



Civil & Environmental Consultants, Inc.



Civil & Site Development
Engineering



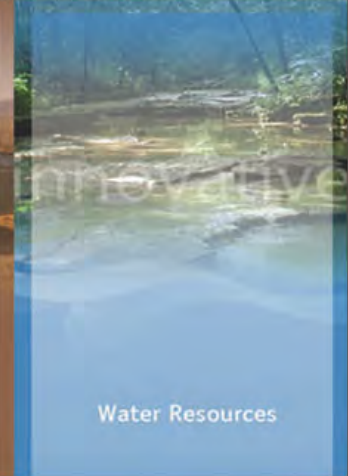
Ecological Services



Environmental Services



Waste Management



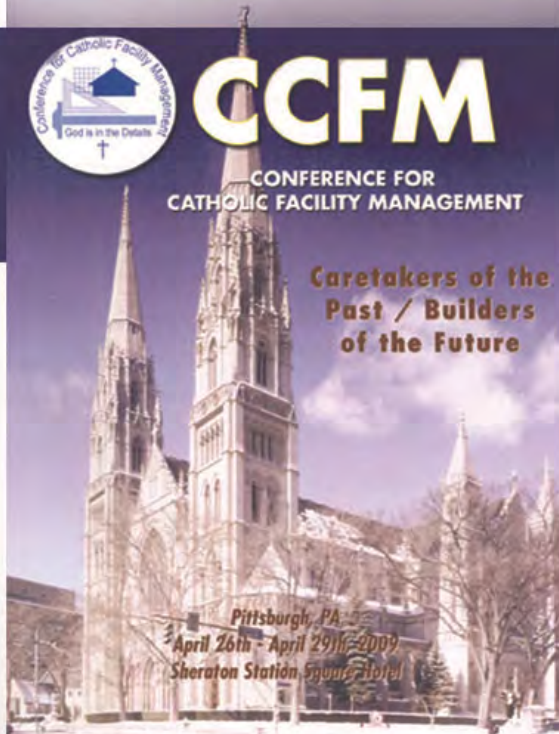
Water Resources



CCFM

CONFERENCE FOR
CATHOLIC FACILITY MANAGEMENT

**Caretakers of the
Past / Builders
of the Future**



Pittsburgh, PA
April 26th - April 29th, 2009
Sheraton Station Square Hotel

Introduction to Property Condition Assessments

Presenters:

**Ray Sinagra, AIA – Sr. Project Manager,
Property Condition Assessment Services**

Mary Guinee – Principal, Due Diligence Services

April 28, 2009



PCA Introduction

Conference for Catholic Facility Management (CCFM) is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit earned on completion of this program will be reported to CES Records for AIA members. Certificate of Completion for non-AIA members are available on request.

This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.





➔ *PCA Introduction Agenda*

- My Background
- PCA Definition
- Purpose of a PCA
- PCA Uses
- Who Performs a PCA
- PCA Components
- What Affects the Cost of a PCA
- Related Services
- Case Studies
- Questions



➔ My Background

- Registered Architect; 23 Years Experience
- Project Manager for Two Major Universities
- Project Manager/Designer with City Government
- Planned/Designed New Buildings for Government, College & University, Science, Transportation Facilities
- Planned & Supervised Restoration/Repairs for Many Project Types, Including Infrastructure, Historical Buildings, College & University Facilities, Parks
- Current Position: Lead, PCA Services
- Completed ASTM E2018 PCA Training



PCA Introduction

- ➔ *What is a Property Condition Assessment (PCA)?*
- ➔ **A PCA is an objective, professional opinion of a building and grounds condition and general assessment of:**
 - Grounds, Utilities, Paving, Landscaping & Drainage
 - Building Material Systems & Components
 - Building Mechanical Systems
 - Building Plumbing
 - Building Life Safety/Fire Protection Systems
 - Building Electrical Systems



PCA Introduction

➔ *What is the Purpose of a PCA?*

- Goal: **Identify and convey physical deficiencies** to user with respect to commercial real estate

Physical Deficiencies:

- Conspicuous defects (broken walls, etc.)
- Material deferred maintenance
- Aggregate defects (> \$3,000)
- Code/Life Safety defects (regardless of amount)

Exceptions:

- Routine maintenance (typ. painting, sealants, etc.)
- De minimis conditions (< \$3,000)



PCA Introduction

➔ *Who sets the definitions and standards for a PCA?*

Generally Accepted Industry Standard:

- *ASTM E2018-01: Standard Guide for PCA: Baseline PCA Process*



Other Standards:

- *Standard & Poor's PCA Criteria*
- *Fannie Mae & Freddie Mac*
- *Institutional Investors & Banks*





PCA Introduction

➔ What is not included in a Baseline PCA?

- **Building Inspection** (involves intensive investigation)
- **Property Appraisal** (involves valuation)
- **Forensic Studies** (involves finding causes)
- **Elimination of Uncertainty** (risk is only reduced)
- **Technically Exhaustive Exam** (cost/time sensitive)
- **Environmental Studies** (e.g. mold, asbestos)
- **Concealed Conditions** (x-ray vision is an extra)
- **Testing & Specialized Equipment**
- **Equipment Information** (compressors, etc.)
- **Multiple Properties** (unless otherwise proposed)





PCA Introduction

➔ Who typically uses or requires a PCA?

In short, anyone who wants to reduce risk associated with buying, selling, owning or operating properties.

- **Banks & Institutional Investors** (to minimize loan risk and property devaluation as a precondition)
- **Buyers** (to minimize acquisition risk and as bargaining leverage)
- **Sellers** (to minimize repair exposure prior to offering)
- **Facility Owners/Developers** (to prefigure capital improvement plans and *pro forma*)
- **Institutions & Governments** (to assist in forming capital improvement vs. divestment decisions)



PCA Introduction

➔ Who can conduct a PCA?

- Any properly trained person

BUT, even ASTM suggests using a less risky option:

- **A Registered Architect or Engineer**
(stay tuned for the reason...)





➔ *What are the components of a PCA?*

→ First, a little clarification:

- **Property Condition Assessment = Process**
- **Property Condition Report = Product**

→ The process produces the product.



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

1. Executive Summary
2. Purpose & Scope
3. Walk-Through Survey
4. Document Reviews & Interviews
5. Additional Considerations
6. Opinions of Probable Costs
7. Qualifications
8. Limiting Conditions
9. Exhibits



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

1. Executive Summary

- General Description
- General Physical Condition
- Opinions of Probable Costs
- Recommendations



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

2. Purpose & Scope

- Is the PCR serving an acquisition, refinance, etc.?
- Identify the scope of work
- Any limitations that changed the scope of work



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

3. Walk-Through Survey

- Site description & condition survey
 - Age & condition of paving, lighting, landscaping
 - Observed drainage issues
 - Parking Spaces (quantity, ADA spaces)

- Building Systems age & condition survey
 - Foundations (if exposed)
 - Structural systems
 - Building enclosure (walls, windows, roof)



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

3. Walk-Through Survey

- Building Systems age & condition survey
 - Building finishes
 - HVAC systems (type, distribution, controls)
 - Plumbing systems (fixtures, ADA compliance)
 - Fire protection systems (extinguishers, sprinklers)
 - Life safety systems (exit signs, panic hardware)
 - Electrical systems (power, lighting, service size)
- Tier I Accessibility (ADA) survey (observed items)



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

3. Walk-Through Survey

- Observed deficiencies for building/site systems:
 - Building components that are older than their expected useful life (EUL)
 - Leaking or structurally failing components
 - Items with no evidence of regular maintenance (work orders, agreements, etc.)
 - Apparent Building Code violations*
- Tier I ADA (accessibility) issues

***But who has a working knowledge of Building Codes?**



➔ **Answer: A Registered Architect or Engineer!**

A PCR is comprised of nine major parts:



3. Walk-Through Survey

- Opinion of cost to remedy observed deficiencies
- Costs are segregated into:
 - Immediate deficiencies (up to 6 months or immediately if life safety items)
 - Short-Term (6 months to 3 years)
 - Long-Term (3 to 10 years)
- Alternatively, costs may be located in Part 6



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

4. Document Reviews & Interviews

- Zoning and Building Code history
 - Zoning/Building Code Official contact information, citation records
- Building drawings
 - Architect/Engineer (original and modifications)
- Developers & Contractors
 - Names & dates
- Warranties
- Operation & Maintenance (O&M) manuals



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

5. Additional Considerations

- Identify any other issues which may be of importance to the user
- Identify any out of scope considerations that are included in the PCR



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

6. Opinion of cost to remedy observed deficiencies

- Also called a Replacement Reserves Analysis
- Usually a mix of immediate, short and long-term
- Maintenance costs (~.18 to .25/sf) are included
- Costs are typically inflated at 2.5% per annum
- Costs are typically spread over a 10-year term
- Remedial cost sources: R.S. Means, regional costs, contractor estimates, professional experience
- Small scale remediation items (e.g. concrete repair) may not relate to Means Square Foot Costs



PCA Introduction

➔ Example: Opinion of Probable Costs Spreadsheet

Section 6: REPLACEMENT RESERVES ANALYSIS

Baseline Property Condition Report
ABC Building
800 Alphabet Street
Anywhereville, PA

March 20, 2009
Prepared by Civil & Environmental Consultants
CEC Project No. 081-000-0000

Component	Expected Useful Life (Yrs.)	Actual Age	Remaining Useful Life (Yrs.)	Estimated Quantity	Unit	Unit Cost	Total Replacement Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total	
SITE IMPROVEMENTS & UTILITIES																			
Replace/repair asphalt pavement	8	10 to 15	-2 to -7	16,000	s.f.	\$4.50	\$72,000.00	\$36,000	\$36,000									\$72,000.00	
Repair cur pavement and drains	unknown			1,400	l.f.	\$11.00	\$15,400.00	\$15,400										\$15,400.00	
Restore damaged and deferred maintenance landscaping	unknown			18,000	s.f.	\$3.25	\$58,500.00	\$13,500	\$13,500	\$13,500								\$40,500.00	
Add site lighting standards	n/a			12	ea	\$4,200.00	\$50,400.00	\$33,768	\$16,632									\$50,400.00	
STRUCTURAL SYSTEM																			
Repair cracked CMU walls	n/a	49		800	s.f.	\$18.00	\$14,400.00	\$14,400										\$14,400.00	
BUILDING EXTERIOR ELEMENTS																			
Replace main roof	25	49	-24	27,043	s.f.	\$6.50	\$175,779.50	\$117,772	\$58,007									\$175,779.50	
Replace roof eave & exp. joints	35	49	-14	600	l.f.	\$16.00	\$9,600.00	\$17,100	\$5,400									\$17,100.00	
Replace windows	n/a			27	ea	\$925.00	\$25,375.00	\$4,425	\$7,425	\$7,425								\$25,375.00	
Clean rust stains from facades	n/a			24,000	s.f.	\$1.15	\$27,600.00	\$9,200	\$9,200	\$9,200								\$27,600.00	
Repair/replace main entrance & loading dock soffits	15	49	-34	600	s.f.	\$2.25	\$1,350.00				\$1,530.00							\$1,530.00	
BUILDING INTERIOR ELEMENTS																			
Replace damaged 8'x8' GFI with VCI	35	49	-14	9,000	s.f.	\$3.75	\$33,750.00	\$16,875	\$16,875									\$33,750.00	
Repair damaged CMU walls	40	49	-9	600	s.f.	\$18.00	\$10,800.00	\$5,400	\$5,400									\$10,800.00	
Paint flaking basement concrete floors	10	unknown		1,200	s.f.	\$2.75	\$3,300.00			\$3,300								\$3,300.00	
Replace water-damaged A/C	2	49	-47	2,400	s.f.	\$2.25	\$5,400.00		\$5,400.00									\$5,400.00	
Repair damaged, leaking plaster	35	49	-14	200	s.f.	\$8.50	\$1,700.00	\$1,700										\$1,700.00	
Modify office on 2nd fl. for offices	n/a			20	s.f.	\$105.00	\$2,100.00	\$2,100.00										\$2,100.00	
Replace existing lab casework	30	49	-19	800	s.f.	\$130.00	\$104,000.00	\$34,667	\$34,667	\$34,667								\$104,000.00	
Remove existing lab casework	30	49	-19	1,200	s.f.	\$85.00	\$102,000.00	\$34,000	\$34,000	\$34,000								\$102,000.00	
Replace existing burn hoods	30	49	-19	15	ea	\$22,000.00	\$330,000.00	\$117,333	\$117,333	\$117,333								\$330,000.00	
PLUMBING SYSTEM																			
Provide new lab plumbing fixtures	25	49	-24	5	ea	\$275.00	\$1,375.00	\$550	\$550									\$1,375.00	
Provide floor-compartments, ADA restroom fixtures	25	49	-24	25	ea	\$525.00	\$13,125.00	\$13,650										\$13,650.00	
HVAC SYSTEM																			
Service RTUs and other rooftop HVAC units	15	14	0	5	ea	\$2,800.00	\$14,000.00	\$14,000										\$14,000.00	
Replace RTUs and other rooftop HVAC units	25	unknown	0	5	ea	\$14,000.00	\$70,000.00	\$70,000										\$70,000.00	
Replace 2nd floor AHUs	25	49	-24	2	ea	\$27,000.00	\$54,000.00	\$54,000										\$54,000.00	
T&E supply and exhaust systems	n/a			56,000	s.f.	\$3.00	\$168,000.00	\$42,000	\$42,000	\$42,000								\$168,000.00	
ELECTRICAL SYSTEM																			
Replace utility receptacles with GFCI receptacles in restrooms, etc.	n/a			24	ea	\$125.00	\$3,000.00	\$3,000										\$3,000.00	
Replace T-2 lighting fixtures with T-5 electronic ballasted floor fixtures	25	49	-14	120	ea	\$110.00	\$13,200.00	\$3,300	\$3,300	\$3,300	\$3,300							\$13,200.00	
FIRE SUPPRESSION & LIFE SAFETY SYSTEMS																			
Add emer. lighting heads & exit signs	n/a			12	ea	\$325.00	\$3,900.00	\$3,900										\$3,900.00	
Remove confusing signs	n/a					\$0.00	\$0.00	\$0										\$0.00	
Install/replace exit signs	n/a					\$0.00	\$0.00	\$0										\$0.00	
Replace 2nd floor guardrail	12	l.f.		12	ea	\$500.00	\$6,000.00	\$6,000										\$6,000.00	
Add tempered water eyewash stations	n/a			5	ea	\$275.00	\$1,375.00	\$1,650										\$1,650.00	
ADA COMPLIANCE																			
General ADA restroom conversions	n/a			5	ea	\$28,000.00	\$140,000.00	\$140,000										\$140,000.00	
ADA accessible dr. hardware	n/a			24	ea	\$375.00	\$9,000.00	\$9,000										\$9,000.00	
ADA accessible sidewalk & ramp	n/a			50	s.f.	\$25.00	\$1,250.00	\$1,250										\$1,250.00	
Modify 1st fl. corridor stair to provide accessible ramp	n/a			50	s.f.	\$150.00	\$7,500.00	\$7,500										\$7,500.00	
Create accessible parking spaces near bldg. main entrance	n/a			5	ea	\$200.00	\$1,000.00	\$1,000										\$1,000.00	
ROUTINE MAINTENANCE																			
Source cost allowance				62,600	s.f.	\$0.21	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00
Totals - Uninflated							\$666,993.27	\$419,078.24	\$263,821.00	\$246,526.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$13,146.00	\$1,218,284.50	
Inflation Rate = 2.0%								102.00%	105.00%	107.60%	110.38%	113.14%	115.97%	118.87%	121.84%	124.89%	128.00%		
Totals - Inflated							\$666,993.27	\$429,556.16	\$268,182.34	\$265,483.85	\$14,510.55	\$14,873.36	\$15,248.42	\$15,626.65	\$16,017.05	\$16,418.04	\$16,822.95	\$1,772,905.76	
Cost per square foot per year, uninflated							\$10.67	\$6.69	\$4.63	\$3.94	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	
Cost per square foot per year, inflated							\$10.67	\$6.86	\$4.76	\$4.24	\$0.23	\$0.24	\$0.24	\$0.24	\$0.24	\$0.24	\$0.24	\$0.26	

Notes: 1. The estimates are based upon published cost data for this area of Pennsylvania, professional judgement and normally expected costs for the tasks shown.
2. Inflation may vary from the 2.0% per year projected.



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

7. Qualifications and Credentials

- Identify the Field Observer & PCR Reviewer (may be the same person)
- Statement of qualifications of Field Observer
- Could be observed in the field by a staff technician and reviewed by a Registered Architect or Engineer



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

8. Limiting Conditions

- Identify in the PCR:
 - Any documentation which the Field Observer requested, but was not provided
 - Any interviews that were requested, but not granted
 - Any areas of the subject property to which the Field Observer was not granted access



➔ *What are the components of a PCR?*

A PCR is comprised of nine major parts:

9. Exhibits

- Typical information located here includes:
 - Project location or site plan
 - Copies of floor plans
 - Copies of public record documents
 - Proposals for repairs to subject property
 - Photographs (numbered and noted)
 - Other important information



➔ *What affects the cost of a PCA?*

The most common factors affecting a PCA fee:

1. Building size
2. Property type (office building, factory, apartment)
3. Age
4. Subject property size
5. Complexity (number of buildings, additions, etc.)
6. Apparent condition (photos)
7. Location (travel to site)

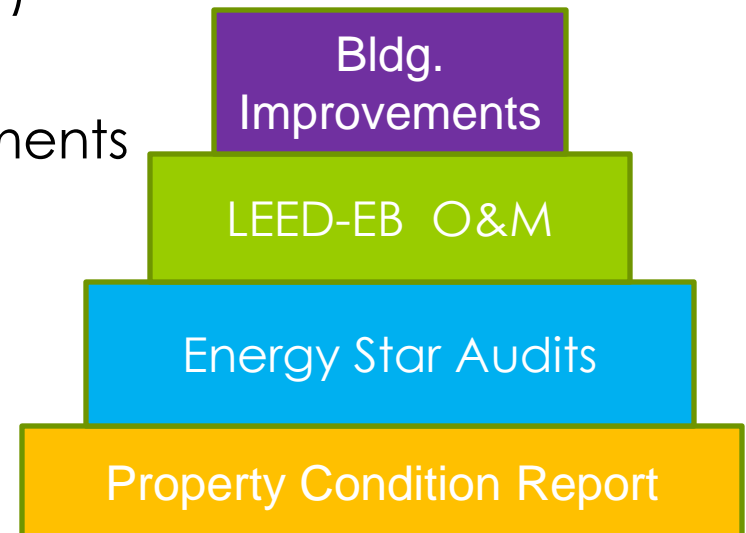


PCA Introduction

➔ **PCA Related Services**

Because PCRs provide initial descriptions, observations and findings regarding a property, they can become the basis for related services, including:

- Structural Condition Assessments
- Energy Audits (Energy Star)
- LEED-EB O&M Studies
- Building Capital Improvements





➔ **Case Studies**

The three most common major deficiency items found while performing a PCA:

1. Asphalt paving cracked beyond repair
2. Leaking roofs
3. Old, broken rooftop HVAC units (RTUs)



PCA Introduction

➔ **Case Study #1: Leaking Roof**

A ballasted EPDM (rubber) roof leaked and was replaced without insulation below. The ceiling below also leaked.



“Ballooned” Area

The exposed roof membrane “ballooned”, most likely due to water vapor trapped during replacement.



➔ **Case Study #2: Tripping Hazard**

An office and research building included an addition that created a 2" floor offset.



Per Code, a step cannot be $< 4''$, nor $> 7''$.



➔ **Case Study #3: Open & Shut Case**

A fire door located in an egress corridor in an apartment building had been replaced with a plywood door without panic hardware.



Per Code, a 1/3 hour fire-rated door should be used.



➔ **Case Study #4: Indoor Water Feature (no fountain required)**

A retaining wall located inside a factory had been leaking substantial amounts of water onto the building. The owner got creative, and dug a floor drainage channel.



This occurred right next to the production lines.



➔ **Case Study #5: Serious Congestion**

A factory had a problem with its central exhaust unit; apparently, it had been clogged with styrene particles.



This occurred because the owner had removed the filter media (because it had also clogged with styrene).



➔ ***Summary points to take with you:***

- Baseline PCAs are topical studies, designed to reduce risk associated with buying, selling & owning properties
- Who can use PCRs? Anybody involved with properties
- Who can perform a PCA? Any qualified person. BUT...
- A PCR consists of nine parts
- Building systems & components > EUL = deficiency
- PCRs identify immediate, short and long-term costs
- PCRs can provide a sound basis for further studies
- A PCA performed by a Registered A/E can help reduce risk and identify Code-related deficiencies
- The top three deficiencies found on many PCAs



Questions?



Thanks!