

## Introduction

Analyzing Construction Defects is for anyone faced with construction litigation related to physical problems or allegations of defects in buildings or construction. We will explain what a construction defect is, how the process of construction defect litigation flows, present a framework for working through the complexity of potential defects and the issue-by-issue analysis of each potential defect, and discuss appropriate investigation standards.

This program is for attorneys, adjusters, property managers, building professionals, and others involved in construction or real estate; as they are likely to face an insurance claim or litigation at some point. Indeed, many such professionals deal with construction related claims as a common occurrence in the course of their work.

## Learning Objectives

1. Introduce the world of construction defect (CD) litigation.
2. Review CD Case Studies.
3. Discuss the difficulty of defining the term **Construction Defect**.
4. Explain information to be gathered and organized to make the analysis as easy and complete as possible.
5. Introduce the PFCS Solving Building Problems Method.
6. Discuss how issues or allegations can be organized and analyzed in a systematic way, one-by-one.
7. Demonstrate how **Issues** in a Work Breakdown Structure aid in analysis.
8. Introduce common **Deliverables** created during a defect analysis.

## Who We Are

Pete Fowler Construction Services, Inc. (PFCS) is a team of building consultants who aid clients with all types of building problems: from physical building performance to building process issues such as planning or disputes. Our services include expert construction consulting, inspection and testing, estimating, construction management, training, and testimony. Our team is the best in the business and we use our unique systems to develop and deliver comprehensive solutions that steward our clients through their situation in the fastest, most cost effective way. PFCS creates actionable information that everyone can understand and use to make informed decisions.

## Program Outline

1. Introduction
2. Construction Defects
3. Construction Defect Litigation
4. Solving Building Problems
5. Issues (Analysis Framework)
6. Analyzing Construction Defects
7. Conclusion

## Back-Up Materials

1. Orientation to PFCS Systems (3 pages)
2. Common Construction Defects (10 p.)
3. Sample Deliverables Package (17 p.)
4. Solving Building Problems (10 p.)
5. Work Breakdown Structure (4 p.)
6. Communicating in Writing and Opinion Letter Generation (19 p.)
7. Answering the Tough Questions (3 p.)

## Program Contents

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  - C. Learning Objectives
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  6. TBA
  7. TBA
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  7. Telephone Conference
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  9. Follow-Up At 12-Months

Analyzing Construction Defects

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P e t e F o w l e r  
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# Analyzing Construction Defects

Pete Fowler Construction Services, Inc.

## 1. Introduction

- A. Program Outline
- B. Case Study
- C. Program Introduction
- D. Learning Objectives
- E. Who We Are: PFCS
- F. Who We Are: Audience

## A. Program Outline

1. Introduction
2. Construction Defects
3. Construction Defect Litigation
4. Solving Building Problems
5. Issues (Analysis Framework)
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7. Conclusion

## B. Case Study



## B. Case Study

- Second owners of a high-end, semi-custom, 6,000 square foot single family residence in S-CA. Original owners sold after one year making a significant profit.
- Slab-on-grade, wood siding, masonry veneer wainscot, vinyl windows, composition shingle roof, French doors, wood and carpet floors, poor quality cabinets with fine finish doors.
- Constructed by a partnership between an architect and a contractor in a six home subdivision.
- Many irregularities during the planning period regarding investigation into the capacity of the soil to accommodate the septic system requirements of homes this large.
- Second owners had immediate trouble with the plumbing/sewer system.
- As time went on, the owners had many other problems with the residence. We reviewed complaints and information delivered.
- Conducted visual investigation and concluded there were significant problems that were worth pursuit.

## B. Case Study



## B. Case Study

- Created an Issues List and a Room Schedule to identify where the issues occurred. Some of the issues included: site drainage, fencing deterioration, vapor emission through the concrete slab damaging the wood floor, retaining wall with inadequate drainage, masonry wainscot improperly installed at building walls, minor roofing problems, siding improperly installed, weather resistive barrier improperly installed, cabinet damage, improper flashing, inadequate rain gutters, door leaks, window leaks, plumbing problems and leaks, HVAC problems, and electrical problems.
- Conducted invasive investigation.
- Composed a Repair Estimate and issue by issue Report.
- Presented our findings at a meeting of all parties including defendants and cross defendants.
- Attended mediation process. Minor parties settled out of the litigation.
- Builder and their insurance company agreed to make repairs consistent with our findings.

## C. Program Introduction

Analyzing Construction Defects is for anyone who is faced with or might have to deal with construction litigation related to physical problems or allegations of defects in buildings or construction. We will explain what a construction defect is, how the process of construction defect litigation flows, present a framework for working through the complexity of potential defects and the issue-by-issue analysis of each potential defect, and discuss appropriate investigation standards.

This presentation is for attorneys, adjusters, property managers, real estate professionals and anyone else involved in construction or real estate; as they are likely to face a major construction or disclosure related insurance claim or litigation at some point in their careers. Indeed, many such professionals deal with construction related claims as a common occurrence in the course of their work.

## D. Learning Objectives

1. Introduce the fascinating world of construction defect (CD) litigation and the major players.
2. Review CD case studies.
3. Discuss the difficulty of defining the term **Construction Defect**.
4. Explain what information should be gathered and organized to make the analysis as easy and complete as possible.
5. Introduce the PFCS Solving Building Problems Method.
6. Discuss how issues or allegations can be organized and analyzed in a systematic way, one-by-one.
7. Demonstrate how **Issues** in a Work Breakdown Structure aid in analysis.
8. Introduce common **Deliverables** created during a defect analysis.

## E. Who We Are: PFCS (1 of 2)

Pete Fowler Construction Services, Inc. (PFCS) is a team of building consultants who aid clients with all types of *building problems*: from physical building performance to building process issues such as planning or disputes. Our services include expert construction consulting, inspection and testing, estimating, management, training, and testimony. Our team is the best in the business and we use our unique systems to develop and deliver comprehensive solutions that steward our clients through their situation in the fastest, most cost effective way (this is the objective of our construction claim consulting model). PFCS creates actionable information that everyone can understand and use to make informed decisions.



### E. Who We Are: PFCS

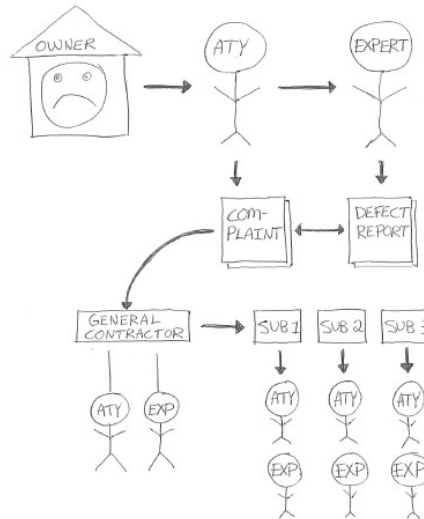
#### PFCS Services (2 of 2)

1. Construction Cost Estimating & Budgeting
2. Construction Management & General Contracting
3. Property Inspection, Testing, Assessment & Analysis
4. Construction Claims
5. Training, Education & System Development
6. Expert Witness, Mediation & Testimony

### F. Who We Are:

Audience

Other?



## Introduction

Pete Fowler Construction Services, Inc. (PFCS) is a team of consultants with expertise in all phases of building construction including design, estimating, construction management, inspection, testing, repair, construction defect forensics, and training. We specialize in delivering professional solutions for building projects in distress, dispute, or litigation, and in expert witness testimony. We listen to our client's individual needs, evaluate their situation, and use our unique systems to deliver comprehensive solutions with excellence, value, and integrity. Our methods are designed to guide clients through their situation in the fastest, most cost effective way, creating actionable information everyone can use to make informed decisions.

## How We Work

The organizational glue that binds our service offerings is project management discipline combined with technical-standards based systems. The combination helps us maintain consistency across all products. Virtually all our services involve project-by-project solutions. Systematization of each service type is critical. Before trying to create our own systems we look first for industry standards.

The fundamentals in what we do are virtually identical across all services and include (A.) tracking and billing time, (B.) time and task management, (C.) delegation and meeting management, (D.) collecting, organizing, summarizing and explaining construction information, (E.) corporate look and feel, (F.) project planning and management, (G.) our training strategy, and (H.) communicating in writing.

## Project Management

Excellence in project-based companies begins and ends with disciplined project management. We teach and use accepted fundamentals of Project Management from organizations such as ANSI, Project Management Institute and the U.S. Department of Defense. We begin with a standard framework for establishing the roles, goals, scope, budget, schedule, actions and reporting for every project, and then we apply the most applicable problem-solving standard.

## Industry Standards

Standards are best practices that help us in systematic problem-solving, doing excellent work, and quality control. We use building codes and standards from sources including International Code Council (ICC) and its predecessors, the American Society of Testing & Materials (ASTM), American National Standards Institute (ANSI), International Organization of Standardization (ISO), the American Society of Professional Estimators (ASPE), and others. We also use the MAP Management Method for business management.

## PFCS Standards

We have a standard for each of our services including (1.) Building Wall Design, Construction, Inspection, Testing, Performance and Quality Control, (2.) Solving Building Problems / Analyzing Construction Defect Claims, (3.) Expert Witness Success!, (4.) our ESTIMATING Method, (5.) the DBSKCV Construction Management Method (including Construction Document Literacy and Contracting 101), and (6.) the PFCS Presentation Development Method.

## Putting It Together

All our projects have a Project Coordinator responsible for keeping all information organized and actions moving forward, and a Technical Expert or Lead responsible for content and technical execution. They work together to lead the Project Team in a Project Planning Meeting to create a Project Plan where the Objective, Method, and Milestones are memorialized, then Actions are identified, the scope, budget and schedule are updated and the plan is executed by team members, scrutinized by the Technical Lead and followed-up to conclusion by the Project Coordinator. Standardized reporting happens in recurring Project Status Meetings or Status Reports.

All projects begin with a Project Planning Meeting using our planning program called the "OMMA-Goodness! Project Planning and Management Framework" (a mnemonic for Objective, Method, Milestones and Actions).

Although they are our most complex, Construction Consulting projects all have a similar OBJECTIVE: "We collect data, analyze it to create actionable information, and present it in a way that everyone, including non-technical decision makers, can understand and use to get to the end of the situation as quickly and inexpensively as possible, while maintaining unwavering integrity." The METHOD we use is called "Solving Building Problems", a 10-step process with a "Menu of Deliverables" that might be created during our work. Typical MILESTONES or deliverables include: Document Index, Project Plan, Project Summary memo, Contract Summary, Issues List, Locations Matrix, Cost Summary, Investigation Recommendations, Inspection Documentation, Opinion Letter, Issues-Locations Matrix, and Issue Analysis Report. ACTIONS are steps to create the deliverables. We identify all actions required to complete

Milestones, then identify who will take the actions and estimate their duration; we then have a budget based on a manageable, action-oriented plan.

Construction consulting projects regularly require building performance analysis and we often compare our work to others. Our investigation and analysis standards are in a PFCS training called "Building Wall Design, Construction, Inspection, Testing, Performance and Quality Control" which refers to ASTM standards like E2018 Guide for Property Condition Assessments, E2128 Guide for Evaluating Water Leakage, and E1105 Test Method for Water Penetration of Windows and Doors. We assess performance and construction by comparing findings to E241 Guide for Limiting Water Damage and E2266 Guide for Design and Construction of Building Walls, as well as manufacturer instructions and other industry standards of practice and performance. If our analysis requires estimating, we compose a construction cost estimate conforming to the ASPE Standard Estimating Practice (SEP) and the PFCS ESTIMATING Method.

As mentioned, we follow-up on project performance with Project Status Meetings where we compare performance to plan, including measurement of completion on deliverables and milestones (the Scope of Work) compared to budget and schedule. We utilize the standards in our "Expert Witness Success!" program for those projects which require the delivery of expert testimony. By the end of Construction Consulting projects, we often present our analysis in reports or verbally and with visual aids in meetings, mediation, deposition, arbitration, or trial. These projects usually conclude through negotiation and sometimes by verdict.

## PFCS Standards

1. Building Wall Design, Construction, Inspection, Testing, Performance and Quality Control
2. Solving Building Problems / Analyzing Construction Defect Claims
3. Expert Witness Success!
4. ESTIMATING Method (10-Steps in 4-Levels)
5. DBSKCV Construction Management Method (including Construction Document Literacy and Contracting 101)
6. Presentation Development Method
7. Introduction to Building Codes and Standards
8. MAP Management Method
9. Fundamentals (see 40 Hours in 40 Days Training for A-G)
  - A. Billing Your Time
  - B. Time and Task Management (Also see Weekly Planning)
  - C. PFCS Delegation, Negotiation and Meeting Management
  - D. Collect, Organize, Summarize, and Understand All Pertinent Data
  - E. PFCS Corporate Look and Feel
  - F. Project Planning & Management: OMMA-Goodness! Project Management Framework
  - G. PFCS Training Strategy
  - H. Communicating in Writing

## 2. Construction Defects

- A. Case Study
- B. Construction Defects Defined
- C. Defect, Problem, Allegation or Issue Continuum
- D. Standards of Care and Standards of Practice
- E. References for Standards of Care and Standards of Practice
- F. Common Building Performance Problems
- G. Common Construction Defects
- H. More Discussion

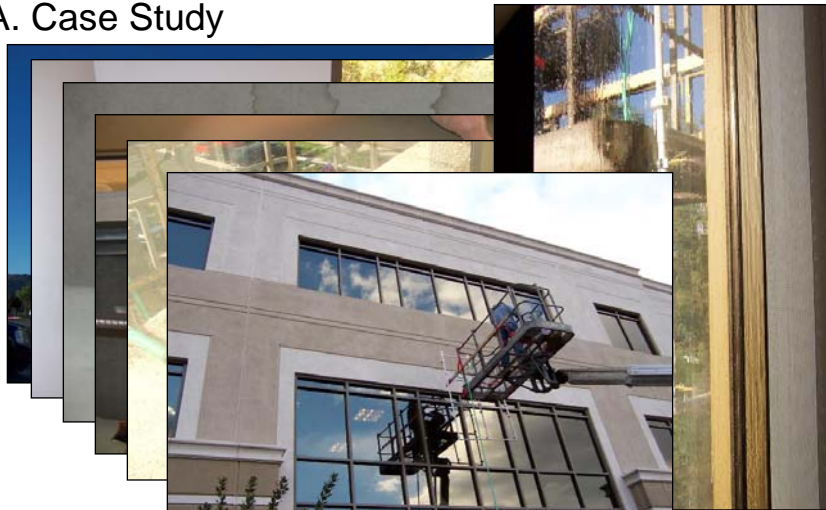
## A. Case Study



## A. Case Study

- Architect contacted PFCS to conduct a moisture investigation on a 30,000 sq. ft., three story, Class A commercial building in Murrieta.
- The building is steel framed, stucco exterior with commercial block framed windows and a flat roof. Walls have aluminum reglets, pot shelves and slate tile columns.
- The interior was leased out and a property management firm operated the building for the owner, who was also a tenant.
- PFCS completed a Visual Inspection/Assessment to determine potential sources of the water intrusion. A Report was delivered to Owner outlining Issues and Recommendations for testing of the windows.
- PFCS conducted testing and found water intruding below the pot shelves.
- The General Contractor repaired the cracks in the stucco, re-caulked and repainted the elastomeric finish, and the windows passed a second round of spray testing.
- PFCS prepared a report recommending further investigation because the caulking and paint was only a temporary repair.

### A. Case Study



### A. Case Study

- The Owner contacted PFCS after the rainy season to request further evaluation of the building due to continuing leaks in many locations.
- PFCS conducted a review of the original construction drawings and determined that if the building was built to the drawings, the windows would have leaked.
- PFCS prepared a Proposal for spray testing per ASTM E-1105 and destructive testing when leaks were found to determine the sources of the water intrusion. Testing was conducted and all windows tested leaked from multiple causes, including window flashing and reglett flashing. The windows were not installed according to the original drawings and no RFIs had been written to the Architect requesting clarification.
- The General Building Contractor agreed to repair the building out of his own pocket, utilizing the original subcontractors. The Architect agreed to provide revised detail drawings reflecting proper flashing of the windows and regletts.
- PFCS coordinated the weekly planning meetings with all parties to plan the removal of all the stucco and regletts.

## B. Construction Defects Defined

- **Construction:** 1. (Noun) To make or form by combining or arranging parts or elements. 2. To draw (a geometrical figure) with suitable instruments and under specified conditions. 3. To set in logical order.
- **Defect:** 1.(Noun) An imperfection that impairs worth or utility: shortcoming <the grave *defects* in our foreign policy>. 2: An imperfection (as a vacancy or an unlike atom) in a crystal lattice. 3. Latin *defectus*]: A lack of something necessary for completeness, adequacy, or perfection: deficiency <a hearing *defect*>.
- **Construction Defect: ??**

## B. Construction Defects Defined

PFCS (First Draft): The failure of a building assembly to be constructed in a reasonably workmanlike manner AND a failure to perform in a manner that should be reasonably expected by the buyer, owner or user. A condition which makes the property unsuitable for its intended use, or causes damage such that the expected service life is shortened unreasonably or an unreasonable maintenance burden is caused.

- The questions are: Was it constructed consistent with some reasonable standard? Is it performing well *in service*? Is the cure worse than the disease?
- NOTE: In December, 2000 a California Supreme Court ruling (Aas V Superior Court) severely limited homeowner claims to only those defects which have resulted in "actual damage." New California legislation, in the form of SB 800, reversed some of the effects of the Aas ruling, however the new rules apply to homes built after January, 2003.



### C. Defect, Problem, Allegation or Issue Continuum

- Perceived, causing damage, and significantly affecting use or enjoyment.
- Perceived, causing damage, but not significantly affecting use or enjoyment.
- Not- Perceived by Owners, but causing damage.
- Not- Perceived by Owners, not causing damage, but could affect performance under certain conditions (such as life- safety in a catastrophic event).
- Not- Perceived by Owners, not causing damage, and not likely to affects performance (such as minor variance from some technical code or standard).
- Not- Perceived by owners, not causing damage, and not likely to affect performance, and not a violation from standard.

### D. Standards of Care and Standards of Practice

- Standard of Care: 1. what a reasonable practitioner would do with the same or similar circumstances. 2. the watchfulness, attention, caution and prudence that a reasonable person in the circumstances would exercise.  
(<http://legal-dictionary.thefreedictionary.com> )
- Standard of Practice: 1. The Standards of Practice represent minimal behavioral statements of the Code of Ethics (<http://www.cacd.org/codeofethics.html>). 2. Under the current California law physicians are required to practice within the accepted "standard of practice." Standards of practice are not defined within the law, they are considered to be what most of the individuals within the profession do (<http://www.citizenshealth.org/alternativebill.htm>)

## E. References for Standards of Care and Standards of Practice

### PROFESSIONAL PRACTICE

- Contractor's License Law
- Architect's Handbook of Professional Practice
- ASPE Standard Estimating Practice and Code of Ethics
- ASCE Standards of Professional Conduct for Civil Engineers
- Many Others

### BUILDING PERFORMANCE

- SBC 800
- UBC
- ICC
- IRC
- AAMA

## E. References for Standards of Care and Standards of Practice

### INSPECTION

- UBC
- ICC
- IRC
- CREIA
- NAHI
- ASTM E 2018 Property Condition Assessment
- ASTM E 2112 Window & Door Installation

### TESTING

- UBC
- ICC
- IRC
- ASTM E 1105 Window Testing
- Standard E 331 Window Testing
- E 2128 Leak Investigations
- AAMA 502-02 (& previous)

## F. Common Building Performance Problems

1. Civil / Drainage: Grading, Drainage, Roof Drainage, Below Grade Waterproofing
2. Roofs & Horizontal Assemblies: Roofs, Decks, Projections
3. Building Walls: Walls, Doors, Windows
4. Mechanicals: Plumbing, HVAC, Electrical
5. Indoor Environment / Use: Ventilation, Humidity, Bathrooms, Kitchens, Maintenance, Abuse
6. Combination of Above (very common)

## G. Common Construction Defects

### Common Construction Defects



Since the early 1970s, the Southern California building industry has been engulfed in a bitter fight, spawned by substandard construction during the region's 1980s building boom, construction defect litigation has become a full-fledged "subversive," with many architects, engineers, and former building contractors now working full time at construction defect consulting agencies, acting as advocates for homeowners. Like those experts in the effort to prove that the odds workmanship is causing new homes to require deconstruction. Meanwhile, the home building industry, put on the defensive, is claiming that the real problem is some reckless attorneys who are feeding off the media coverage and exploiting the legal system. The reality is probably somewhere in between. Inquiries, residential construction in Southern California has never

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

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