Quality Control for Construction Maintenance, Repairs & Improvements

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Pete Fowler
CONSTRUCTION
Services, Inc.

Pete Fowler CONSTRUCTION Services, Inc.

Quality Control for Construction Maintenance, Repairs & Improvements

INTRODUCTION

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.

Construction professionals are now living in a new world. Consumers expect higher quality for lower prices, and are more litigious than ever before. In addition, the built-environment has been altered in the last 25 years to include increased complexity, less fault-tolerance, and tighter, slower-drying buildings.

PROGRAM OUTLINE

1. Introduction
2. Quality & Risk
3. Lifecycle Management
4. Contracting 101
5. Managing Construction Quality
6. The Real World
7. Conclusion

LEARNING OBJECTIVES

- Introduce Quality Control Generally
- Discuss the role of quality in risk management and Building Lifecycle Management
- Apply the fundamentals of Quality Management to Construction Contracting
- Review Construction Quality Control Projects

BACK-UP MATERIALS

1. Managing Construction Quality
2. DBSKCV Construction Management Method
3. Managing Property Maintenance & Improvement

PROGRAM CONTENTS


We know buildings
EXPERTISE
PROJECT MANAGEMENT
TECHNOLOGY
STANDARDS
RESULTS
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10/23/2014

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PFCS: Who We Are

SOLUTIONS

Pete Fowler Construction Services (PFCS) specializes in creating REAL PRACTICAL SOLUTIONS for property owners & managers, builders & developers, construction contractors, product manufacturers & suppliers, lawyers and insurers.

PFCS: We Know Buildings

1. INTRODUCTION

PFCS: We Know Buildings

CLIENTS

- Property Owners & Managers
- Builders & Developers
- Contractors
- Product Manufacturers
- Insurers
- Lawyers

The PFCS Way

The PFCS Way

ON ALL PROJECTS

Building Information Management: We pick up where Zillow and Google leave off. We use technology to collect, organize, structure and store documents and building info forever.

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?

Manage Quality: We apply professional construction management discipline to get work done, and create and execute construction quality assurance plans.

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.

PFCS Services

CLAIMS & LITIGATION

- Construction Defect Litigation (Also see BLM)
- General (Property) Liability Claims
- Construction Accidents
- Traditional Claims related to contracts, payments, performance, change orders and delays

BUILDING LIFECYCLE

- Building Inspection, Testing and Property Assessment
- Specifications for Building Maintenance and Repairs
- Construction Budgets and Cost Estimating
- Construction Management
- Quality Assurance Plans and Inspections

Results

- **EXPERTISE:** Our work begins and ends with technical expertise. Thinking hard about creating real, practical solutions that our clients can use to make smart, informed decision is our job.
- **PROJECT MANAGEMENT:** To deliver valuable work with measurable return on investment (ROI), we have to manage the Scope, Budget and Schedule of our work.
- **TECHNOLOGY:** We use proprietary technology to create valuable work faster, better and cheaper, to make the information available to all applicable stakeholders, and to create a permanent digital record at no extra cost.
- **STANDARDS:** To help clients manage building lifecycle performance and costs, we compare each project to industry standards and best practices, then apply professional judgment to develop strategies and step-by-step plans for maximizing ROI for maintenance and repair expenditures.

Program Outline

1. Introduction
2. Quality & Risk
3. Lifecycle Management
4. Contracting 101
5. Managing Construction Quality
6. The Real World
7. Conclusion

1. INTRODUCTION

Introduction

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

Pete Fowler

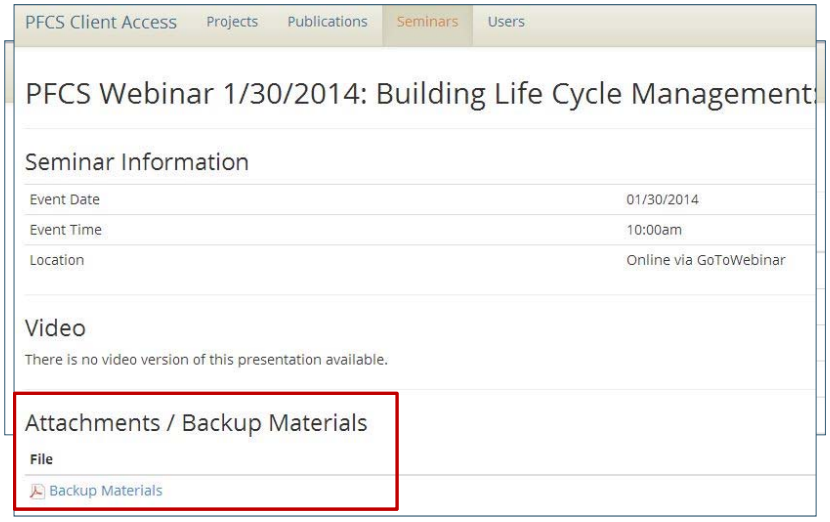
CONNECT WITH PETE

Call 949.240.9971

Email pf@petefowler.com

Find him on LinkedIn!

Webinar Materials

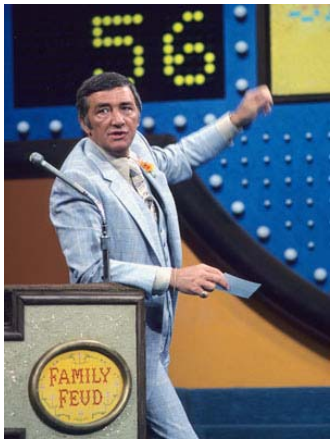


CE CERTIFICATES WILL BE SENT OUT WITHIN 3 BUSINESS DAYS

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

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

Learning Objectives

- Introduce Quality Control Generally
- Discuss the role of quality in risk management and Building Lifecycle Management
- Apply the fundamentals of Quality Management to Construction Contracting
- Review Construction Quality Control Projects

1. INTRODUCTION

Program Introduction

Quality Control is important to Owners because construction is so expensive, poor construction costs more over time, the industry remains widely varying in the levels of professionalism, quality and costs, and the “discount” in cost that owners (only sometimes) get for accepting poor quality not worth the long term costs. A quality system like we describe here is the closest thing to a guarantee of project success the industry has to offer.

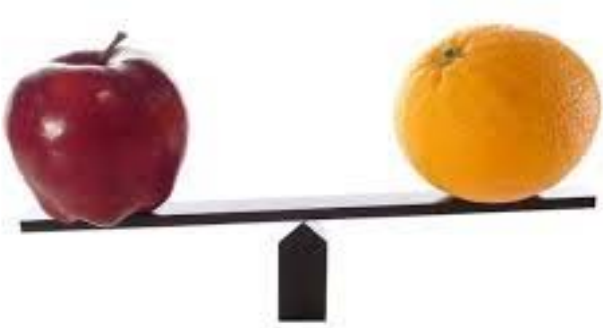
1. INTRODUCTION

Program Introduction

Quality Control in for construction professionals is important because we are living in a new world. Consumers expect higher quality for lower prices, and are more litigious than ever before. In addition, the built-environment has been altered in the last 25 years to include increased complexity, less fault-tolerance, and tighter, slower-drying buildings.

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

Compare & Contrast



2. QUALITY & RISK

Quality

WHAT IS QUALITY?

According to the American Society for Quality, "quality" can be defined in the following ways:

- ✔ Based on customer's perceptions of a product/service's design and how well the design matches the original specifications.
- ✔ The ability of a product/service to satisfy stated or implied needs.
- ✔ Achieved by conforming to established requirements within an organization.

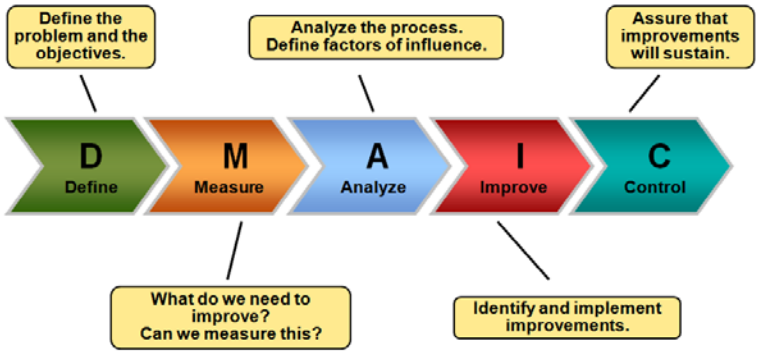
What Is a Quality Management System?

A quality management system is a management technique used to communicate to employees what is required to produce the desired quality of products and services and to influence employee actions to complete tasks according to the quality specifications.

Total Quality Management

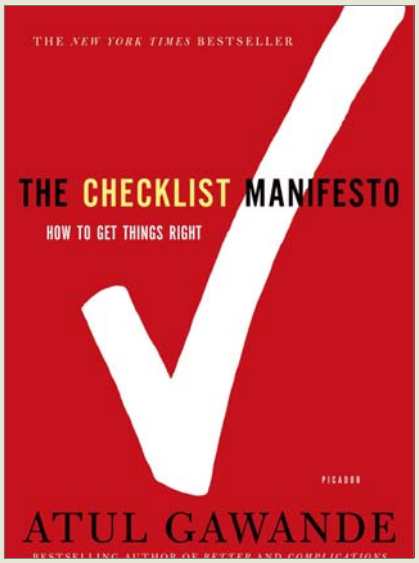
Six Sigma

DMAIC Roadmap



Quality

The Checklist Manifesto



A Simple Quality System

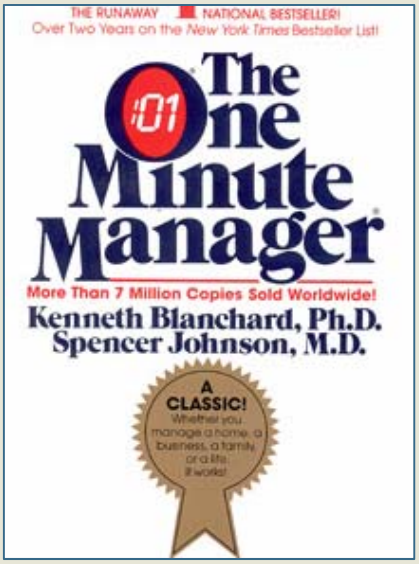
1. Define the real requirements
2. Keep it simple
3. Document Everything
4. Check for understanding
5. Define Key Performance Indicators (KPIs)
6. Measure Results
7. Assign Accountability
8. Simplify then automate
9. Leverage the team
10. Evaluate improvement opportunities

Define "Good Performance"

Think like The One Minute Manager:

What does good performance look like?

What are the rewards for good performance? What are the ramifications for poor performance?



2. QUALITY & RISK

Risk Management

This is a bad risk management strategy.

It also happens to be the strategy most commonly employed.

2. QUALITY & RISK

What is Risk Management?

Mechanism by which risks and uncertainties that threaten success are identified and dealt with.

The ABC's of Risk Management

A. Avoid Potentially Dangerous Situations

B. Be really good at the work you do

C. C.Y.A. (Cover Your Assets)

2. QUALITY & RISK

The ABC's of Risk Management

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

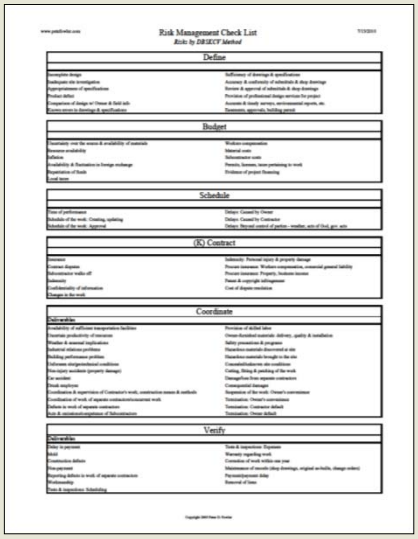
C. The best "coverage" is avoiding problems by delivering work that meets expectations. Just accept buyers expect high quality *and* performance, even when they pay rock-bottom prices, and lawyers expect perfection; the former is hard, but easier than the latter.

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

2. QUALITY & RISK

Risk Identification

RISK MANAGEMENT CHECKLIST



Risk Management Check List

Risks by DBIECV Method

Define

Budget

Schedule

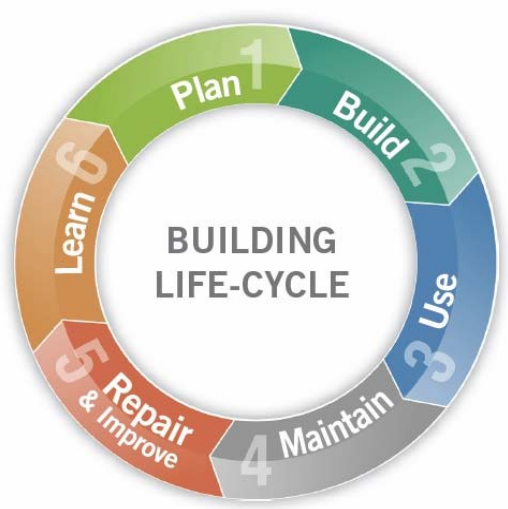
(K) Contract

Coordinate

Verify

3. LIFECYCLE MANAGEMENT

Building Lifecycle Management



3. LIFECYCLE MANAGEMENT

Building Lifecycle Management

WHAT IS IT?

- Wikipedia: Building lifecycle management or BLM is the adaptation of product lifecycle management (PLM)-like techniques to the design, construction, and management of buildings. Building lifecycle management requires accurate and extensive building information modeling (BIM).
- PFCS (First Draft): Actions taken with the intent of making intelligent, proactive decisions about building design, construction, use, maintenance, repair, and improvement, all while considering the entire service-life of the property.

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

Building Lifecycle Management

DEEP THOUGHTS

- Buildings are really expensive.
- Buildings are complicated.
- Building performance evaluation is a specialized profession.
- Making smart decisions about building maintenance, repair and improvements is hard but it saves money.

3. LIFECYCLE MANAGEMENT

Building Lifecycle Management

DEEP THOUGHTS

- To make any smart decision we need good information.
- Most building owners don't maintain good historical documentation related to scope, methods, costs, dates and players involved in maintenance, repair and improvements over their building's life. This hinders optimal decision making and requires "reinventing the wheel" over and over.

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

Building Lifecycle Management

DEEP THOUGHTS

- The business of building maintenance, repair and improvements is messy and inefficient, or really expensive, or both.
- Our system is engineered to help owners make smart decisions about building maintenance, repair and improvements (that is, BLM).

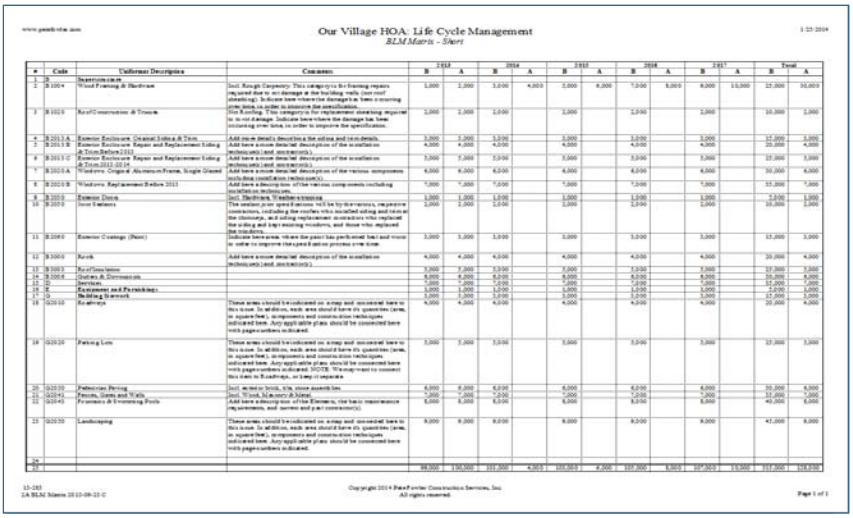
I Have A Dream! (Of Connected Dots)

Building Construction Lifecycle

Plan – Build – Use – Maintain – Decommission

San Onofre Nuclear Power Plant

Building Lifecycle Management Matrix



Our Village HOA: Life Cycle Management
BLM Matrix - Short

#	Code	Uniformat Description	Comments	2013 B	2013 A	2014 B	2014 A	2015 B	2015 A	2016 B	2016 A	2017 B	2017 A	Total B	Total A
1	B	Superstructure													
2	B1004	Wood Framing & Hardware	Incl. Rough Carpentry. This category is for framing repairs required due to rot damage at the building walls (not roof sheathing). Indicate here where the damage is has a recurring problem, in order to improve the specification.	2,000	2,000	3,000	4,000	2,000	6,000	7,000	8,000	9,000	10,000	23,000	30,000
3	B1005	Roof Construction & Trusses	Not Roofing. This category is for replacement sheathing required to re-rot damage. Indicate here where the damage has been occurring over time, in order to improve the specification.	2,000	2,000	2,000		2,000		2,000		2,000		10,000	2,000
4	B2013 A	Exterior Enclosure Original Siding & Trim	Add more detail describing the siding and trim details.	3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
5	B2013 B	Exterior Enclosure Repair and Replacement Siding & Trim Before 2013	Add more detail describing the siding and trim details.	4,000	4,000	4,000		4,000		4,000		4,000		20,000	4,000
6	B2013 C	Exterior Enclosure Repair and Replacement Siding & Trim 2013-2018	Add more detail describing the siding and trim details.	3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
7	B2020 A	Windows: Original Aluminum Frame, Single Glazed	Add more detail describing the siding and trim details.	6,000	6,000	6,000		6,000		6,000		6,000		30,000	6,000
8	B2020 B	Windows: Replacement Before 2013	Add more detail describing the siding and trim details.	7,000	7,000	7,000		7,000		7,000		7,000		35,000	7,000
9	B2030	Exterior Doors	Incl. Hardware, Weather-stripping	1,000	1,000	1,000		1,000		1,000		1,000		5,000	1,000
10	B2050	Store Fixtures	The exterior paint specification will be by the various, responsive contractors, including the roofers who installed siding and trim at the chimneys, and siding replacement contractors who replaced the siding and kept existing windows, and those who replaced the windows.	2,000	2,000	2,000		2,000		2,000		2,000		10,000	2,000
11	B2060	Exterior Coatings (Paint)	Indicate here areas where the paint has performed best and worst in order to improve the next painting process over time.	3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
12	B3000	Roofs	Add more detail description of the installation techniques (and contractors).	4,000	4,000	4,000		4,000		4,000		4,000		20,000	4,000
13	B3003	Roof Insulation		3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
14	B3004	Gutters & Downspouts		6,000	6,000	6,000		6,000		6,000		6,000		30,000	6,000
15	D	Services		7,000	7,000	7,000		7,000		7,000		7,000		35,000	7,000
16	E	Equipment and Furnishings		1,000	1,000	1,000		1,000		1,000		1,000		5,000	1,000
17	G	Building Sitework		3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
18	G2010	Roadways	These areas should be indicated on a map and annotated here to this issue. In addition, each area should have its quantities (area, in square feet), components and construction techniques indicated here. Any applicable plans should be connected here with page numbers indicated.	4,000	4,000	4,000		4,000		4,000		4,000		20,000	4,000
19	G2020	Parking Lots	These areas should be indicated on a map and annotated here to this issue. In addition, each area should have its quantities (area, in square feet), components and construction techniques indicated here. Any applicable plans should be connected here with page numbers indicated. NOTE: We may want to connect this item to Roadways, or keep it separate.	3,000	3,000	3,000		3,000		3,000		3,000		15,000	3,000
20	G2030	Pedestrian Paving	Incl. stone or brick, s/w, stone assemblies	6,000	6,000	6,000		6,000		6,000		6,000		30,000	6,000
21	G2041	Fences, Gates and Walls	Incl. Wood, Masonry & Metal	7,000	7,000	7,000		7,000		7,000		7,000		35,000	7,000
22	G2045	Pavement & Swimming Pools	Add here a description of the Elements, the basic maintenance requirements, and names and past contractor(s).	8,000	8,000	8,000		8,000		8,000		8,000		40,000	8,000
23	G2050	Landscaping	These areas should be indicated on a map and annotated here to this issue. In addition, each area should have its quantities (area, in square feet), components and construction techniques indicated here. Any applicable plans should be connected here with page numbers indicated.	9,000	9,000	9,000		9,000		9,000		9,000		45,000	9,000
24															
25				98,000	136,000	101,000	4,000	101,000	6,000	101,000	8,000	101,000	10,000	511,000	318,000

3. LIFECYCLE MANAGEMENT

Building Lifecycle Management

INTEGRATING DOCUMENTS AND INFORMATION

1. Elements or Components List
2. Property Condition Assessment
3. Maintenance Plan
4. Maintenance Manual
5. Reserve Study
6. Scope of Work
7. Request for Proposal
8. Budget
9. Schedule
10. Contract
11. Construction Management Documentation
12. Warranty Documentation
13. Chart of Accounts (make budget-to-actual comparison easy)

3. LIFECYCLE MANAGEMENT

Why You Should Care

	Total Cost of Ownership		
Issues	With Defects	Without Defects	Difference
1. Substructure	$	$	$
2. Superstructure	$	$	$
3. Interiors	$	$	$
4. Services	$	$	$
5. Equipment & Furnishings	$	$	$
6. Special Construction & Demo	$	$	$
7. Site Work	$	$	$
Total	$	$	$

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

4. CONTRACTING 101

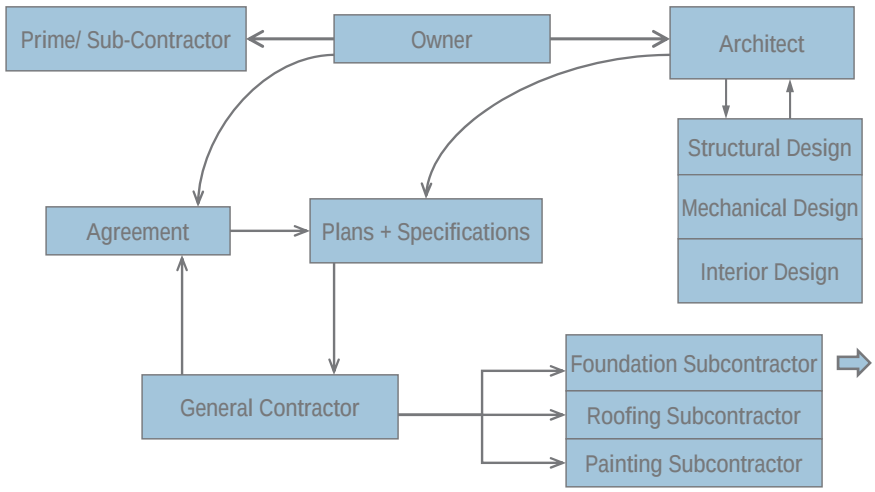
3. LIFECYCLE MANAGEMENT

Why You Should Care

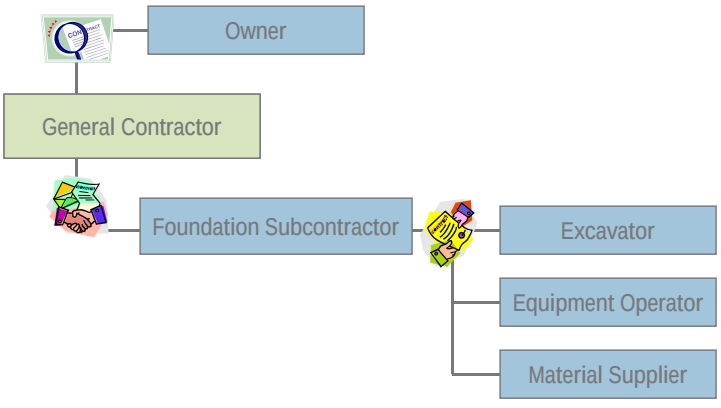
	Total Cost of Ownership		
Issues	With Defects	Without Defects	Difference
1. Substructure	$	$	$
2. Superstructure	$	$	$
3. Interiors	$	$	$
4. Services	$	$	$
5. Equipment & Furnishings	$	$	$
6. Special Construction & Demo	$	$	$
7. Site Work	$	$	$
Total	$	$	$

4. CONTRACTING 101

Contracting 101



Contracting 101



Contracting 101

- The Owner (1.) wants a project, similar to anyone who wants to buy something, such as a car, but with a construction project the product being purchased is not something that is already built.
- The Owner goes to an Architect (2.) to translate his/her desires into a set of documents.
- The Architect works with (3.) Specialty (Sub) Designers such as structural engineers, mechanical engineers and interior designers to place the details in the (4.) Plans and Specifications (Construction Documents) what the Owner wants to buy from a (5.) General Contractor (GC).
- The Plans and Specifications are sent to qualified and interested GCs, who then submit the proposals to the Owner. Ultimately the Owner and a GC compose an (6.) Agreement (or Contract).

Contracting 101

- An Agreement (or Contract) for construction is simply "a promise by the Contractor to deliver what is described in the Plans and Specifications and a promise by the Owner to pay for it."
- The Agreement refers to the Plans & Specifications and should include the Scope of Work including: Inclusions and Exclusions, Allowances, a provision for handling Change Orders, and Payment Milestones or a Schedule of Values. GCs usually hire (7.) Subcontractors, who are specialists in their respective trades, to help deliver what has been promised in the Agreement.
- There is nothing in this scheme which prohibits the Owner from hiring (8.) Prime Contractors (Specialty / Trade / Subcontractor) directly for work that is not in the Scope of Work in the Agreement with the GC.

Prime and Subcontractors

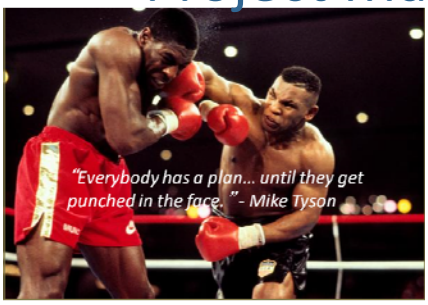
Prime Contracts

- Contracting Directly with the Owner. A prime construction contract is an agreement between the owner and a contractor
- AIA Forms
- Instructions
- Who is doing what?

Subcontracts

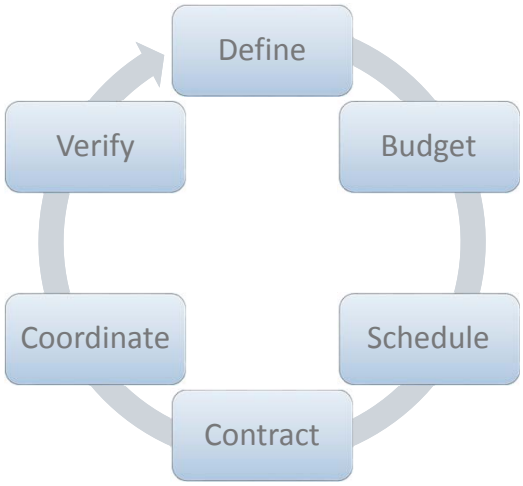
- A subcontract is an agreement between a prime contractor and some other contractor who will perform all or a portion of the work covered in the prime contract. Thus, if an owner contracts directly with a subcontractor, like a painter, this is not a subcontract; it is a prime contract. Prime and subcontractors have different rights and responsibilities.
- AGC and other industry standard forms. See Standard Contract Forms and Suppliers (PDF).

Project Management



Scope		Budget	Actual	Schedule
1.	Item 1	$ XXX	$ XXX	Plan/Actual
2.	Item 2	$ XXX	$ XXX	Plan/Actual
3.	Item 3	$ XXX	$ XXX	Plan/Actual
4.	Item 4	$ XXX	$ XXX	Plan/Actual
5.	Item 5	$ XXX	$ XXX	Plan/Actual
6.	TOTAL	$ X,XXX	$ X,XXX	

DBSKCV Method



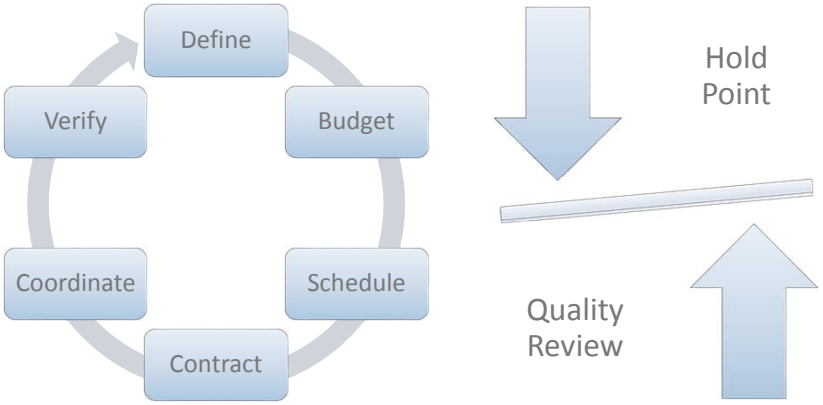
DBSKCV Method

CONSTRUCTION MANAGEMENT METHOD OVERVIEW

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

DBSKCV Method

QUALITY MANAGEMENT THROUGHOUT THE PROCESS



Scope of Work

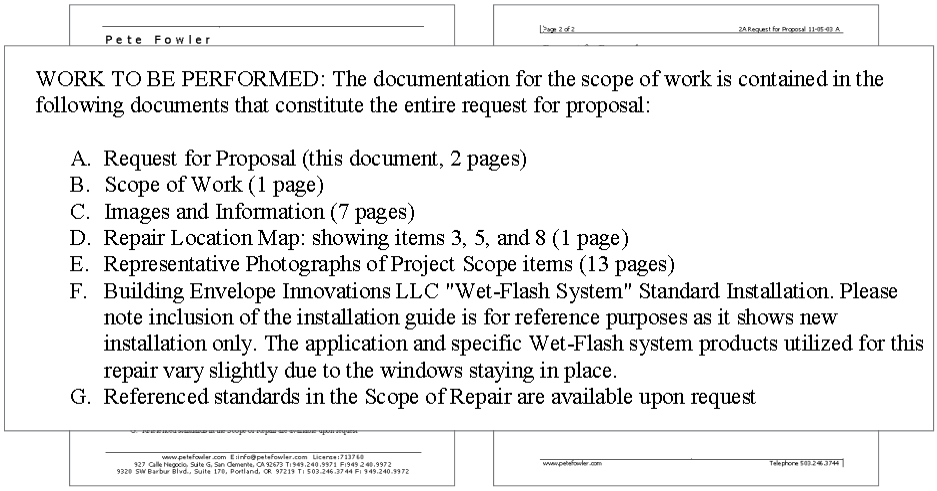
Scope of Work

The written definition of what is being bought and sold. In construction it's 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 a conform to the fundamentals of a 2 or 3 level "Work Breakdown Structure" collectively representing 100% of the project scope.

Sample Scope of Work

Line	Item	Scope Details	Quantity	Order of Magnitude Costs	Schedule: 0 to 6 Months	Schedule: 6 to 12 Months	Photo Reference[1]
1	1	**Cleaning (CSI® 01 74): Vinyl siding**	**All BLDGS**	**$ 2,400**	-	X	AP 2.010 AP 2.020 - AP 2.021 AP 1.155
2	A	Vinyl siding can be cleaned with a power washer at low pressure.					
3	B	To clean all siding with a pressure washer, hold the power washer straight at eye level to keep the water on top of the siding where it can clean most effectively.					
4	C	Do not aim the power washer upward as water may be driven behind the siding.					
5	D	Do not use pressure washer around wall penetrations. Use soft-bristle brush and gently rinse around windows, doors, electrical connections and plumbing.					
6		*Additional Comments: Maintenance procedure is based on the Vinyl Siding Institute's article "How to Clean".*					
7							
8	2	**Rough Carpentry (CSI 06 10): Repair of damaged OSB (OSB = Oriented Strand Board; the wood sheating comprising the exterior wall) below window sill. Connected to Item 5 - see below.**	**15% (11-13 Windows)**	**$ 750**	X	-	AP 2.484 - AP 2.487
9	A	Removal of siding panels below window sills. This scope is covered in Item 5.					
10	B	Exploration of substrate below window sill is required due to a high exposure condition.					
11	C	If damage is identified, continue to expose OSB in order to determine amount of replacement required.					
12	D	Replace damaged OSB. Utilize a nailing pattern as required by structural specifications.					
13	E	Install weather-resistive barrier (WRB) in a weatherboard manner.					
14		*Additional Comments: Condition occurs at approximately 15% of openings below window*					
15							
16	3	**Rough Carpentry (CSI 06 10): Treat Exposed OSB**	**2 BLDGS**	**$ 550**	X	-	AP 2.017, AP 2.126
17	A	Remove siding around exposed OSB to inspect for SWI (Signs of Water Intrusion).					
18	B	Treat OSB with a "waterproofer" product such as Thompson's WaterSeal Advanced Clear Multi-Surface Waterproofer or like product. Follow manufacturers application instructions					
19	C	Install WRB in weatherlapped manner to cover all exposed OSB.					
20	D	Install siding in a manner that covers all exposed OSB.					
21		*Additional Comments: Condition occurs at garage portals at two building (Bldgs A and D)*					
22							
23	4	**Roofing (CSI 07 30): Moss and Algae Removal from Asphalt Roofing Shingles.**	**9000 SF**	**$ 3,100**	X	-	SN 1.164 AP 2.157 AP 2.162 - AP 2.166

Request for Proposal / Invitation to Bid



Pete Fowler

WORK TO BE PERFORMED: The documentation for the scope of work is contained in the following documents that constitute the entire request for proposal:

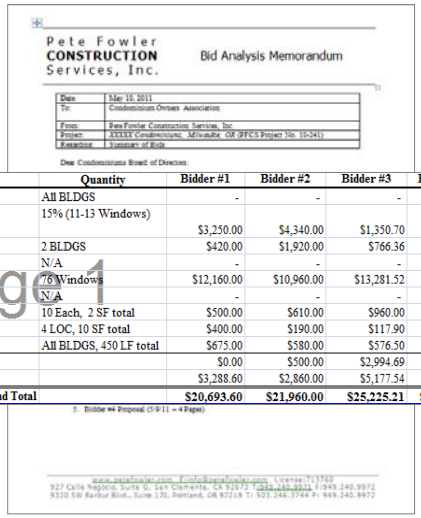
A. Request for Proposal (this document, 2 pages)
B. Scope of Work (1 page)
C. Images and Information (7 pages)
D. Repair Location Map: showing items 3, 5, and 8 (1 page)
E. Representative Photographs of Project Scope items (13 pages)
F. Building Envelope Innovations LLC "Wet-Flash System" Standard Installation. Please note inclusion of the installation guide is for reference purposes as it shows new installation only. The application and specific Wet-Flash system products utilized for this repair vary slightly due to the windows staying in place.
G. Referenced standards in the Scope of Repair are available upon request

Finding Qualified Bidders: Sample Script

We are requesting bids from general contractors to perform work that involves the repair of a failing property line retaining wall between two properties in the Silver Lake area of Los Angeles, with a vertical elevation difference of approximately 9’ 0”. Access will limit the type of equipment and method of repair. The repairs include underpinning the house with helical anchors, replacing a section of retaining wall that is 9’ at its highest point with 2 caissons to support the wall, waterproofing at the back side of the new wall, site drainage, stucco on the new wall, an iron fence / guardrail, and replacing concrete flatwork.

- Do you do this kind of work? If no, then do you know anyone who does?
- Are you interested in bidding such a project? If no, then do you know anyone who does?
- Are you licensed and insured to do this kind of work?
- Do you have references that would vouch for you for similar projects?
- Can I e-mail a Request for Proposal that has all of the bid-documents included?
- How quickly could you get us a bid? How about if we had all of the Quantity Take Off completed already (then how fast)?

Analyzing Bids



Pete Fowler CONSTRUCTION Services, Inc.

Bid Analysis Memorandum

Date:	May 10, 2011
To:	Condominium Owners Association
From:	Pete Fowler Construction Services, Inc.
Project:	XXXXX Condominiums, Milwaukie, OR (PFCS Project No. 10-241)
Reference:	Summary of Bids

Dear Condominiums Board of Directors:

Line	Item	Description	Quantity	Bidder #1	Bidder #2	Bidder #3	Bidder #4
1	1	Cleaning (CSI 01 74): Vinyl siding - OMMITTED	All BLDGS	-	-	-	-
2	2	Rough Carpentry (CSI 06 10): Repair of damaged OSB below window sill. Connected to Item 5 - see below.	15% (11-13 Windows)	$3,250.00	$4,340.00	$1,350.70	$2,731.00
3	3	Rough Carpentry (CSI 06 10): Treat Exposed OSB	2 BLDGS	$420.00	$1,920.00	$766.36	$14,633.00
4	4	Omitted	N/A	-	-	-	-
5	5	Siding (CSI 07 46): Leaks at corners of Window Sill.	76 Windows	$12,160.00	$10,960.00	$13,281.52	$24,472.00
6	6	Omitted	N/A	-	-	-	-
7	7	Siding (CSI 07 46): Siding Corner Trim Components	10 Each, 2 SF total	$500.00	$610.00	$960.00	$1,725.00
8	8	Siding (CSI 07 46): Siding Warping due to Reflected Sunlight	4 LOC, 10 SF total	$400.00	$190.00	$117.90	$5,520.00
9	9	Flashing and Sheet Metal (CSI 07 61): Lifting Roof to Wall Metal Flashing	All BLDGS, 450 LF total	$675.00	$580.00	$576.50	$5,175.00
10	10	Other (Supervision or General Conditions)		$0.00	$500.00	$2,994.69	$22,713.00
10	11	Overhead and Profit		$3,288.60	$2,860.00	$5,177.54	$0.00
12		**Grand Total**		**$20,693.60**	**$21,960.00**	**$25,225.21**	**$76,969.00**

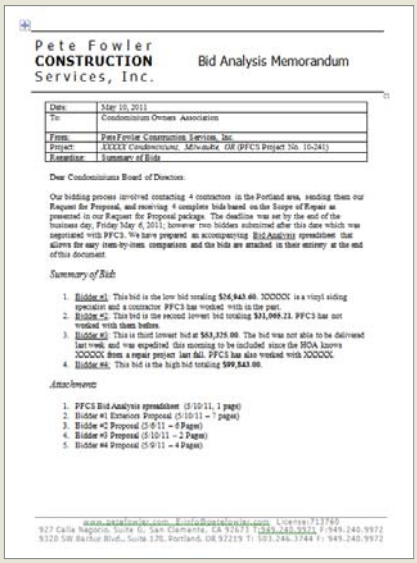
1. Bidder #4 Proposal (5/9/11 – 4 Pages)

Calling References: Sample Script

1. Date
2. Time
3. Name
4. Company
5. When did XXX work for you?
6. What was the scope of work?
7. What was the original contract price (approximately)?
8. Were there any change orders? How much?
9. Was the work performed on time?
10. Tell me about how things went during construction?
11. How was the quality of the work?

4. CONTRACTING 101

Making Recommendations



Pete Fowler
CONSTRUCTION
Services, Inc.

Bid Analysis Memorandum

Date:	May 10, 2011
To:	Condominium Owners Association
From:	Pete Fowler Construction Services, Inc.
Project:	XXXXX Condominiums, Milwaukie, OR (PFCS Project No. 10-241)
Regarding:	Summary of Bids

Dear Condominiums Board of Directors:

Our bidding process involved contacting 4 contractors in the Portland area, sending them our Request for Proposal, and receiving 4 complete bids based on the Scope of Repair as presented in our Request for Proposal package. The deadline was set by the end of the business day, Friday May 6, 2011; however two bidders submitted after this date which was negotiated with PFCS. We have prepared an accompanying Bid Analysis spreadsheet that allows for easy item-by-item comparison and the bids are attached in their entirety at the end of this document.

Summary of Bids

1. Bidder #1: This bid is the low bid totaling **$26,843.00**. XXXXX is a vinyl siding specialist and a contractor PFCS has worked with in the past.
2. Bidder #2: This bid is the second lowest bid totaling **$31,000.22**. PFCS has not worked with them before.
3. Bidder #3: This is third lowest bid at **$63,325.00**. The bid was not able to be delivered last week and was expedited this morning to be included since the HOA knows XXXXX from a repair project last fall. PFCS has also worked with XXXXX.
4. Bidder #4: This bid is the high bid totaling **$99,843.00**.

Attachments

1. PFCS Bid Analysis spreadsheet (5/10/11, 1 page)
2. Bidder #1 Exterior Proposal (5/10/11 – 7 pages)
3. Bidder #2 Proposal (5/6/11 – 6 Pages)
4. Bidder #3 Proposal (5/10/11 – 2 Pages)
5. Bidder #4 Proposal (5/9/11 – 4 Pages)

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9320 SW Barbur Blvd., Suite 170, Portland, OR 97219 T: 503.246.3744 F: 949.240.9972

4. CONTRACTING 101

Introduction to Contracts

- Think like The One Minute Manager: What does good performance look like? What are the rewards for good performance? What are the ramifications for poor performance?
- Operating from a position of strength
- See Standard Contract Forms and Suppliers (PDF)
- The Golden Rule
  (The one with the gold gets to make the rules!)

Introduction to Contracts

DON'T SIGN A CONTRACT CREATED BY THAT CONTRACTOR!

If you only learn one thing today, this is that one thing.

Payment Application

#	Scope	Milestone	Value	PMT #1	PMT #2	PMT #3	Total Paid
1	Excavation	200	250	200	0	0	200
2	Walls *1	200	300	30	0	0	30
3	Roof					0	0
4	Signa					0	0
5	Paint					0	0
6	Comp					0	0
7	Total					0	230
8	-						-
9	CO#1						10
10	CO#2						-
11	CO#3						-
12	CO#4: Landscaping	-	-	-	-	-	-
13	-	-	-	-	-	-	-
14	Total	-	1,010	240	-	-	240

Change Orders

Change Orders are a natural part of construction and a contingency for them should be built into the budget. Change orders become a part of the construction contract, should always be in writing, and should be negotiated and signed at the time the change occurs, not at the end of the project.

4. CONTRACTING 101

Change Orders

Some years ago, Congress tasked the National Research Council to study the issue of cost growth of construction contracts. Conclusions from that study determined that there was no perfect or complete set of specifications and drawings. The reality is that most projects are not really "design-bid-build," but rather "design-bid-build-figure out the design-build-change the design-build-argue over the design-build..."

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

5. MANAGING CONSTRUCTION QUALITY

5. MANAGING CONSTRUCTION QUALITY

The Good Old Days

5. MANAGING CONSTRUCTION QUALITY

The New World

Project Definition

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.

Quick Definitions

- 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.

Quick Definitions

- Scope of Work: The written definition of what is being bought and sold…
- Hold-Point: Critical time in the construction process where construction should stop for verification of conformance with plans, specifications, standards and contracts. Verification can include inspection, testing, recording, and reporting.

Managing Construction Quality

THERE IS NO WAY TO 100% GUARANTEE PROJECT SUCCESS AND PERFORMANCE

Managing Construction Quality

HOW DO WE VERIFY OUR CONSTRUCTION PROJECTS ARE GOING TO PERFORM?

Define

- 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

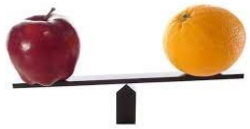
(K) Contract

- 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”;

Managing Construction Quality

HOW DO WE VERIFY OUR CONSTRUCTION PROJECTS ARE GOING TO PERFORM?

Verify



- We establish a procedure to "verify" at specified *Hold-Points* during construction;
- During construction we inspect to verify conformance with the design (plans, specs, standards, and contracts).
- 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).

5. MANAGING CONSTRUCTION QUALITY

Managing Construction Quality

HOW DO WE VERIFY OUR CONSTRUCTION PROJECTS ARE GOING TO PERFORM?

- 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.

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

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.

5. MANAGING CONSTRUCTION QUALITY

Quality Management Plan

DEFINE

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

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

Quality Management Plan

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).

5. MANAGING CONSTRUCTION QUALITY

Quality Management Plan

BUDGET

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

SCHEDULE

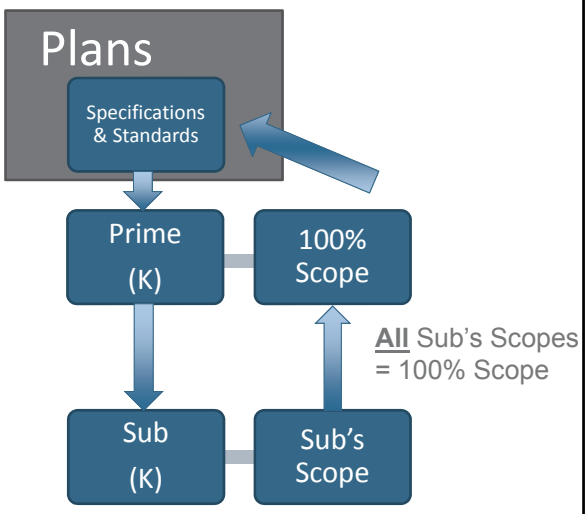
- Establish Hold Points
- Be prepared to stop the project if acceptable performance cannot be achieved

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

Quality Management Plan

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.



5. MANAGING CONSTRUCTION QUALITY

Quality Management Plan

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.

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

Quality Management Plan

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)

Managing Construction Quality

10/17/2014 — Page 1 of 1

PROJECT NAME

Independent Quality Review

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

6. THE REAL WORLD

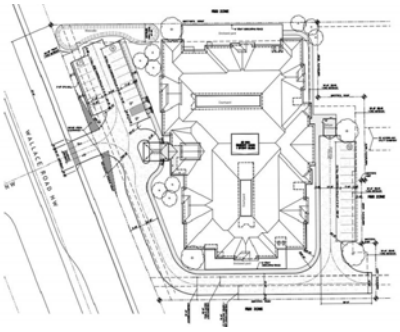
The Real World

- Before Construction
  - Single Family Slope Failure and Drainage Repair
  - Medical Facility: Pre-Construction Evaluation of Plans and Specifications
- During Construction
  - Multi-Family Maintenance
  - Multi-Family During Re-siding
- After Construction
  - Multi-Family Construction Defect Litigation Repairs
  - Single Family Construction Defect Litigation Repairs

Medical Facility Pre-Construction Plan Review

A 32,000SF medical facility with 56 suites, commercial kitchen, dining, and memory care facility. PFCS was hired by a design-build contractor to perform a pre-construction review of design documents. Main focus was to provide a peer review of all pre-construction documents, including construction drawings, and product specifications, in order to assure building performance in the Pacific Northwest climate.

PFCS Project 14-156



PFCS provided the following training to GC:
- Contract Management and Execution
- Renegotiation of contract price
- Quality Inspection of work
- Payment Applications

6. THE REAL WORLD

Slope Failure and Drainage Repair

A residence suffered dramatic erosion of a drainage easement. PFCS managed the designers, permitting, contracts, grading and repairs, documented progress, processed payments, and managed contract, budget and schedule changes. The project finished under budget.

PFCS Project 11-178

1. BUILDING LIFECYCLE MANAGEMENT PROJECTS

Multi-Family Re-Roof

Portland, Oregon Condo project built in 1979 with 200 units in 22 buildings. PFCS was brought in late (after the contract was signed) to inspect a re-roofing project. Ultimately the roofer was fired. PFCS work: compose a new scope of work, contract docs, tendering, inspection during construction. Quality improved. Cost decreased.

PFCS Cost $11,596
Verified savings:$14,658

PFCS Provided the HOA the following services:
- Contract Management and Execution
- Inspection of contractor quality
- Field Photographs and Documentation
- Field Risk Management

PFCS Project 13-112

1. BUILDING LIFECYCLE MANAGEMENT PROJECTS

Multi-Family Re-Siding

Portland, Oregon Condo project during the course of re-siding project. The property manager was concerned with quality concerns. PFCS was hired to review the contract, summarize the requirements, inspect to evaluate performance and report.

					Building				
Line	Code	#	Contract Requirement	Issue	15	27	36	54	56
1	**00-730**		**General Requirements**	None					
		E	General Requirements require clean-up	Debris remains on-site from re-siding work		X	X		
3	**02-070**		**Selective Demolition**						
4		B	Protect items for re-installation	Doorbell wires exposed and/or doorbells missing: re-installation incomplete.	X		X	X	
5	**06-100**		**Rough Carpentry**						
6		A	Repair rot damage not already identified in the Scope of Work	Rotten structural post at entry landing				X	
		D		Separated joint at trim / fascia			X		
8	**07-460**		**Siding - New fiber-cement to match existing trim**						
9		D	Siding requires 1/4" starter strip at bottom	Siding closer to grade or concrete than specifications allow	X	X	X	X	X

PFCS Project 07-135

6. THE REAL WORLD

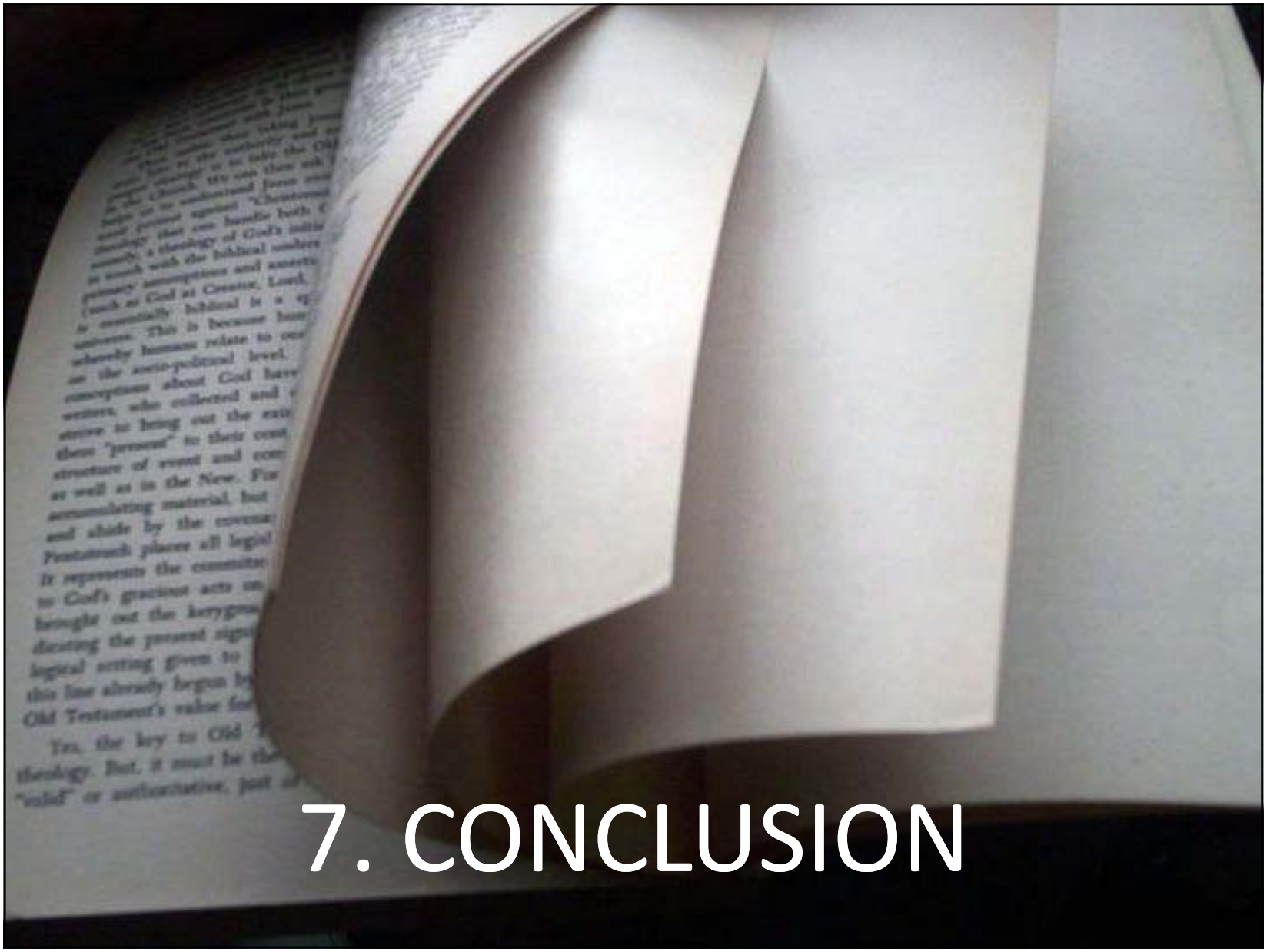
Multi-Family Construction Defect Litigation Repairs

- Project involves a 3-level, 4-unit condo building constructed in 1988. Project was in litigation for water intrusion in the garage and a roof replacement. Following the litigation, repairs needed to be executed.
- The owner received proposals from several contractors for the interior repairs which are all approximately $100,000. In addition, we estimate the cost to replace the roofing and roof top decks to be approximately $133,000, including the design and coordination of this complicated work.

PFCS Project 06-295

6. THE REAL WORLD

Single-Family Construction Defect Litigation Repairs



7. CONCLUSION

7. CONCLUSION

In Summary

1. Make A Checklist
2. Compare & Contrast

7. CONCLUSION

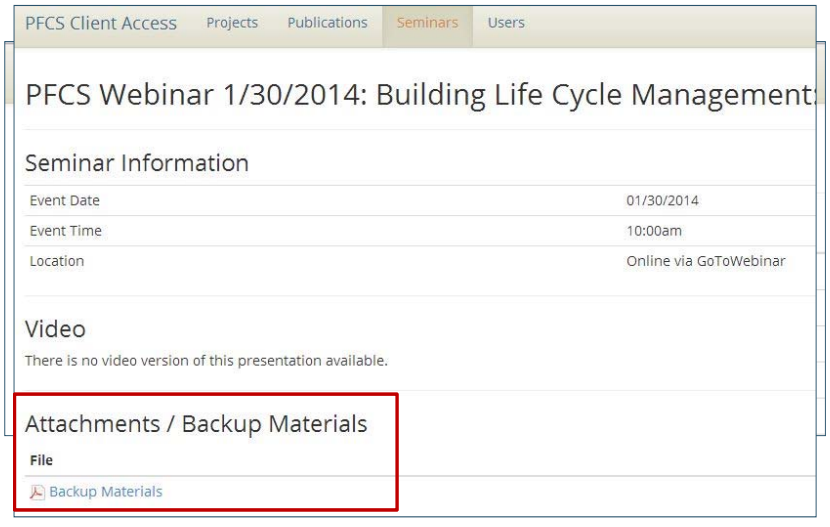
Learning Objectives

- Introduce Quality Control Generally
- Discuss the role of quality in risk management and Building Lifecycle Management
- Apply the fundamentals of Quality Management to Construction Contracting
- Review Construction Quality Control Projects

Back-Up Materials

1. Managing Construction Quality
2. DBSKCV Construction Management Method
3. Managing Property Maintenance & Improvement

Webinar Materials

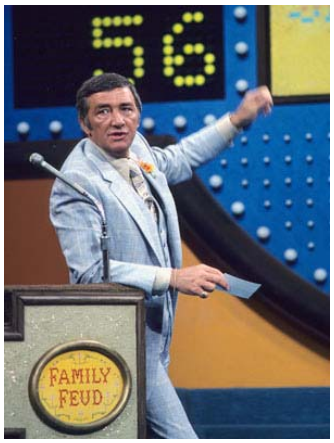


CE CERTIFICATES WILL BE SENT OUT WITHIN 3 BUSINESS DAYS

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

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

Homework

1. Review the presentation handout for 10-20 minutes some time in the next 24 hours.
2. Read each of the back-up documents some time in the next month (Put it on the night stand; it will help with insomnia).
3. Calendar forward a month to review the presentation handout again for 10-20 minutes.

Doing this will increase your long-tem memory of the material by many times.

Join us for our next WEBINAR:

Construction Contracts, Risks & Insurance

Thursday, November 13, 2014

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End


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