficiency design criteria in Title 24 of the California Code of Regulations.
(6) Attached structures shall comply with interunit noise transmission standards. One-year statute.
(7) Irrigation and drainage shall operate properly. One-year statute.
(8) Wood posts shall not be installed so as to cause decay. Two year statute.
(9) Steel fences shall be installed so as to prevent corrosion. Four year statute.
(10) Paint and stains shall be applied so as not to cause deterioration of the building. Five year statute.
(11) Roofing materials shall be installed so as to avoid materials falling from the roof.
(12) Landscaping shall be installed so as to survive for not less than one year. Two year statute.
(13) Ceramic tile and backing shall be installed so it does not detach.
(14) Dryer ducts shall be installed pursuant to manufacturer requirements. Two year statute.
(15) Structures shall be constructed so as not to impair the occupants' safety.

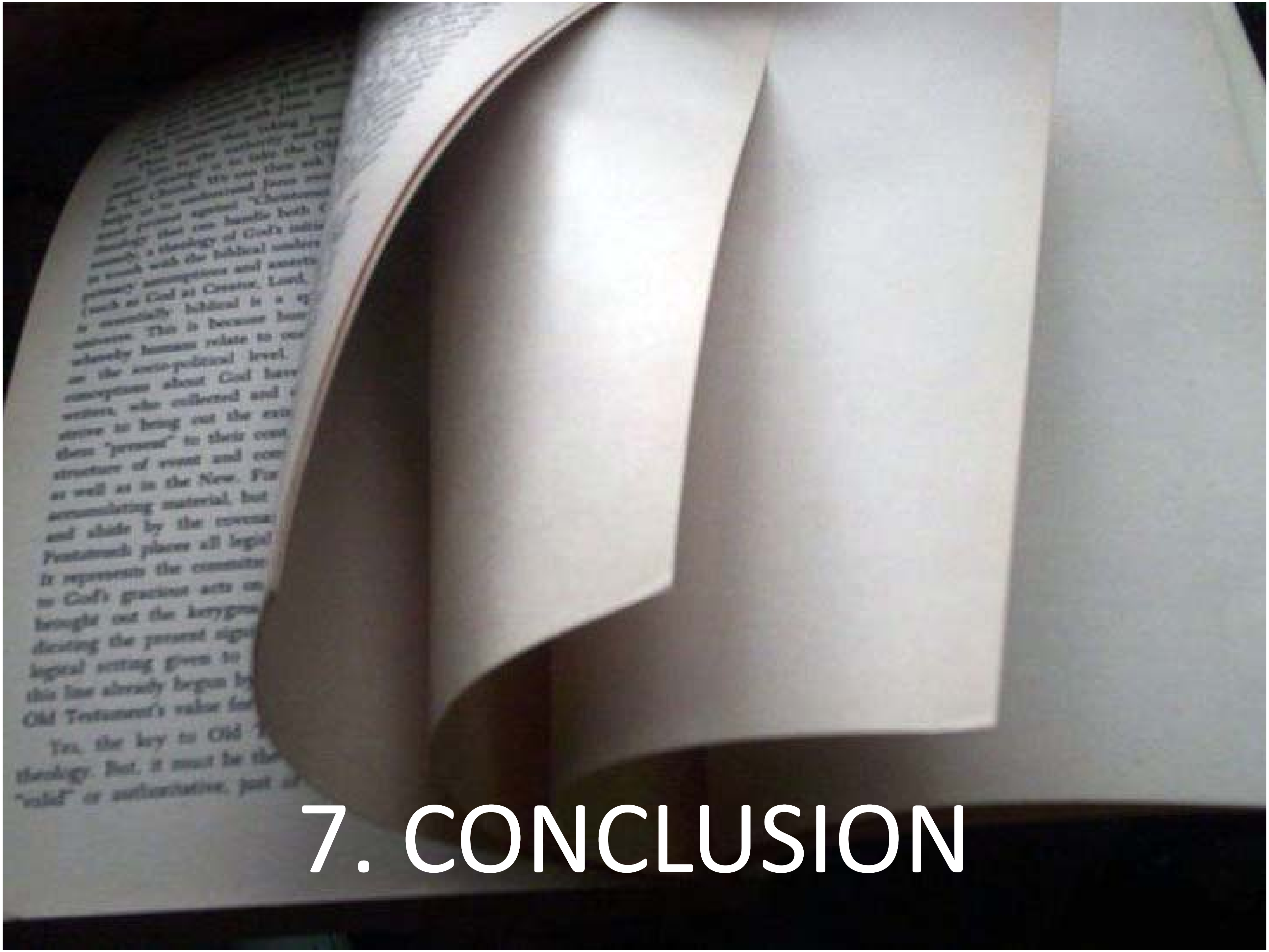
The standards set forth in this chapter are intended to address every function or component of a structure. To the extent that a function or component of a structure is not addressed by these standards, it shall be actionable if it causes damage.

‘Builders Right to Repair’ Calendar

	Activity	Weeks 0–45
1	Homeowner Notice	
2	Builder acknowledges Homeowner notice w/ in 14 days	
3	Notify subcontractor(s) of inspection 1 w/ "adequate" notice	
4	Builder complete inspection 1	
5	Builder restore home within 2 days of inspection 1	
6	Builder request for second inspection within 3 days of inspection 1	
7	Builder sends documents to owner 30 days of request	
8	Notify subcontractor(s) of inspection 2 w/ "adequate" notice	
9	Builder complete inspection 2 w/ in 40 days of inspection 1	
10	Builder restore home within 2 days of inspection 2	
11	Builder Offer to Repair [or Cash], and offer to mediate, w/ in 30 days of inspection 2	
12	Mediation w/ in 15 days of request to mediate	
13	Homeowner authorize repairs or request alternate contractors, or accepts cash offer w/ in 30 days of offer	
14	Inspection 3 w/ in 20 days of request for alternate contractors	
15	Builder presents choice of 3 alternate contractors w/ in 35 days of request for alternate contractors	
16	Homeowner authorizes repair w/ in 20 days of alternate contractor choices	
17	Permit acquisition - no defined time	
18	Commence Repairs w/ in 14 days of authorization of repair, or 7 days of mediation, or 5 days after permit acquisition	
19	Total Pre-Repair (in days)	
20	Repairs (in days)	
21	Total Process (in days)	
22	Total Process (in months)	
23		Shortest
24	This timeline is simplified for a general understanding.	Longest
25	Refer to exact language of the bill for claims.	Complete

‘Builders Right to Repair’ Calendar

	Activity	Mediate	Cash	Repair Short	Repair Medium	Repair Medium	Repair Longest
1	Homeowner Notice	0	0	0	0	0	0
2	Builder acknowledges Homeowner notice w/ in 14 days	14	14	14	14	14	14
3	Notify subcontractor(s) of inspection 1 w/ "adequate" notice						
4	Builder complete inspection 1	14	14	14	14	14	14
5	Builder restore home within 2 days of inspection 1						
6	Builder request for second inspection within 3 days of inspection 1						
7	Builder sends documents to owner 30 days of request						
8	Notify subcontractor(s) of inspection 2 w/ "adequate" notice						
9	Builder complete inspection 2 w/ in 40 days of inspection 1						40
10	Builder restore home within 2 days of inspection 2						
11	Builder Offer to Repair [or Cash], and offer to mediate, w/ in 30 days of inspection 2	30	30	30	30	30	30
12	Mediation w/ in 15 days of request to mediate	15		15	15		
13	Homeowner authorize repairs or request alternate contractors, or accepts cash offer w/ in 30 days of offer		30			30	30
14	Inspection 3 w/ in 20 days of request for alternate contractors						
15	Builder presents choice of 3 alternate contractors w/ in 35 days of request for alternate contractors				35	35	35
16	Homeowner authorizes repair w/ in 20 days of alternate contractor choices				20	20	20
17	Permit acquisition - no defined time						
18	Commence Repairs w/ in 14 days of authorization of repair, or 7 days of mediation, or 5 days after permit acquisition			7	14	14	14
19	Total Pre-Repair (in days)	73	88	80	142	157	197
20	Repairs (in days)	0	0	120	120	120	120
21	Total Process (in days)	73	88	200	262	277	317
22	Total Process (in months)	2.4	2.9	6.7	8.7	9.2	10.6
23							
24	This timeline is simplified for a general understanding.						
25	Refer to exact language of the bill for claims.						



7. CONCLUSION

Conclusion

- Learning Objectives
- Program Outline
- Recommendations (What To Do Next)
- Back-Up Materials

Learning Objectives

- Gain a big-picture perspective on handling construction defect litigation from a developer or general contractor perspective.
- Review Case Studies of numerous project types.
- Look at actual project deliverables.

Program Outline

1. Introduction
2. Preliminary Analysis
3. Analysis
4. Detailed Analysis
5. Allocation & Mediation
6. Deposition & Trial
7. Conclusion

Recommendations (What To Do Next)

- I'm a consultant, so it's my job to tell you what you should do.
- Read these course materials over one more time in the next month.
- Convince me we should do a two-day program somewhere in the Coachella Valley this winter.

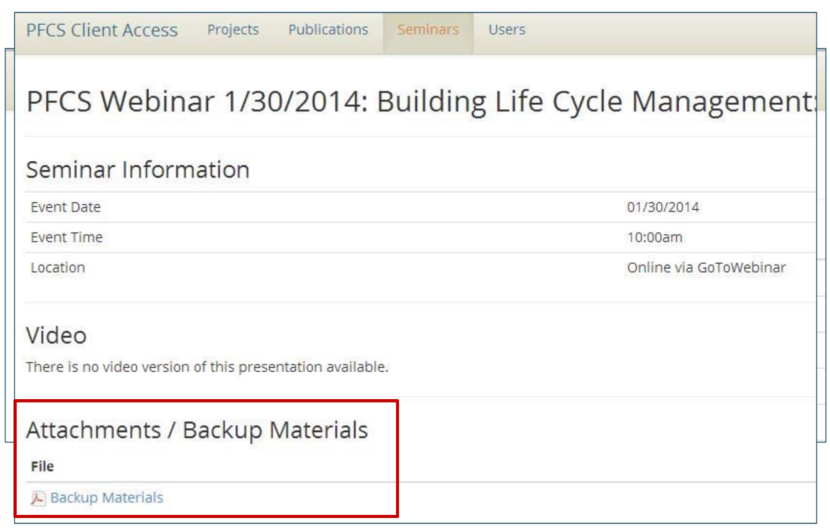
7. CONCLUSION

Back-Up Materials

1. Common Construction Defects 1998
2. Managing Expert Costs 2008
3. Managing Construction Quality 2009
4. Level 5 Estimating 2009
5. Portfolio Management of Construction Claims 2011
6. SB 800 Introduction and Summary: CA Builders Right To Repair Law 2011
7. Everybody Has A Plan 2015

7. CONCLUSION

Webinar Materials



Read about industry impacts on our blog at **www.petefowler.com**

7. CONCLUSION

CE CERTIFICATES WILL BE SENT OUT WITHIN 3 BUSINESS DAYS

(There is no need to contact us, Certificates of Attendance are sent to all who logged in for the seminar).

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7. CONCLUSION

Your Feedback is Important

SURVEY SAYS!

You will receive a survey link immediately following the webinar. We put a lot of effort into providing these programs free of charge, we just ask that you take a few seconds to leave your feedback on today's presentation

Read about industry impacts on our blog at **www.petefowler.com**

Join us for our next WEBINAR:

Construction Defects from the Cross-Defendant/Third-Party Perspective

Thursday November 19, 2015

Pete Fowler CONSTRUCTION Services, Inc.

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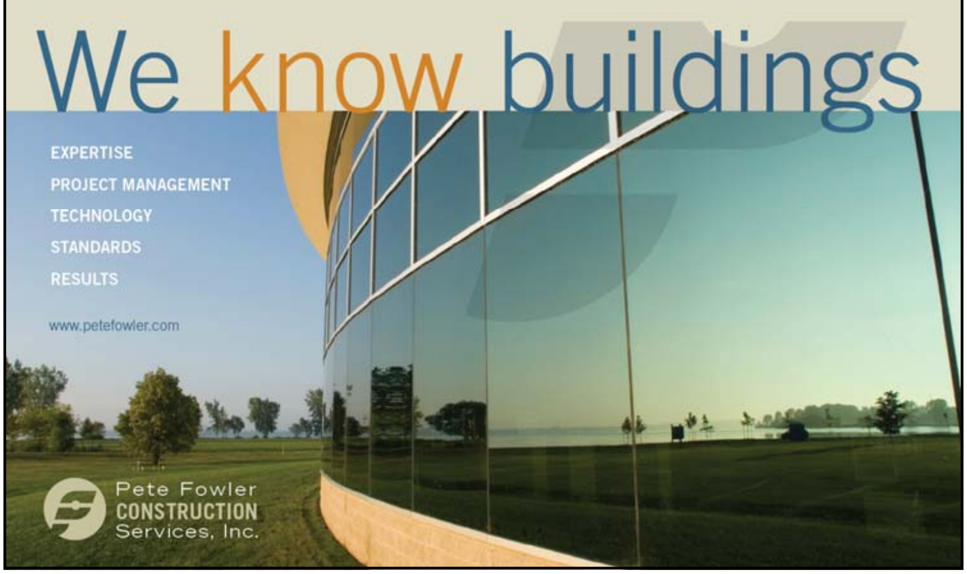
End



Pete Fowler CONSTRUCTION Services, Inc.

Everybody Has A Plan

Date: 10/27/2015
To: FILE
From: Pete Fowler Construction Services, Inc.
Project: PFCS Company Strategy & Planning (PFCS 00-034)
Regarding: Everybody has a plan

Everybody has a plan...

In the shrewd words of Mike Tyson... "Everybody has a plan... Until they get punched in the face." But let's be honest; not everyone has a plan. Lots of people prefer the "hope and prayer method" of success. I had a business coach who would say to me "Hope is not a strategy." But I always quipped back, yes it is! It's just a bad strategy!!

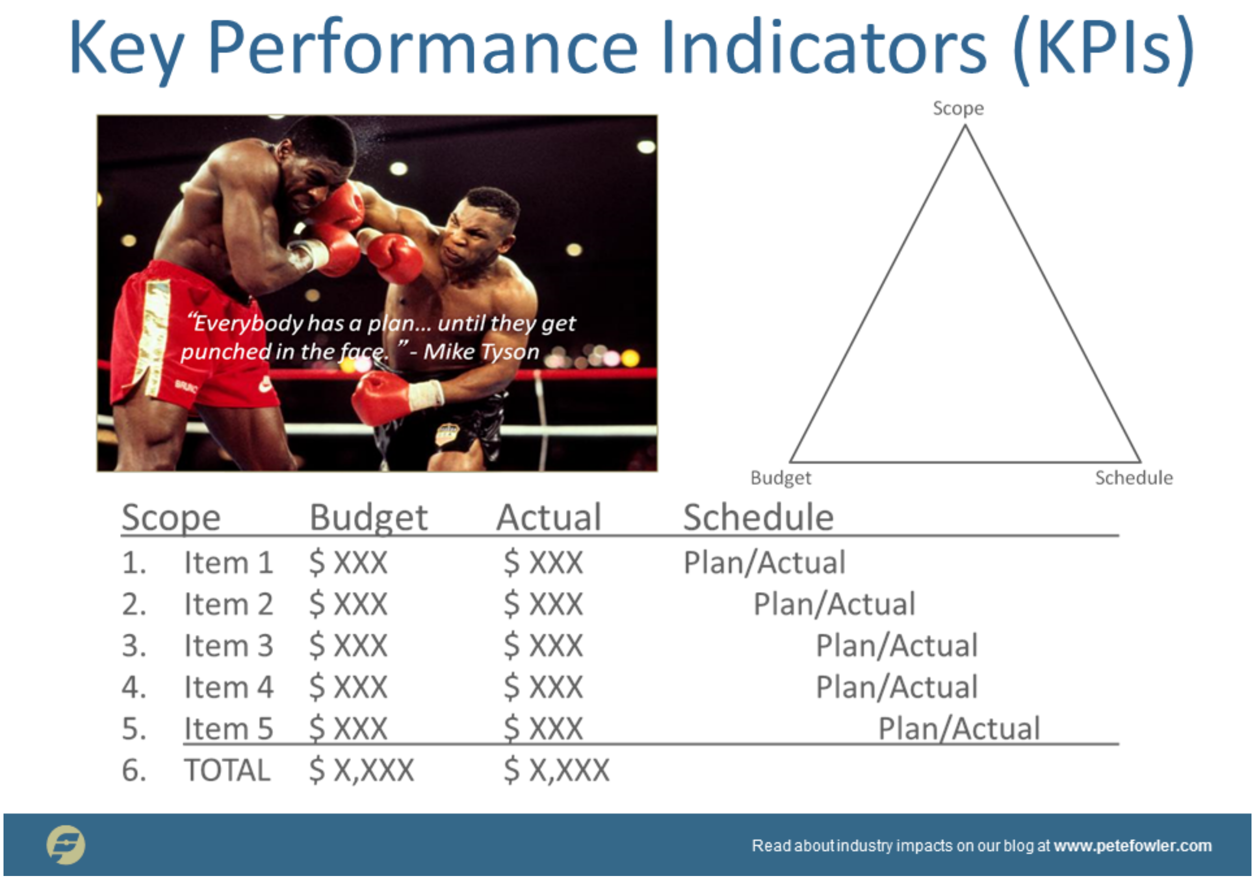
I use the slide above when teaching project management. But it's just as applicable to managing a business. And Key Performance Indicators (KPIs) are critical for both.

Here is my take on KPIs and using dashboards to share them:

- Comparison of plan to performance is critical for high-performing organizations;
- To compare plan to actual, you must first have a plan, with numbers in it;
- Regular review of the performance measures needs to include the goal and actual performance compared to that goal;
- It's best when the current performance is also compared to similar periods like the previous month, quarter or year;
- When reviewing and explaining performance measures, always work from large to small. That is, from the big picture toward the details. Think Google Earth: Globe. Hemisphere. Continent. County. State. County. City. Neighborhood. Roof top.

Expect the plan to change, but always compare your performance to the plan. Structure the plan so that you can set realistic, written goals, and compare your performance to that goal. The structure of the plan and the key performance indicators is a long and difficult struggle for many organizations; it's worth it. All high performing teams have measures for the activities and outcomes that are critical for success. And they stay focused on those numbers.

Images



Other - Tyson_Everyone_has_a_plan_2014-01-30_A.png