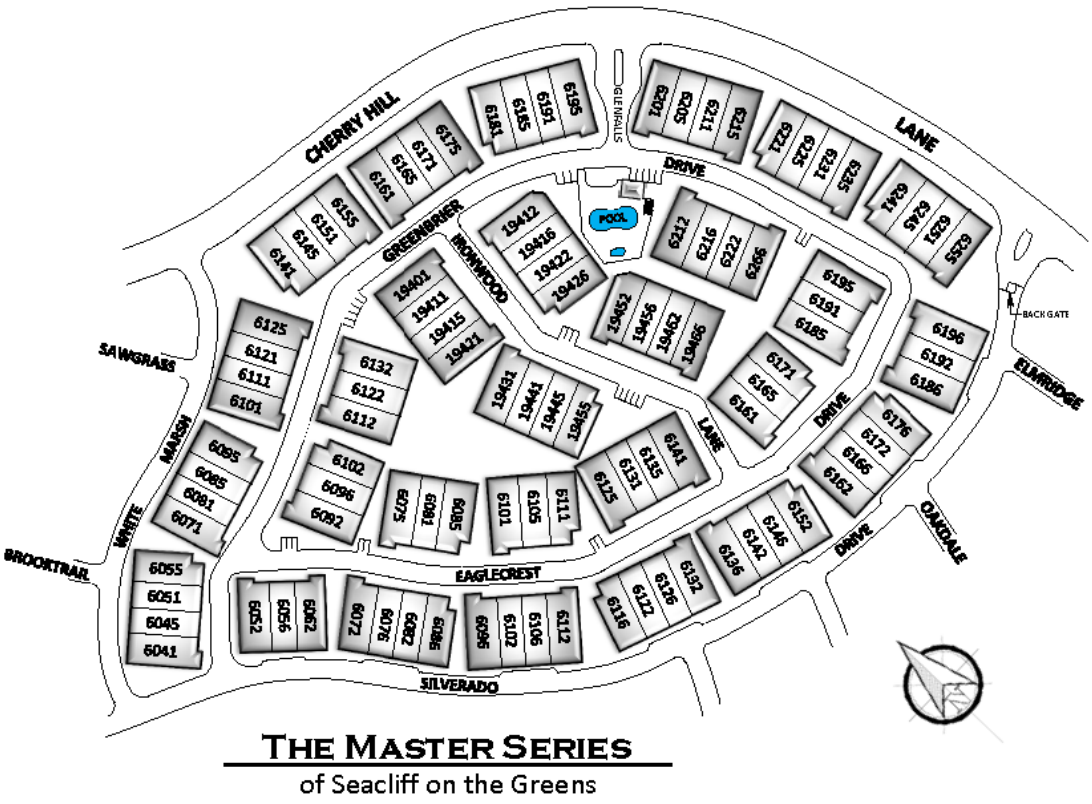
Seacliff on the Greens - The Master Series: Roofs



THE MASTER SERIES
of Seacliff on the Greens

OFFICES

CALIFORNIA

949-240-9971

931 Calle Negocio, Ste J
San Clemente, CA 92673

CA License #713760

OREGON

503-660-8670

9320 SW Barbur Blvd, Ste 170
Portland, OR 97219

OR License #173960

GENERAL INQUIRY

info@petefowler.com
www.petefowler.com

Pete Fowler CONSTRUCTION Services, Inc.

Project #15-171

Pete Fowler CONSTRUCTION Services, Inc.

Proposal

Date:	08/03/2015
To:	Jack Williams, CCAM Huntington West Properties, Inc. 13812 Goldenwest St Westminster, CA 92683 T: (714) 891-1522 Ext. 214 E: jack@huntingtonwest.com
From:	Pete Fowler Construction Services, Inc.
Project:	Seacliff on the Greens - The Master Series: Roofs (PFCS 15-171)
Regarding:	Proposal for Owner's Representative Services

Dear Mr. Williams,

Thank you for considering PFCS to assist with your project.

At this time, we understand that you are interested in retaining a construction professional to serve as a Construction Manager / Owner's Representative to evaluate the bids received, possibly update the project specifications, and coordinate the contracting and execution of the work. We commend your recognition that a construction professional should be hired to protect your interests.

As you may know, professional Owner's Representative services are generally 5-15% of construction cost. For projects like yours, PFCS' process saves more than it costs AND verifies quality (that is, the services are "free plus a profit"). Having PFCS involved, including (1.) specifying the right scope of work, and (2.) tendering those specifications as a professionally composed Request for Proposal (RFP) for competitive bids will provide the best possible price that the market will bear. It will also make possible (3.) composition of an agreement with appropriate contractual protections and (4.) quality control mechanisms that are not otherwise possible. (5.) During construction, PFCS' construction management and cost estimating expertise make the change order process smooth and fair, rather than painful and expensive.

In general, the phases of professional Building Lifecycle Management include:

- Evaluation of the existing information and physical performance of the buildings
- Specification of maintenance and repairs
- Tendering of requests for proposals (RFPs) from qualified and interested bidders
- Contracting in a way that adheres to the Golden Rule (i.e. The one with the gold makes the rules.)
- Coordinating the work in a professional way, including project kick-off, processing payments, and evaluating proposed change orders.
- Verifying that Owners are getting what they paid for with a rigorous quality control program

PFCS Initial Plan

Phase 1: Evaluation

- Evaluate current bids
- Meetings with Persons Most Knowledgeable
- If necessary: On-site evaluation of buildings and roofs

POSSIBLE FURTHER WORK

Phase 2: Specification

- Consultation
- Budget
- Specifications for Maintenance, Repair and Improvement
- Progress Schedule
- Compose the Request for Proposal

Phase 3: Tendering and Contracting

- Tendering the Request for Proposal
- Proposal / Bid Analysis
- Contract(s)

Phase 4: Quality Management

- Construction Management including invoice and change order processing
- Quality Control Inspections

Phase 5: Building Lifecycle Management Partner

- Evaluate the physical performance of the key building and site elements
- Evaluate the reserve study compared to the physical performance
- Assist the Owner's in creating a realistic plan to spend the right amount, the right way, on the right work

PFCS Roles and Responsibilities

1. Serve as the Owner’s Representative exercising professional judgment in the execution of the work to protect the interests of the Owners.
2. Compose and execute construction-ready contract documents that are professional, fair, and have appropriate contractual protections.
3. Inspect, document and compare performance to the contract documents.
4. Process payments to ensure the appropriate sums are being transferred at the appropriate points in the completion of work.
5. Address changes and additions to negotiate fairly from a position of strength.
6. Compile and distribute project-close out documentation.

Back-Up Documents Attached

- 1. PFCS Consulting Agreement
- 2. PFCS Fee Schedule
- 3. PFCS Building Life-Cycle Management brochure
- 4. Consultant Introduction: Pete Fowler
- 5. Managing Construction Quality: A PFCS whitepaper and checklist to make sure we have all the components of a construction quality management program.
- 6. PFCS Building Lifecycle Management (BLM) Seminar Series: If you are interested in more information on BLM, we recommend you visit http://www.petefowler.com/events/ for a list of our 2014 webinars that detail the standards of professionalism for evaluating, specifying, tendering, contracting, managing and controlling quality. These programs are recorded and you can watch them at your leisure. Contact us if you are interested.

PFCS Fees & Moving Forward

To determine the best course of action, we request an initial authorization of 4-8 hours, with a guaranteed maximum cost not to exceed $1,000. At the conclusion of this phase we will deliver an Opinion Letter with Recommendations and a detailed plan. We are most likely to recommend moving into the Phase 2 work under the POSSIBLE FURTHER WORK section of the plan outlined above.

As discussed above, CM services are usually 5-15% of construction cost. PFCS' unique process saves more than it costs AND ensures quality construction (that is, the services are "free plus a profit"). But we don't take a one-size-fits-all approach. Think of us like a building doctor: If a doctor prescribes before the examination or diagnosis, that's malpractice. We will EXAMINE your situation, DIAGNOSE, and PRESCRIBE the right solution. And only when it's in your best interest we will operate, exercising our experience, discipline and skill. Once we have further information, we will craft and deliver a detailed plan, in cooperation with your manager and the board, that conforms with the parameters described above.

Attached please find our Consulting Agreement and Fee Schedule for your review, approval and signature. We can begin work immediately upon receipt of the signed agreement and the retainer check for $500. As an alternative, we can take the retainer via credit card on our Client Access site. Please call our office to make arrangements and receive instructions for this.

We look forward to working with you. If you have any questions, please do not hesitate to call us.

Consulting Agreement

This Agreement is effective this ___ day of _____, ____ between Pete Fowler Construction Services, Inc. ("Consultant") and Seacliff on the Greens - The Master Series (UPDATE) ("Client").

1. TERM OF CONTRACT

This Agreement shall become effective upon execution by both parties and shall continue in effect until terminated as provided in this Agreement.

2. SERVICES TO BE PERFORMED BY CONSULTANT

1. Specific Services: Conditional upon receipt of an executed Agreement and receipt of the deposit as specified herein, the Consultant agrees to perform services related to analysis of the condition, construction and development of certain real property as specified in the proposal attached hereto ("Proposal"). The parties agree that the scope and nature of the services will be adjusted from time to time dependent upon initial analysis and testing. The Client specifically acknowledges and agrees that the Consultant services do not include design, construction or building inspector services and that the Consultant shall not be considered an architect, building contractor, engineer or building inspector when providing its services, nor shall the Consultant assume or render on behalf of the Client any duty or responsibility which may otherwise be performed by any of these professionals.
2. Method of Performing Services: The Consultant will determine the method, details, and means of performing the above-described services. The Consultant shall expend its best efforts to meet the objectives of Client and, in doing so, strive to preserve the integrity of Client in its relationships. The Consultant agrees to abide by any policies and procedures established by Client during the term of this Agreement.

3. COMPENSATION

1. Rate: Client agrees to pay Consultant the amount of $500.00, payable upon execution of this Agreement ("deposit") and such additional amounts as set forth in the Proposal or schedule of fees and costs attached hereto. The deposit shall be held and applied to the final invoice to the services and costs.
2. Date for Payment of Compensation: Client agrees to pay Consultant in full within thirty (30) days of receipt of an invoice, together with a service charge in the amount of One Percent (1%) per month for any amounts not paid when due.
3. Testimony: Should any employee, independent contractor or party who may have a relationship with Consultant be required to testify in any deposition, mediation, arbitration, judicial proceeding, administrative proceeding or otherwise, arising out of or related to the services provided in this Agreement, Client agrees to pay Consultant its fees and costs based upon its then current schedule of fees.

4. OBLIGATIONS OF CONSULTANT

1. Non-Exclusive Relationship: Consultant may represent, perform services for, and contract with as many additional clients, persons.
2. Limited Liability: Consultant will not be liable to Client, or to anyone who may claim any right due to a relationship with Client, for any acts or omissions in the performance of services under the terms of this Agreement or on the part of the employees or agents of Consultant unless those acts or omissions are due to gross (we can choose to omit "gross") negligence or willful misconduct. Client shall indemnify and hold Consultant free and harmless from any obligations, costs, claims, judgments, attorney's fees, and attachments arising from, growing out of, or in any way connected with the services rendered to Client under the terms of this Agreement, unless Consultant is judged by a court of competent jurisdiction to be guilty of gross negligence or willful misconduct.
3. Assignment: Neither this Agreement nor any duties or obligations under this Agreement may be assigned by Consultant without the prior written consent of Client.

5. OBLIGATIONS OF CLIENT

1. Cooperation of Client: Client agrees to comply with all reasonable requests of Consultant and provide access to all documents and real property reasonably necessary to the performance of Consultant's duties under this Agreement.
2. Release and Indemnity: Client has been specifically advised and understands that the art and profession of forensic consultation is sometimes subjective and interpretive, and that this process may involve the parties in litigation, arbitration or other claims processes relating to the quality or accuracy of such work, both now and in the future. In making this agreement the Client expressly releases independent contractors, and other representatives, including but not limited to Peter D. Fowler, and keep them free and harmless from any and all claims of liability for damages, whether merited or not, of any kind which are related to the performance of their work involving the real property which is the subject of this agreement, whether such claims are based on express or implied contractual liability, negligence, or indemnity of any kind. The Client agrees to defend and indemnify the Consultant, its directors, officers, shareholders and employees, agents, independent contractors, and other representatives from any and all expense, including but not limited to Consultant's attorney fees, costs, expert costs, judgments, or awards, which any may incur in defending, or as a result of any and all claims relating to such work. Notwithstanding such indemnity for all types of actions, in the event of a judgment or award based upon the gross (we can choose to omit "gross") negligence or willful misconduct by any such released party, the Client does not release such party from liability therefore. The Client voluntarily enters into this agreement in order to secure the performance of Pete Fowler Construction Services, Inc. under the terms of this Agreement.
3. Assignment: Neither this Agreement nor any duties or obligations under this Agreement may be assigned by Client without the prior written consent of Consultant.

6. TERMINATION OF AGREEMENT

1. Notwithstanding any other provision of this Agreement, either party may terminate this Agreement at any time by giving five (5) days written notice to the other party. Unless otherwise terminated as provided in this Agreement, this Agreement will continue in force for a period of three (3) years.

7. GENERAL PROVISIONS

1. Notices: Any notices required to be given under this Agreement by either party to the other may be affected by personal delivery in writing or by mail, registered or certified, postage prepaid with return receipt requested. Mailed notices must be addressed to the parties at the addresses appearing in the introductory paragraph of this Agreement, but each party may change the address by giving written notice in accordance with this paragraph. Notices delivered personally will be deemed communicated as of actual receipt; mailed notices will be deemed communicated as of the day of receipt or the fifth day after mailing, whichever occurs first.
2. Entire Agreement of the Parties: This Agreement supersedes any and all agreements, either oral or written, between the parties with respect to the rendering of services by Consultant for Client and contains all of the representations, covenants, and agreements between the parties with respect to the rendering of those services. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which is not contained in this Agreement, and that no agreement, statement, or promise not contained in this Agreement will be valid or binding. Any modification of this Agreement will be effective only if it is in writing signed by the party to be charged.
3. Partial Invalidity: If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will continue in full force and effect without being impaired or invalidated in any way.
4. Attorney's Fees: If any legal action or arbitration, including an action for declaratory relief, is brought to enforce or interpret the provisions of this Agreement, the prevailing party will be entitled to reasonable attorney's fees, which may be set by the court or arbitrator in the same action or in a separate action brought for that purpose, in addition to any other relief to which that party may be entitled.

Executed at _____, on the date and year first above written.

CONSULTANT:	**CLIENT:**
Pete Fowler Construction Services, Inc.	Seacliff on the Greens - The Master Series (UPDATE)
Signed: _____	Signed: _____
Printed: _____	Printed: _____
Date: _____	Date: _____

Pete Fowler CONSTRUCTION Services, Inc.

Fee Schedule

Principal	$ 210.00
Expert	$ 195.00
Architect/Engineer	$ 195.00
Senior Consultant	$ 170.00
Construction Analyst	$ 130.00
Assistant Consultant	$ 85.00
Draftsman	$ 125.00
Deposition/Testimony	$ 400.00

We charge our time by the hour, in 1/10-hour (6 minute) increments. There is no minimum daily charge.

TESTIMONY

Expert witness investigation and court preparation time is charged at the applicable hourly rate. Expert witness testimony and / or depositions are charged at $400.00 per hour.

TRAVEL

Travel mileage may be charged at $0.55 per mile for travel from Pete Fowler Construction Services' offices.

OUTSIDE SERVICES AND MATERIALS

Outside services or consultants are charged at cost plus ten (10%) percent. Typical outside services could include: equipment rental, photographs and printing, travel and lodging, long distance communication, and specialty consultants.

INVOICES

Invoices are normally rendered monthly and are payable within 30 days of receipt. A service charge of 1 percent (1%) per month is applied to all past due accounts

We know buildings

EXPERTISE

PROJECT MANAGEMENT

TECHNOLOGY

STANDARDS

RESULTS

Maintaining your property is hard. We can help.

Building Life-Cycle Management Services for Owners, Associations and Managers

EVALUATION

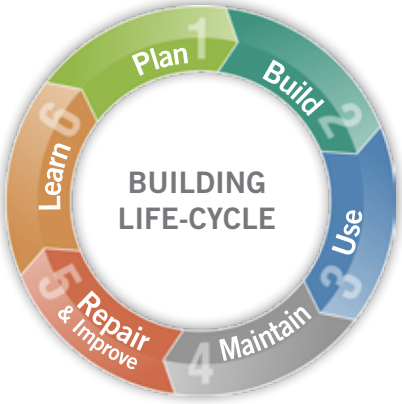
Property Condition Assessment (per ASTM E2018)
Leak Investigation and Testing (per ASTM E2128)
Information Management (Incl. Document Storage and Access per ASTM E2166)

SPECIFICATION

Consultation
Maintenance Plan
Maintenance Manual
Reserve Study (In close coordination with a Reserve Study specialist)
Budget
Life-Cycle Cost Analysis
Specifications for Maintenance, Repair and Improvement

QUALITY MANAGEMENT

Progress Schedule
Request for Proposal
Proposal / Bid Analysis
Contracts
Construction Management including invoice and change order processing
Quality Control Inspections
Warranty Management



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

PROJECT MANAGEMENT: To deliver valuable work with measurable return on investment (ROI), we have to manage the Scope, Budget and Schedule of our work and yours.

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 judgement to develop strategies and stepbystep plans for maximizing ROI for maintenance and repair expenditures.

RESULTS: Our work allows our clients to make informed, effective decisions.

Pete Fowler CONSTRUCTION Services, Inc.

www.petefowler.com

Pete knows buildings

Both in the field, and on the stand.

Pete's construction career began with digging ditches over 30 years ago, and since then has included almost every construction role. In 1995, he founded Pete Fowler Construction Services—a team of building experts and project management professionals helping clients make smart, informed decisions about their buildings. PFCS technical experts are often called upon to consult and testify in property-related claims and litigation. Pete has vast experience providing successful expert witness testimony in both state and federal court—including more than 100 depositions, arbitrations, and hearings.

"LET'S BUILD A REAL CONSTRUCTION CONSULTING BUSINESS"

Pete Fowler is passionate about helping people make tough decisions. When founding PFCS 20 years ago, Pete was committed to running a business with unwavering integrity. Today, he has helped countless people navigate the complexity of construction, solve challenging building problems, and get their projects back on track.

ON THE ACADEMIC SIDE

Pete has conducted construction and building related research and published numerous articles—including the first national publication related to construction defects, and one of the earliest on mold management. With a degree in Construction Management and a minor in Information Systems, Pete designed PFCS' world-class proprietary technology system to collect, organize, structure, share, and permanently store documents and building information. He has moderated building science symposia, and been invited to speak by the most prestigious national construction organizations.

Peter D. Fowler
President

CA 949.240.9971
OR 503.246.3744

www.petefowler.com

pf@petefowler.com

LinkedIn.com/in/petefowlercs

@peter_d_fowler

EXPERTISE

Construction Management
Construction Defects, Claims & Quality
Inspection & Testing
Building Performance Evaluation
Cost Estimating
Building Codes & Standards
Expert Witness Testimony

EDUCATION

Bachelor of Science in Construction Management, Minor in Management Information Systems
– *California State University, Chico*

Vocational Construction Education
– *Butte College*

Hundreds of Continuing Education Courses, 1994 – Present

LICENSES & CERTIFICATIONS

California Contractors License 1995–Present
Oregon Contractors License 2007–Present
Certified Professional Estimator 2000–2010
Certified Inspector 2000–2010
Certified Window Installer 2003

PUBLICATIONS

The Journal of Light Construction
Window & Door Magazine
The Professional Constructor, Journal of the AIC
ASTM Committee E06.51.11

Pete Fowler CONSTRUCTION Services, Inc.

Paul knows buildings

Tackling each project from bottom to top.

At the confluence of his passion for art, interest in mathematics, and aptitude for physics—Paul Kushner was destined for the field of architecture and construction. After earning his degree from Berkeley, Paul began his career framing and digging ditches—making for a unique mix of technical expertise and in-the-field experience.

After working his way up in the industry, he started his own architectural consulting business—where he provided architectural services for post-litigation reconstruction projects and construction defect litigation support.

WHAT YOU MIGHT NOT KNOW ABOUT PAUL

As a respected figure in the community, you're likely already familiar with Paul. However, many don't realize the depth of his practical expertise.

Not only does Paul testify as an expert in the field—but due to his dual position as both an expert witness and architect, he is also often responsible for implementing the conclusions he draws. He has over three decades of experience, including 480-unit buildings and budgets exceeding $12 million—meaning you can expect practical answers in the courtroom, and authentic solutions in the field.

LEAVING NO STONE UNTURNED

As an Architecture Expert with Pete Fowler Construction Services, Inc. (PFCS), Paul conducts research, performs inspections, and his tenacity allows him to produce thorough, consistent results in the face of challenging building problems.

EXPERTISE

Construction Consulting

Property Inspection & Testing

Assessment & Analysis

Construction Cost Estimating & Budgeting

Construction Management & General Contracting

Training

Education & System Development

Expert Witness, Mediation & Testimony

EDUCATION

Bachelor of Arts in Architecture – *University of California, Berkeley*

California School of Mechanical Arts, San Francisco

Clifton College, Bristol, England

Hampstead Heath, Christopher Trevor-Roberts M.V.O., Hampstead, England

LICENSES & CERTIFICATIONS

California Architect License # C-26488

Certified Construction Contract Administrator

Construction Documents Technologist

Paul V. Kushner C.C.C.A., A.I.A

Architecture Expert

CA 949.240.9971
OR 503.246.3744

pk@petefowler.com

www.petefowler.com

Pete Fowler CONSTRUCTION Services, Inc.

Managing Construction Quality

OFFICES

CALIFORNIA

949-240-9971

931 Calle Negocio, Ste J
San Clemente, CA 92673

CA License #713760

OREGON

503-246-3744

9320 SW Barbur Blvd, Ste 170
Portland, OR 97219

OR License #173960

GENERAL INQUIRY

info@petefowler.com
www.petefowler.com

Pete Fowler
CONSTRUCTION
Services, Inc.

Pete Fowler CONSTRUCTION Services, Inc.

Managing Construction Quality

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)

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

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