AEP Program

Corporate Membership

How to Estimate the Cost of Reclaimed Wood Flooring Using LEED Guidelines

Bidding Mistakes - Part 1
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INDUSTRY DIRECTORS
Allan Hauck, Ph.D., CPC
Department Head + Professor
Construction Management
California Polytechnic State University

Ann Ludwig, MPP
Consultant

CONTACT THE ASPE BUSINESS OFFICE
Elaine Cersosimo
ecersosimo@ASPenational.org • Operations • Annual Summit

Jennifer Cochran
jennifer@ASPenational.org • Membership • Social Media • Online Classes • PIE Exam

Tina Cooke
tina@ASPenational.org • Standards Committee • Website • Accounting

Natasha Crumbliss
natasha@ASPenational.org • Education Committee • Annual Summit

Cinder McDonald
cinder@ASPenational.org • Certification Committee & Program

2525 Perimeter Place Drive, Suite 103
Nashville, Tennessee 37214
615.316.9200 • ASPenational.org
Being part of the Society leadership has been both challenging and rewarding for me. I have learned more than I ever intended about non-profits and associations and their management. I can definitively say that serving on the ASPE Board has provided me an opportunity to grow and learn things that have impact on other areas of my career and personal life.

It is the time of year again when nominations are due for service on the national Board of Directors. In recent years, the Board has evolved to truly be a collaborative body that sets the vision for the Society. Each member of the Board is critically important to the effective functioning of the Society. In the past year, we have developed Roles and Responsibilities documents for each of the Board positions that describe the duties and level of commitment required to serve.

Commitment is critical to continue the pace of implementation of new and refined programs for our members and the industry. You will notice some changes in the nomination process this year. Once a nomination is received, the information will be verified; then the nominated candidate for a position will be interviewed by a member of the current Governance Committee. This will provide the opportunity for the nominee to ask questions and truly understand the position for which they are volunteering.

There have been situations in the past where a member has been nominated and elected to serve on the Board, but then has not fulfilled their commitment. We anticipate that the new nomination and interview process will help eliminate this situation. As part of this, we are looking at a Bylaws change to eliminate write-in candidates from the voting process feeling that there is plenty of opportunity during the nomination process for qualified candidates to come forward. If nominations are not received for a specific position, the position will remain vacant.

I ask each of you to contemplate if you would like the tremendous opportunity to grow your leadership skills and serve the Society. The Nomination Form, along with the Roles + Responsibilities, is available on the ASPE Website under Home/Board of Directors.

Marcene N. Taylor, CPE
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A Benefit of ASPE Membership: Networking

Once again, I had an experience that assured me that being a member of the American Society of Professional Estimators (ASPE) is worth it! Now most of you know that you can get a few good meeting topics, a couple fun social events, be a part of a fundraiser to help provide scholarships, host an eye popping bid simulation or a phenomenal Estimating Academy likely every year from your local ASPE Chapter. For those that choose to attend ASPE Summit, you learn about the successes and failures of Chapters, about the latest trends in technology, training or hiring, and receive some of the latest information relative to your profession. But, you never know when a random incident really reminds you of the value of ASPE.

I am part of a preconstruction team preparing the initial conceptual pricing for a new College of Business for a private university. We are teamed with a National CMAR and Architect that have extensive comparable information of similar projects around the nation. Our owner’s facilities project manager reviewed the list and data and asked that we add the College of Business at Clemson University. It is currently being built and was close in size and prominence for the campus.

No one on the team knew anyone associated with the Clemson project. I offered to call Steve Sanders from Clemson University. I had met Steve at the 2016 Tampa Bay Summit. He was there as a part of a Higher Education panel assembled to assist the National Educational Committee research the importance for an Estimating textbook and the essential parts to be included. He not only forwarded my request to a colleague, but his colleague forwarded my request to the Facilities Project Manager who responded with an email within a day. I contacted the gentleman and enjoyed a great conversation in which we reviewed the similarities and unique items that would be necessary to affirm the relevance of the comparable information. AND he shared the project budget – not only of the construction costs but the soft costs, A/V and Equipment and FFE. This was even more valuable information for our owner. All this took was recalling that I had an acquaintance through ASPE that could possibly lead me in the right direction. Can you say Amazing?

Have you recently tried to “sell” someone on becoming a member of our great American Society of Professional Estimating (ASPE)? Do you direct them to our website to complete the easy enrollment process? Are you familiar with the information available via the website? What information have you shared with the potential member? Can you tell someone succinctly why you are a member? The ASPE website is very factual on the benefits of membership and then adds, “most members feel that they receive thousands of dollars in value from their annual membership.” I guess this is where this networking experience falls under; yet I am inclined to use the over used phrase that it is “priceless.”

Estimators need to have the trait of curiosity to solve the cost puzzles we are thrown every day. Part of that curiosity involves picking up the phone, email, or google to glean the information we need to solve these problems as we are quantifying and pricing. Perseverance to cure our curiosity is paramount to our profession, and networking is one of the best sources to secure the information.

Should you want to hone your networking skills, a few easy ways are through the ASPE blog and LinkedIn sites.

- ASPE Blogs: https://www.aspenational.org/blogpost
- LinkedIn: https://www.linkedin.com/company/american-society-of-professional-estimators ▲
Certificate Programs +
Online Classes

## Certificate Programs
- Construction Estimating
- Civil Sitework Construction
- Construction Supervision - Civil Sitework
- Construction Supervision
- Construction Practices
- Construction Project Management
- Construction Supervision - Building

## Self-Paced Courses
- 101 Introduction to Construction Estimating
- 102 Essential Construction Math

## Instructor-Guided Courses
- 103 Construction Blueprint Reading
- 105 Estimating + Bidding 1
- 106 Estimating + Bidding 2
- 107 Construction Materials + Processes
- 108 Construction Equipment + Methods
- 109 Practical Applications of Civil Sitework
- 110 Civil Blueprint Reading + Materials
- 114 Estimating Civil + Sitework Construction
- 201S Leadership + Motivation
- 202 Oral + Written Communication Skills
- 203P Problem Solving + Risk Management
- 204 Contract Documents + Construction
- 205T Planning + Scheduling
- 206T Construction Productivity + Cost Management
- 305 Building Green Buildings
- 308 Construction Project Management

Courses begin in January, April, June and September * Each Course is a 10-Week Session

Visit ...
ASPEnational.org / Education / Certificate Programs or Online Classes
for the following Class Information
Fees • Prerequisites • Learning Objectives • Class Organization + Grading • Weekly Syllabus

Assistance is available by contacting
Jennifer, Online Class Coordinator • 615.316.9200 • Jennifer@ASPEnational.org

As an ASPE Member, you will enjoy discounted Class Fees!
Your company has been asked to estimate the cost of cladding two existing buildings. Before this can be estimated, the height of both buildings must be calculated.

- The two buildings are 300 feet apart.
- The Shorter Building is 120’ wide by 180’ long.
- The Taller Building is 120’ wide by 210’ long.
- From the top of the Shorter Building, the angle of elevation of the top of the Taller Building is 23°, and the angle of depression of the base of the Taller Building is 36°.

QUESTIONS:
How tall is each building? How much total cladding material is need for the project? Do not worry about window or door openings or the area of the roof.
Welcome to Our New Members (Oct & Nov)

MEMBERSHIP CLASSIFICATION COUNT

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October

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<tr>
<td>Joshua McDowell</td>
<td>Timberline Construction</td>
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<td>Nicholas Hardie</td>
<td>New York Construction Consulting, Ltd.</td>
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<tr>
<td>William Watkins</td>
<td>William Watkins</td>
<td>Greater Lehigh Valley</td>
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<td>Phathoumma Vayaphat</td>
<td>Webcor Builders</td>
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<tr>
<td>Joshua Gonzales</td>
<td>Sargon Construction</td>
<td>Golden Gate</td>
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<tr>
<td>Mitchell Wylie</td>
<td>Mitchell L. Wylie</td>
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<tr>
<td>Bradford Roy</td>
<td>Consigli Construction Company, Inc.</td>
<td>Maine</td>
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<tr>
<td>Chris Retig</td>
<td>Rosendin Electric Company, Inc.</td>
<td>Silicon Valley</td>
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<tr>
<td>Daniel Muro Muro</td>
<td>Sturgeon Electric Company, Inc.</td>
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<tr>
<td>Allyson Grove</td>
<td>—</td>
<td>Houston</td>
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<tr>
<td>Mary Rotter</td>
<td>Golterman &amp; Sabo, Inc.</td>
<td>St. Louis Metro</td>
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<tr>
<td>John Dear</td>
<td>Sargon ConstructionZana Construction</td>
<td>Denver</td>
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<tr>
<td>Christopher Giese</td>
<td>—</td>
<td>Sacramento</td>
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<tr>
<td>Sue Finegan</td>
<td>LTEC Surface Drains, Inc.</td>
<td>Sacramento</td>
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<tr>
<td>Chang Ye</td>
<td>—</td>
<td>Orange County</td>
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<td>Phillip Thompson</td>
<td>Lombard Consulting Services, Inc</td>
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<td>Lance Wright</td>
<td>DLP Construction Company</td>
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<td>Miguel Monreal</td>
<td>Rocky Mountain Specialty Contracting</td>
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<td>Ryan Mikula</td>
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<tr>
<td>Patrick Cernuto</td>
<td>Straticon, LLC</td>
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<td>Nathan Cress</td>
<td>Cox Fire Protection, Inc.</td>
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<td>Steve Foley</td>
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<td>Quad City</td>
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<td>Nick Westermeyer</td>
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<tr>
<td>Jaren Grady</td>
<td>Superior Wall Systems</td>
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<tr>
<td>Trent Crabtree</td>
<td>Shelby Materials</td>
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<td>Justin Adair</td>
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<tr>
<td>Patrick Quinn</td>
<td>Quinn Brothers Masonry, LLC</td>
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November

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<td>Jeffrey Maes</td>
<td>ISP Painting</td>
<td>Chicago</td>
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<tr>
<td>Alec VandenBroeck</td>
<td>ATM Electric</td>
<td>Las Vegas</td>
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<td>Derek Brown</td>
<td>Austin Commercial L. P.</td>
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<td>Eric Joy</td>
<td>Quality Glass, Inc.</td>
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<td>Brian Mcclue</td>
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<tr>
<td>Robert Arend</td>
<td>Construction Management Resources, LLC</td>
<td>Brew City</td>
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<td>William Thomas</td>
<td>Green Mechanical Construction</td>
<td>Middle Tennessee</td>
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<td>Brent Nolan</td>
<td>Titan Mechanical, Inc.</td>
<td>Maine</td>
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<td>Steve Bryson</td>
<td>Yale Electric Supply</td>
<td>Delaware</td>
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<td>Michael Gross</td>
<td>Plan B Consultancy</td>
<td>Columbia-Pacific</td>
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<td>Erik Williams</td>
<td>CMSWillowbrook, Inc.</td>
<td>Landrun</td>
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<tr>
<td>Brad Porter</td>
<td>PPGC, LLC</td>
<td>Boston</td>
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<td>Otalaye Bakare</td>
<td>—</td>
<td>Houston</td>
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<tr>
<td>William Heller</td>
<td>DBSI, Inc.</td>
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<tr>
<td>Mike Murphy</td>
<td>Paradigm Design-Build, Inc.</td>
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<tr>
<td>Randall Berkebile</td>
<td>Sano-Rubin Construction Services, LLC</td>
<td>Empire State</td>
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Congratulations to New CPEs (Nov)

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<tr>
<td>Aaron Vollet</td>
<td>Construction Process Solutions, LTD</td>
<td>Boston</td>
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<tr>
<td>Sunny Mak</td>
<td>WT. Rich Company, Inc.</td>
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BRIDGE THE GAP BETWEEN BIM AND ESTIMATING

Improve Your 2D Process with 3D Modeling and Takeoff

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- And More...

FACES OF ASPE: Danny Chadwick, CPE

Chapter 50 – Central Florida – Chapter President
Black & Veatch Water Americas
Principal Estimator
Contact: chadwickd@bv.com
estimatordan@gmail.com

Best advice I ever received

Be true to yourself and always act with integrity. Be firm, but be fair.

Always rely on your training. Seek out mentors and question, question, question every thing you do; always be asking why. Look for solutions instead of excuses.

Grow the chapter membership and encourage all estimators to become Certified Professional Estimators.

Best advice I share with young (and not so young) estimators

Chapter goal for 2019

If I wasn’t doing this, I would

Be a pilot for one of the air freight carriers.
Bidding Mistakes – Part I

Tuesday’s Bid Day, or better said Bids Day, was a nightmare. Three projects bidding at the same time. Everyone had their assignments and seemed to be working diligently at organizing and compiling all the subcontractor proposals. Two of the Bids were not huge, $200,000 and $500,000 respectively. The third Bid was a little more complicated. Your bid amount of $5,500,000, along with the eight alternates, which included an alternate for a separate 3,000 square foot addition to the base building, took a little coordination. All of the bids were delivered according to schedule; none were submitted late. The bids were all due at 2:00 PM.

The $200,000 Bid was second to a bidder at $175,000. The $500,000 Bid was low by a whopping $2,600. The third Bid was a private opening so you had no idea where you stood in relationship to all of the other bidders.

You received a call from the Architect at 2:30 PM on the $5,500,000 Bid, in which she indicated that you were the low bidder; but you were low by a significant number. The architect asked that you verify your price and respond by the close of business (same day). You inquire as to how low, but the Architect would not disclose a dollar amount, just that you were significantly lower than the next bidder.

A bid mistake is not much fun in searching for the correct answer. The formal definition of a mistake or more specific to this instance, a bid mistake, is a belief or subjective assumption that is not in accord with the facts or overt signs.

In modern contract law, a unilateral or one-sided mistake means only one party to the contract made a mistake, whereas a mutual or shared mistake indicates both parties made mistakes. Mutual mistakes typically allow for a reprieve because both parties did not have a true manifestation of intent needed to form a contractual agreement. Similarly, a one-sided mistake stops the necessary meeting of minds between the parties to form a contract and relief may be available for the mistaken party.

Most bid mistakes can be grouped as a mistake of law, a mistake of fact, or a mistake of judgment. A mistake of law would include misinterpretation of the plans and specification. A mistake of fact would include mathematical errors or clerical errors. A mistake of judgment, would include items involving which price to use or mistaken projection on labor production rates.

MISTAKE OF LAW

If a mistake of law can be empirically proven, then most courts will likely award relief. The fundamental principle guiding courts is that mistakes deserving equitable or justifiable relief prevent a meeting of the minds between the mistaken bidder and the owner, and such mistakes are provable in a factual manner.

MISTAKE OF FACT

Mistakes of fact typically take on those made in a clerical nature and are almost always given to the erring bidder. An example of a Mistake of Fact would be transcribing numbers in a reverse order. Typing or writing in a value of $120,000 when the correct number should have been $210,000. One consideration in getting relief from a Mistake of Fact is that the mistake must be large enough, such that if requiring the bidding contractor to use the mistaken number, would be considered an injustice. A clerical error of $210,000 when the number should have been $211,000 would probably not hold scrutiny for relief.
MISTAKE OF JUDGMENT

Mistakes of Judgement are not subject to empirical proof. These types of mistakes do not warrant justifiable relief because they represent the intent of the bidder. Examples include underestimating quantities of material, underestimating labor production rates, or bids submitted based upon a guess. Additionally, selecting a subcontractor based on past performance in order to determine future performance will not receive relief.

The primary principle used by courts regarding Mistake of Judgement is that errors in judgment are inherent business risks that the contractor assumes when bidding on a project and courts will not relieve such errors. In the above scenario, the mistake was one of a clerical mistake. A price was transcribed in error as $190,000 instead of $910,000. What happens now?

2 Balaban-Gordon Co. v. Brighton Sewer Dist, 342 N.Y.2nd at 440
3 Carrier Corporation v. United States, 6 Cl.Ct. 169, 175 (1984)
4 634 S.W. 2d 168 (Mo. 1982)

An example of a Mistake of Fact would be transcribing numbers in a reverse order. Typing or writing in a value of $120,000 when the correct number should have been $210,000. One consideration in getting relief from a Mistake of Fact is that the mistake must be large enough, such that if requiring the bidding contractor to use the mistaken number, would be considered an injustice.

To be continued …

Call for Nominations

2019 Elections
Board of Directors

The Following elected positions will appear on the 2019 Ballot

PRESIDENT
1ST VICE PRESIDENT
2ND VICE PRESIDENT
SOUTHWEST GOVERNOR
CENTRAL PLAINS GOVERNOR
NORTHEAST GOVERNOR

Candidate nominations are due by February 1
Elections will close March 19

To continue and build upon ASPE’s growth as the industry’s leader and recognized authority in professional estimating, a passionate and committed Board of Directors is essential

Begin planning by seeking nomination or nominating an ASPE Member who exemplifies the qualities needed for these important Board positions

Roles + Responsibilities for each Board of Directors position is available for review by interested parties

For more information, please visit ASPEnational.org / Members Only / ASPE Resources / Board of Directors Nomination Form or by contacting Elaine at ecersosimo@ASPEnational.org
Creating and Growing a Company’s Education Culture

As the Chair of the ASPE Education Committee, Coach and Trainer for 100 some JLL Project Managers and Project Coordinators as well as an occasional ASU Guest Teacher, education is engrained in my daily life.

Every conversation I have whether classroom, email, telephone, or face-to-face is an opportunity to listen to that individual’s needs or immediate challenge and evaluate myself to better communicate a past or future lesson.

Two immediate thoughts we should all have when listening are did you train them effectively before the situation arose to prevent the current pause, or can you document the current situation and embed it in future training to share the lessons learned? Is your company’s iterative learning structure gaining or losing lessons learned, or getting so dusty that people are not listening when it is presented? Are your lessons too long or unexciting that students switch off after 15 minutes and that programmed cost of time is wasted?

Of all the media I use for training, the one-on-one is the most valued. Ensure you are listening to the issue first. It is all too easy to be in a hurry to just resend a Power Point, form, sentence, or blurb from a previous training that you think fits this instance. Before doing so, do you question why they did not understand the training provided the first time? Is there a need to restructure the training for better understanding or add new information or technology?

Another resource is leveraging your workforce. Lessons learned in 2018, shared through whatever media you deem productive, provides all employees the vested interest in the company’s future and cements that they are all responsible and involved to grow that company’s productivity and knowledge together.

As this year closes out, one item I have acknowledged is that all training I have available and documented, requires constant updating, similar to an estimating data base. To lose a valuable lesson learned or be perceived as having dated lesson plans and technology is one reason your new workforce may tune out and miss a valuable opportunity to prevent losses in productivity and your company’s next level of growth.

What lessons learned this year do you need to document and share in 2019?

Have a happy, productive, and learning filled 2019!

ANNOUNCEMENTS

To protect online privacy, ASPE has implemented a Privacy Policy to ensure compliance with and in response to the General Data Protection Regulation (GDPR), effective December 1, 2018. The ASPE Policy identifies how personal information, gathered from Members, Non-Members, and visitors to our website, is processed and protected. The Policy is available on the ASPE website by selecting Home / Privacy Policy.

Note … ASPE does not store payment information.

Recommended Bidding Procedures, an ASPE guide for Competitively Bid Construction Projects, has been updated and is available for (complimentary) download by Members. The revised 8th Edition is available on the ASPE website by selecting Resources / Publications.

Note … Non-Members may purchase for a minimal cost of $5.

CPE Renewal is now completed annually, with a Cycle End Date of December 31. Please note that Late Fees are assessed if Renewal is not accomplished timely and will be imposed effective January 2.

Note … A grace-period for CPE Renewal is no longer available.
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Section 7: Factors to consider while estimating reclaimed wood
Section 8: Ratios and Analysis
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Section 10: Estimating Material & Labor
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SECTION 1: INTRODUCTION

The goal of this paper is to teach the reader “How to Estimate the Cost of Reclaimed Wood Flooring Using LEED Guidelines.” It is the intent that after reading this paper, a thorough knowledge and understanding of all components identified in the paper can be utilized so that the reader can properly determine and estimate all elements involved with installing reclaimed wood flooring for a complete and accurate cost estimate.

Section 2: THE IMPORTANCE OF LEED CERTIFICATION

All building projects can benefit from obtaining a high LEED certification. This is especially true for existing commercial buildings, government buildings and school buildings.¹

The following are just a few of the reasons why obtaining LEED certification is so important:

Reduce your environmental footprint

The operation of your building has a huge impact on the environment. A LEED Gold certified building produces 34 percent less greenhouse gas emissions than a non-LEED certified building.¹

Save money

By obtaining LEED certification or even improving your LEED score, you can save more money in the long run. This is especially important for businesses in commercial spaces that need to reduce their overhead as much as possible.¹

By improving things such as energy efficiency and water efficiency, the building owner will realize greatly reduced monthly utility bills, which can add up to a substantial amounts in the long run – notably for larger buildings.

What is LEED and why is it important?

LEED is a Green Building program administered by the non-profit U.S. Green Building Council. LEED certifies buildings, not products or manufacturers. A building can get LEED certified if it earns a certain number of LEED credits or points. Each point or group of points relates to a different environmentally friendly technology or material. There are different levels of certification depending on how many points the building earns (LEED Certified, LEED Silver, LEED Gold, LEED Platinum), and there are many points that the project team can choose from as they design the building and plan which level of certification they want to attain.¹

A flooring product might help a building qualify for one or more LEED points, but a single product doesn’t guarantee that the building gets the point because the point is awarded based on how products from that category of materials were used throughout the entire building. For example, there is one LEED point that a building can earn if 50% or more of all of the wood going into the building is certified by the Forest Stewardship Council (FSC). Another point can be earned if none of the engineered and composite wood products in the building were made with urea-formaldehyde adhesives. So, a particular product selection can only contribute to the achievement of a LEED point. Also, it may be that the project team has decided not to pursue the credit that is relevant to the category of materials in question, in which case the product selections in that category may not matter, even though the building is still going for LEED certification.¹
With new wood flooring, FSC certification and ‘no added urea-formaldehyde’ (NAUF) are the two key attributes that specifiers are looking for when they’re working on a LEED project. They may still use products that don’t have those attributes, since the 50% calculation allows for the use of a mixture of certified and uncertified wood, and they may decide not to pursue the ‘no added urea-formaldehyde’ credit.

Section 3: FACTORS TO AFFECT PRICING AND TAKEOFF

There are many factors and considerations that need to be included in the estimate so that it is a complete estimate can be compiled. After reading this paper the estimator should have a thorough understanding of all direct and indirect items required for to complete the estimate of installing reclaimed wood flooring. In this paper, the author will describe factors that will need to be included in the estimate; these items include:

- Procurement and Freight
- Site Conditions
- Substrates and Moisture Testing
- Product selection
- Acclimation, Installation, and Finishing
- Protection
- Submitting for LEED points

Section 4: TYPES AND METHODS OF MEASUREMENTS

For the purposes for estimating reclaimed wood flooring material, the author will use the standard measuring format to determine the square footage [SF] for an area; the common “shapes” of floor plans are either square or rectangular. The following method will be used to determine the square foot for both “shapes”:

\[
\text{Total Area} = \text{Area 1} + \text{Area 2}
\]

There are parts of the wood floor system that we will utilize another unit of measure called linear/lineal footage [LF] such as quarter round trim. This will be discussed in more detail later in the paper. We will calculate installation using man hour(s) [MH] to determine the cost of labor. The three aforementioned units of measurements are the basics of calculating the cost of the labor and material for the product.

Section 5: SPECIAL FACTORS TO CONSIDER THAT MAY AFFECT TAKE-OFF

There are specific factors to consider when pricing finishes, especially the installation of reclaimed wood flooring. The quantity and location can have an impact on the final cost of any installation. Both of these factors are important during this phase of the estimating process.

Small Quantities versus Large Quantities

There are several factors that can determine cost. The quantity of material can have a large impact on an estimate – both material and labor cost. Manufacturers often offer discounts for purchasing material in bulk. For example, buying ten thousand square feet of material versus one thousand square feet can save you ten to twenty percent in material cost. This is a general rule of thumb and each manufacturer needs to be consulted prior to assigning any bulk discount.

Freight can also be a factor. If the manufacturer does not offer direct shipping to a supplier, then utilizing a private shipping company can add additional cost. In addition, five pallets of material could cost the same as shipping ten pallets if it’s less than a truck load (LTL).

Labor is also attributed to quantities. Most labor contractors offer different labor rates for projects depending on the size or duration. For example, if the project is small and will last one week, labor forces would charge more per square foot than if it was a larger project that was scheduled to last three months.

Geographic Location

The location of the project within the United States has an effect on the cost of labor. Labor rates in more populated areas are higher than those in smaller cities. Specifically, reclaimed wood flooring is a custom trade that most flooring contactors do not specialize in or have full time labor crews that perform this type of custom flooring. In most cases, there are few installers that specialize in this trade and sometimes travel state to state to install reclaimed wood floor. In these instances, lodging, travel time, and per diem all have to be factored when estimating installing reclaimed wood floor.

Illustration 1

\[
\text{Area 1} = \text{Length 1} \times \text{Width 1}
\]

\[
\text{Area 2} = \text{Length 2} \times \text{Width 2}
\]

\[
\text{Total Area} = \text{Area 1} + \text{Area 2}
\]
Section 6: PURPOSE OF USING RECLAIMED WOOD FLOOR

Why use reclaimed wood flooring in a project?

Using reclaimed wood flooring in your project is one of many methods to achieve LEED certification for Building Design and Construction (LEED BD+C). There are several credits wood flooring can achieve for LEED certification:

- MR7 Certified Wood
- MR 5.1 and 5.2 Sources Material regionally
- EQ4 Low Emitting Materials

What is reclaimed lumber?

Reclaimed lumber is processed wood retrieved from its original application for purposes of subsequent use. Most reclaimed lumber comes from timbers and decking rescued from old barns, factories and warehouses, although some companies use wood from less traditional structures such as boxcars, coal mines and wine barrels. Reclaimed or antique lumber is used primarily for decoration and home building; for example for siding, architectural details, cabinetry, furniture and flooring.

Section 7: FACTORS TO CONSIDER WHILE ESTIMATING RECLAIMED WOOD FLOORS

The estimator needs to consider and include other factors that will have a direct effect on the final price. These factors need to be included in the estimate. They include:

1. **Moisture Testing - RH**
2. **Job Site Conditions**
3. **Substrate**
4. **Installation method: gluing vs. nailing vs. floating**
5. **How the floor should be installed & waste factor**

1. **Moisture Testing - RH:**
   - A moisture test for RH (relative humidity) is required before installing the wood floor if the wood floor is being installed over a concrete substrate. Provisions for labor to conduct moisture tests, provide a written report, and the equipment required needs to be included in the estimate.

2. **Job Site Conditions:**
   - The HVAC system must be turned on and air must be consistent throughout the installation process. This could change how you estimate the schedule. For proper installation, reclaimed wood should be given a minimum of 72 hours in a conditioned environment to acclimate to ambient conditions, potentially increasing labor costs and time to completion.

b. Additional labor for stocking the job site with the material before the installation needs to be included as direct labor in the estimate. Other factors that need consideration by the estimator are the size of the project, how many floors (levels) are involved; is an elevator available or will a separate piece of equipment need to be rented such as a lift to stock the project? Omitting these components could cost thousands of dollars to the bottom line.

3. **Substrates:**
   - The estimator needs to determine and factor in the substrate the reclaimed wood floor is being installed over. For example, if the wood flooring is installed over a concrete SOG or elevated concrete slab, and if the Moisture – RH has an above normal reading, there are additional provisions that need to be included in the estimate. Different manufacturers recommend different methods for preparing a concrete substrate; the estimator needs to refer to the specific manufacturer’s installation guidelines for each material type selected for specific projects so that the warranty will not be voided due to improper substrate preparation.

b. Some additional floor prep required may include:
   - Installation of a poly vapor barrier to prevent hydrostatic pressure
   - Installation of LiquiDam™, a liquid moisture mitigation product
   - Pressure treated furring strips

***It is important that the estimator reads the project specifications, blueprints and the manufacturer’s recommendations. The manufacturer’s recommendation often identifies critical information and instructions for the installation of their product that will require monetary provisions that are not typically listed in the specifications or blueprints; failing to read the manufacturer’s installation instructions can void the warranty and have negative impacts to the estimate.

4. **Installation method: gluing vs. nailing vs. floating:**
   - The manufacturer’s installation instructions will assist you in determining what method to use for installing the specified wood floor. The substrate will also determine this factor.

b. The cost factors to consider with each method are:
   - **Gluing:** the amount of adhesive required to glue the floor and additional labor will also be required vs. a floating floor
   - **Nailing:** the amount of fasteners that will be required to nail the floor in place; other cost factors include the purchase or rental equipment such as the nail gun and compressor and additional labor needs to be factored for nailing.
iii. Floating: this method also uses glue – the difference between this method and the gluing method is that the adhesive is applied directly to the tongue of each plank and not troweled onto the substrate as with the gluing method. Monetary provisions for adhesive and labor need to be included in the budget.

5. How the Floor Should Be Installed & Waste Factor
   a. The direction at which the plans call for the flooring to be installed could potentially add both additional labor and material cost. Most manufacturers suggest a 5%-10% waste factor when ordering wood flooring; this should be used as rule of thumb and not a definitive calculation.
   b. There are several factors to include when calculating waste factors. For example, the illustration below from Hosking (Illustration 2) shows large rooms, hallways, coves, and closets. The smaller rooms, unequal rooms, and coves all add additional waste versus installing flooring in large, open rooms.
   c. Installing floor on a diagonal plane (45°) versus straight could add an additional 15-20% waste factor.

SECTION 8: RATIOS AND ANALYSIS
Typically finishes run 7% - 9% of a construction project’s overall budget. Since reclaimed wood flooring is a specialty item, a 10%-12% ratio may be more in line with expected costs. Asking the general contractor to assist in obtaining this percentage to the project’s overall budget would solidify this ratio.

The above percentages are dependent on the project’s overall design and objectives. Usually reclaimed wood flooring has a higher procurement rate due to the sourcing requirements and additional non-manufactured requirements that increase costs compared to traditional non-reclaimed wood floor installations.

Illustration 2

SECTION 9: SAMPLE SKETCHES
(Sketches may be viewed on the ASPE website)

SECTION 10: ESTIMATING MATERIAL AND LABOR
Once the estimator has reviewed the project specifications, blue prints, and manufacturer’s installation instructions, it is time to assemble the estimate of direct costs. The direct costs include material, labor, equipment, procurement, freight, and tax.

The estimator should start by reading the Finish Plan or Finish Schedule located on the blueprint or in the specification manual. This will show what room or areas are designated to receive the reclaimed wood floor; if there multiple reclaimed wood floor selections, the legend on the finish schedule will show the different designation (i.e. RWF-1, RWF-2, ...). The finish plan will also list the required accessories that will be installed as part of the floor assembly system. These will include transitions strips, control joints, and trim such as quarter round or shoe molding.

The estimator should next identify the rooms on the floor plans that get reclaimed wood flooring and begin to quantify the square footage of each room as shown in Illustration 1 on page 16. The dimension should always be rounded to the nearest whole foot when performing a take-off (example 12’-6" = 13’). During this point in the take-off, it should be noted what substrate is being used so the appropriate subfloor, PVB, or furring strips can be measured to enter into the estimate. The estimator should also perform a perimeter take-off of each room – this will provide the linear foot dimensions to calculate shoe molding or quarter round trim. Also, if the wood floor butts next to a dissimilar material, such as carpet or vinyl flooring, the linear foot dimension of this area needs to be taken so that the amount of transition strips needed can be measured to complete the reclaimed wood floor installation can be calculated.

If there are multiple reclaimed wood floor selections, the estimate should be grouped by the floor material selection. The reason for this is that each individual material costs may be different for the selected materials. To save the estimator time, it is practical to use a digital or eTake-Off tool such as BlueBeam™ or Vu360™. Both programs offer user friendly interfaces that can group the parts of the estimate as outlined above. They can even be exported into a spreadsheet.

Once the estimator has performed a detailed take off of the reclaimed wood floor, the required substrates, the associated trim and any other items such as transition strips or control joints, it is time to enter the quantity take-offs into an estimating program or cost
spread sheet such as Microsoft Excel. Both will calculate the labor and material cost based on the information the estimator inputs. Another important factor to consider is that some material used for reclaimed wood flooring is not manufactured like typical wood flooring. It is usually made from old barns, box cars, flooring from structures such as schools, houses, warehouses, etc. Sourcing this material is not like ordering from engineered wood flooring companies such as Armstrong or Lumber Liquidators. There are two companies located in Richmond, Virginia they are Wellborn + Wright, Inc and Surface Architectural Supply, that specialize in reclaimed wood to be used on floors, walls and other architectural features.

Both of these reclaimed wood specialists require the following questions to be answered before they can submit a material cost. All answers are cost factors that need to be considered when estimating reclaimed wood floor:

a. What is the age of the wood?
b. What is the desired wood species? The more rare the wood, the higher the cost.
c. Is the wood painted? Yes…
   a. Is the paint lead based? If so, it will have to be abated by a certified lead-paint abatement contractor.
d. Does the thickness of the reclaimed wood vary? If so, it will have to be planed for a uniformed thickness.
e. Does the reclaimed wood have tongue and groove edges? If not, the tongue and groove edges will need to be milled into the lumber.
f. What is the final finish of the reclaimed wood?
   a. Stained or clear coated? Smooth finish or textured finish?
g. What are the Architect’s or Owner’s expectations of a “final finish”? How many mock-ups will be required?
h. Do the contract documents specify a quantity for attic stock?

Once the above quantity take off is complete and the answers to the above questions are answered, the estimator can begin to input the collected data in the estimate format.

**Entering Data into the Cost Sheet**

As soon as the material take-off is complete, it should be submitted to the company that the material will be sourced from. Most manufacturers require a specific quantity of material before they submit a final material price for inclusion into the estimate to determine if bulk discounts are available or to be able to calculate the freight and shipping costs.

**Items to Include in the Bid Submission**

When entering the quantities for the reclaimed material, the waste factor needs to be added (this percentage factor should be noted in the estimate). Enter each type of floor system separately and identify the material as per the finish schedule to eliminate confusion. The cost estimate should be set up so the per square foot for labor and material is automatically calculated and totaled. The substrate material will be entered separately for each material used (i.e. plywood, PVB, or furring strips). Next, the accessories such as transition strips, quarter round, or shoe molding will be entered. Once the unit cost for the labor rate is identified and the material cost is known, it should be entered in the appropriate cell. The estimate should be set up to calculate all of the data automatically. Any additional direct costs such as freight, lead paint abatement, or subcontracted items such as milling or planing costs should be added to the budget. The sub-total should be known at this point. Next, percentages for general conditions, burden, insurance, overhead, profit should be calculated. Once these percentages are added, the total estimate will be calculated.

When submitting the bid or estimate, a summary sheet, list of clarifications, and a list of assumptions and exclusions, if necessary, should accompany the estimate. This is important so the owner or general contractor is fully aware of all of the inclusions and exclusions that the estimator has assumed. Other items that that could be included if applicable are:

- Site conditions expected prior to the flooring installation
- The acclimation requirements that need to be addressed (climate control)
- Site readiness or preparedness expectations
- The amount of time the material needs to be acclimated onsite prior to installation
- Anticipated schedule
- Protection of installed materials and maintenance of installed materials
- Documentation for Certification of LEED points attributed to the reclaimed wood floor installation.

Providing a detailed take-off with the estimate will ensure that the project team is fully aware of what is and what is not included in the estimate. (continues on page 21)
### SECTION II: SAMPLE ESTIMATE

**Project:** HAWTHORNE MILL APARTMENTS  
**Architect:** Main Street Architects  
**GC:** General Contractor of America  
**Plan Date:** 08/10/2016  
**Bid Date:** 05/05/2017 - 2:00 PM  
**Sub:** Reclaimed Wood Specialist, LLC.  
**Division:** 09 64 20 - Reclaimed Wood Flooring  
**Total SF:** 65,125

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**UNIT**  
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**COST**  
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**COST/ S.F.**

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</table>

### SUMMARY

|                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|
| TOTAL DIRECT COSTS   | 698,106.54           | 697,066.54           | 697,066.54           |
| FREIGHT              | 3,750.00             | 3,750.00             | 3,750.00             |
| TAX                  | 28,472.29            | 28,472.29            | 28,472.29            |
| OVERHEAD & FEE       | 109,393.32           | 109,393.32           | 109,393.32           |
| TOTAL ESTIMATE       | $ 838,682.16         | $ 838,682.16         | $ 838,682.16         |

### ASSUMPTIONS & EXCLUSIONS

1. Excludes Floor Protection After Installation  
2. Assumes HVAC System Will be Turned on 96 Hours Prior to Stocking Wood Floor  
3. Price Included Demo of Existing Floor Finishes Where New Reclaimed Floor is Installed Only – all Other Floor Covering Removal is Excluded.
Conclusion
Estimating the cost of reclaimed wood flooring for LEED points is more complex than that of estimating a traditional engineered wood flooring project. By following the above outlined items and answering the step-by-step questions, the estimate should be complete and accurate. The reclaimed wood flooring installation will add LEED points to the project that help achieve the LEED Certification Designation.

Footnotes:
1 Guide to LEED Certification (http://www.usgbc.org/cert-guide)
2 Armstrong Sustainable Design (http://www.armstrong.com/content2/flooring/files/75439.pdf)

SECTION 12: REFERENCES
http://www.usgbc.org/cert-guide/commercial
http://www.homeadvisor.com/cost/flooring/install-wood-flooring/
http://www.homeflooringpros.com/blog-guides/hardwood-floor-installation-cost/
http://www.oldewoodltd.com/what-to-know/resource-library/installation-guidelines/installation-moisture-testing
http://www.armstrong.com/flooring/top-10-hardwood.html
http://www.armstrong.com/flooring/hardwood.html
http://www.delmhorst.com/blog/topic/rh
http://flooring-professionals.com/flooring-resources/relative-humidity-and-hardwood-flooring/

Surface Architectural Supply
Wellborn + Wright
1504 Belleville Street
3801 Carolina Avenue
Richmond, VA 23230
Richmond, VA 23222
804-918-2467
804-329-0079
http://www.surface-supply.com/
http://www.wellbornwright.com/

SECTION 13: GLOSSARY
CSI: Construction Specification Institute
HVAC: Heating Ventilation and Air Conditioning
FSC: Forest Stewardship Council
LEED: Leadership in Energy and Environmental Design
LF: Linear / Lineal Foot
LTL: Less Than Truck Load
MH: Man Hours
NAUF: No Added Urea Formaldehyde
PV: Poly Vapor Barrier
RH: Relative Humidity
SOG: Slab on Grade
SF: Square Foot
USGBC: United States Green Building Council
VS: Versus
ConsensusDocs... **BUILDING A BETTER WAY!**

Whether working at the office, from the road or even at home, the ConsensusDocs platform provides instant access to your contract documents from any computer through a secure, web-based portal. Simply log-in and your personalized dashboard makes it easy to locate recent projects, edit contracts, review changes made by your collaborators or start a new contract using any of our 100+ contracts.

**Editing, Collaboration, Conversions and Comparisons Made Easy**

The Microsoft Word-based technology allows you to take any ConsensusDocs contract and quickly customize it to meet your specific project requirements. Our collaboration platform allows you to grant review or editing access to other parties and finalize agreements, while maintaining an easy and efficient version-control system. With our conversion and comparison tools, you can quickly convert from Word to PDF and PDF to Word.

**Construction Practices Have Evolved, So Should Your Contracts**

ConsensusDocs contracts are regularly updated to keep pace with the latest changes in best practices and legal updates. From agreements specifically addressing issues such as building information modeling (BIM), green construction, integrated project delivery (IPD) or design-build, our standard contracts, developed by a coalition of leading industry experts, mean you are assured your projects have the best contractual foundation possible.

**Building a Better Way . . . Through ConsensusDocs**

ConsensusDocs contracts are written by 40 leading associations with members from all stakeholders in the design and construction industry. By fairly allocating risk and incorporating best practices, ConsensusDocs help you reduce costly claims and contingencies, and lessen adversarial negotiations, saving you time and money. Our 100+ contracts address all project delivery methods and are written in plain English, so all can easily follow and understand.

**Better Contracts Save Time and Money**

ConsensusDocs users save considerable time and money. Our subscription packages typically cost less than other industry standard forms, so savings start from the beginning. Projects benefit from reduced risk contingencies that increase bid prices. ConsensusDocs are written to neutralize adversarial negotiations and costly claims by aligning each individual’s interest with project success.

**Receive a 20% Discount ~ Use Code ASPE2018**
All Entries Must Include a Project Narrative

Your narrative must not exceed a maximum of 750 words. The narrative should focus on why the project should be considered the best in its category. The descriptions of each of the required elements are meant to be used as guidelines. You should interpret all criteria based on your own unique project submission and respond accordingly. This information will also be during award presentation.

Visual Presentation

While points are not awarded for the visual presentation, the photos may impact your entry in that they help to tell your story. Support your narrative with photos that display the scope and process of the project and any challenges described in the narrative. You may include up to 3 photos in your project submittal.

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- Search the anonymous resume database to find qualified candidates
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Start your search today by visiting ASPEnational-jobs.careerwebsite.com
How Does One Become an Estimator?

I suppose everyone’s story is different, but I’m relatively certain most of us did not go to college, study to become an estimator, then land their first job upon graduating. Like many of you, this career just developed for me. I began working for a small fireproofing contractor who was just starting and needed office support. In the beginning, I went in part time while working as a waitress part time.

While performing secretarial and bookkeeping work (two careers I did take courses for), I began doing estimates for them, as well. Estimating was much more rewarding; it was like assembling a jigsaw puzzle every day. The difference between a jigsaw puzzle and estimating is that, while estimating, you aren’t always given all the pieces. You can pour through all the drawings, read the specs and all the addenda, call the General Contractor, and even write an RFI and still not get it solved.

I guess the solution is winning a bid. Or more accurately, winning the bid and making money on the project. Anyone can be a low bidder; you only need to miss something major.

In developing my own staff, it has been challenging at times. I have learned that you cannot teach everyone the skills of estimating. Over the years, I have learned to start with asking two questions: Do you like puzzles? Can you do math?

You don’t have to love math, and you don’t even have to be skilled in high level math. I used to love it in school; and I use geometry occasionally, but I don’t believe I’ve used algebra in decades.

Because we are a specialty subcontractor, having estimators with a sense of our scope of work helps immensely. That’s why I have recruited several guys from the field and taught them estimating. They obviously help with the logistics of getting a job completed. Alas, I have since been told that I cannot strip our field anymore.

So, I now train from within. I have been successful with one employee and am about to begin training another younger employee. Wish me luck!

Heather Boulanger, CPE
Education Committee
Chapter 5 – Denver
heather@rollingplains.com
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The take-off...

Technical Committee Candidates: If you wish to express interest in serving on the Certification, Education or Standards Technical Committee, you may do so by submitting a completed Application. The investment of the time needed to ensure success on these Committees is a consideration. To learn more about the Roles + Responsibilities, as well as to obtain a copy of the Application, please visit the ASPE Website. From the Home Page, select the Committee under …

- CERTIFICATION, EDUCATION, OR STANDARDS
  Applications available on each Committee page following photos of its Members.
  Committee terms are for a two (2) year period beginning July 1.
  For additional information, contact Elaine (ecersosimo@ASPEnational.org)

Member Receipts: ASPE Members requiring a copy of a receipt for on-line purchases, as well as Membership or CPE renewals, have 24-hour access to this information on the ASPE Website at…

Log Into the ASPE Website
Select: Down Arrow (located adjacent to the Welcome, [your name] at top / right corner)
Select: Invoices
Select: Appropriate Filter (in Filter by Status)
Select Dollar Bill adjacent to the Invoice you wish to view or print

Best advice I ever received
You will never be perfect until three days after you’re dead. But God (and your boss) appreciates your efforts.

Best advice I share with young (and not so young) estimators
Learn it on paper, because then you know if the results from the computer makes sense. Always know your costs. Get it in writing and get it signed. Pick up the phone and talk to people; leaving a message is not talking to that person.

Chapter goal for 2019
Rebuild from the ground up.

If I wasn’t doing this, I would
Be a World Series Champion and Hall of Fame Catcher.
Or teaching history.
The Standards Committee’s plan for the Standard Estimating Practice (SEP) Manual - 11th Edition includes three (3) major focus areas as follows.

- Continuous Improvements to SEP 10th Edition
- Creation of Standard Templates
- New Volume on Conceptual Estimating based upon Building Typology

Continuous Improvements to SEP Technical Sections
As has been done in previous iterations of this publication, the Standards Committee will strive to improve upon existing content. We have discussed with our publisher the option of producing online and/or electronic options so that some content may be found online while other content will remain in the hard copy book, thus a hybrid approach in which the publisher expressed enthusiasm. For the SEP 11th Edition, the Standards Committee will undertake a major re-writing of Part One so that the entire section has one voice and content can be easily found by referencing the Table of Contents. In addition, the Committee will add additional sections to Part Two, the Technical Papers. Previous collaboration with the Certification Committee identified specific paper topics that could be “fast tacked” through the Certification process. The Technical Paper Topics will be reviewed by our Committee, and the best will be selected for editing and publication. Simultaneously, the Standards Committee will review the existing Part Two Sections to identify where improvements may be made. This may include using a newer Technical Paper, updating and supplementing existing sections, and also converting the sample estimates into a standardized format which can be downloadable in an online subscription through our publisher.

Creation of Standard Templates
The Board of Directors has instructed the Standards Committee to produce some standard templates. These will include, but not be limited to, Unit Price Cost Breakdowns, Detailed Pricing for Self-Performing Contractors, as well as Summary Sheets.

The single greatest initiative is a new volume to address the complexities of estimating various building types such as banks, offices, hospitals, gaming facilities, parking garages, hotels, etc.

New Volume for Creating Conceptual Estimate based upon Building Typology
The single greatest initiative is a new volume to address the complexities of estimating various building types such as banks, offices, hospitals, gaming facilities, parking garages, hotels, etc. This is currently in the research phase as Technical Papers are gathered that address these topics to determine what is readily available.

Based upon our research and needs, the Standards Committee may issue a “call for papers” from new or existing CPEs in order to fulfill this vision. In order to make that effective, a standard template will be developed for such papers to ensure uniformity.

The Standards Committee also looks forward to the opportunity to collaborate with the other Technical Committees on areas where synergy exists, including Certification Standardization and Higher Education Textbooks.
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2019 AWARDS
Honoring Members + Chapters for their contributions to ASPE and the construction industry
Honoring Member Estimators for their project successes

ESTIMATOR OF THE YEAR
For excellence in advancing the art of construction estimating thru Standards, Ethics and Practice, while leading + training others, and promoting ASPE throughout one’s career

CHAPTER PRESIDENT OF THE YEAR
For excellence in leading, promoting + supporting the goals and growth of the Chapter

FELLOW AWARD
For having attained national recognition for achievements in the art of construction estimating + who have made exceptional contributions to the Society

LEGACY - HOWARD S. PROUT FOUNDER OF CERTIFICATION AWARD
For excellence in promoting and utilization of Standards of Ethics and Practice

LEGACY - FRANK E. YOUNG EXCELLENCE IN EDUCATION AWARD
For excellence in pioneering and promotion of Educational Opportunities + Advancements

LEGACY - MERLE W. HECKENLIVELY FOUNDER OF STANDARDS AWARD
For excellence in promoting and utilization of Standards of Ethics and Practice

INDUSTRY AWARDS
Celebrating projects displaying overall estimate efficiency and accuracy, unique + innovative design, technology solutions or community involvement

CHAPTER CHAMPION
For dedicated effort + contributions made to the advancement + growth of the Chapter

CHAPTER ACHIEVEMENT
For excellence in promoting ASPE and supporting its Members at the Chapter level

TECHNOLOGY AWARD
For promoting Technology innovation in advancement of the estimating profession

Intent to Submit Forms – Due March 15
Candidate Nominations + Chapter Applications - Due by April 1
Begin planning by nominating an ASPE Member who exemplifies the qualities needed and who deserves acknowledgement for their contributions

ASPEnational.org / ASPE Resources / Awards Requirements + Scoresheets
2019 ASPE Critical Calendar: January – April

JANUARY

1 New Fiscal Year Begins!
1 2019 Summit - Early Registration Opens
4 ASPE Membership: Membership suspended for non-renewal (Renewal due 12/31/2018)
4 CPE Status: Expiring CPEs revoked for non-renewal (Renewal due 12/31/2018)
5 Board of Directors Meeting via Conference Call
8 Education Committee Meeting via Conference Call
9 Certification Committee Meeting via Conference Call
9 Standards Committee Meeting via Conference Call
15 Call for Nominations: Candidates begin submitting applications for Board of Directors positions
22 2019 Summit - Registration Opens for Chapter Representatives
31 Deadline for March/April Estimating Today articles to Society Business Office
TBD Strategic Planning Committee Meeting - Nashville

FEBRUARY

1 Last day for nomination of candidates for Board of Directors to be received by the Society Business Office
8 Last day for Society Business Office to confirm qualifications of candidates for election to the Board of Directors
12 Education Committee Meeting
13 Certification Committee Meeting via Conference Call
14 Chapter Reports due to Regional Governor for March Board of Directors Reports
14 Committee and Technical Committee Chairs progress reports due to their respective Vice President and Society Business Office
21 Last day for Board of Director Reports to Society Business Office for March Board Books
25 Last day for Board of Directors to confirm BOD Election candidate qualifications
27 Last day for Society Business Office to determine voting body for Board of Directors' election

MARCH

1 Last day to issue ballots to eligible voters
1-2 Board of Directors Meeting - Nashville
12 Education Committee Meeting via Conference Call
13 Certification Committee Meeting via Conference Call
13 Standards Committee Meeting via Conference Call
15 Scholarship Applications begin being accepted at Society Business Office
18 Deadline: Submit 'Intent to Submit' form for Award Submittals
19 Last day to vote in the Board of Directors Elections
25 Last day to announce Board of Directors election results
30 2019 Summit - Registration Closes for Chapter Representatives
31 Deadline for May/June Estimating Today articles to Society Business Office

APRIL

1 All Award Nominations / Applications due to SBO
1-25 Election of Chapter Officers to be held (recommended)
9 Education Committee Meeting via Conference Call
10 Certification Committee Meeting via Conference Call
15 Deadline: Scholarship Applications due to Society Business Office
17 Standards Committee Meeting via Conference Call
27 Board of Directors Meeting via Conference Call
30 2019 Summit - Early Registration Closes
Solution: A drawing or sketch will be helpful.

\[ \begin{align*}
\text{hypotenuse} & \quad \text{opposite side} \\
X & \quad  \quad 23^\circ \quad Y \\
300" & \quad 36^\circ \quad 54^\circ
\end{align*} \]

**Step 1: Solve for the heights of the buildings.** Remember Sin / Cos / Tan (Oh Hell, Another Hour, Of Algebra)

**The Shorter Building:** Tangent = Side Opposite / Adjacent Side

Remember those complementary angles, that's how we arrived at 54°. \((90° - 36° = 54°)\)

\[
\tan 54° = \frac{X}{300} \quad \text{multiply both sides by 300}
\]

\[
300 (\tan 54°) = X
\]

\[
(300)(1.3764) = X \quad \text{solve for } X
\]

\[412.91' = X \quad \text{(Height of the Shorter Building)}\]

**The Taller Building:** Tangent = Side Opposite / Adjacent Side

We don't need complementary angles on this part.

\[
\tan 23° = \frac{Y}{300} \quad \text{multiply both side by 300}
\]

\[
300(\tan 23°) = Y
\]

\[
(300)(0.4245) = Y \quad \text{solve for } Y
\]

\[127.34' = the \ Y \ portion \ of \ the \ Building\]

Add the \(X\) height of the Shorter Building plus the \(Y\) height of the Taller Building to get the total height of the Taller Building.

\[412.91' + 127.34' = 540.25'\]

**Step 2: Now that we have the heights of the two buildings, let's work on determining the area of the cladding.**

Shorter Building perimeter x Height: \((120' + 120' + 180' + 180')(412.91') = Area \ of \ Cladding \ of \ Shorter \ Building\)

\[600'(412.91') = 247,746 \ SF\]

Taller Building perimeter x Height: \((120' + 120' + 210' + 210')(540.25') = Area \ of \ Cladding \ of \ Taller \ Building\)

\[660'(540.25') = 356,565 \ SF\]

**Shorter Building Height:** \[412.91'\]

**Taller Building Height:** \[540.25'\]

**Total Cladding Needed:** \[640,311 \ SF\]
Connecting and identifying solutions for more than 60 years!

**Corporate Membership** provides companies exposure to leaders in the field of estimating, as well as direct access to all Members of the **American Society of Professional Estimators**.

Companies seeking a consistent marketing plan through Corporate Membership will expand their reach with opportunities utilizing all communication mediums including the following.

» Website Advertising: **Banner Ads** greet all visitors to the ASPE Website.

» **E-Blast Campaigns** target ASPE Members with your developed message.

» Publication – **Estimating Today**: The bi-Monthly magazine distributed in print form to Members and in digital format to all ASPE website visitors.

» Publication – **Membership Directory + Buyers’ Guide**, distributed in print format to all ASPE Members, is a year-round reference that remains in every estimator’s library long after the year ends.

» **Annual Summit**: Corporate Logo and Overview distributed via the Event Mobile App, via Rotating Ads in Session Rooms, with Corporate-provided marketing insert in Attendees Packets, and on Event Signage strategically placed throughout the Venue. **Corporate Members also enjoy discounted Exhibit Space**.

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» Corporate Members will receive complimentary Registration to the **Senior Estimators’ Roundtable**, an invitation-only event. This annual gathering will host Corporate Member-selected participants from a variety of construction fields and provide the opportunity to discuss emerging trends, news, and impacts that challenge the estimating profession, as well as the construction industry in general. Be part of the discussion, seek insight, and gain a competitive edge to issues affecting your company and impacting the world!

**Is ASPE Corporate Membership** the missing piece of your Marketing Plan?

For more information contact Elaine
ecersosimo@ASPEnational.org
615.316.9200 or 949.246.2082
What will set you apart?

Consider earning your Certified Professional Estimator or Associate Estimating Professional designation.

The Certified Professional Estimator (CPE) and Associate Estimating Professional (AEP) designations acknowledge that you have met, and continue to meet, the criteria established by the American Society of Professional Estimators, recognizing the estimating proficiency and ethical awareness of the individual. These nationally recognized Programs attest that a construction estimator has met the necessary education requirements and has the capabilities necessary of the profession.

The Certified Professional Estimator (CPE) designation is the highest form of professional recognition an estimator may earn and celebrates the years of experience needed to pass the rigorous requirements of this CESB accredited Program. **5+ Years of Experience Required!**

The new Associate Estimating Professional (AEP) designation offers recognition of the education and general estimating knowledge required to be part of this exciting and growing field of construction industry professionals. **Education in a Construction Related Field is the Key!**

Each ASPE Program is offered in an open cycle format that allows candidates to progress at a self-guided pace while successfully completing the following steps.

**Steps to earning your CPE designation ...**

* 5-Years of Estimating Experience  * General Estimating Knowledge (GEK) Exam
* Discipline Specific Test (DST) Exam  * Submit a 2,500+ Word Technical Paper

**Steps to earning your AEP designation ...**

* General Estimating Knowledge (GEK) Exam

Both the CPE and AEP Programs require annual renewal, including the earning of Professional Development Unit (PDU) credits. This ensures that the Estimator keeps abreast of construction industry changes and is motivated to personal growth through continuing education and interaction with others in the field.

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ARIZONA

Arizona #6
Where: Aunt Chilada’s
7330 North Dreamy Draw Drive
Phoenix - 85020
Date: 2nd Tuesday; Time: 5:30 PM
Meeting Contact:
Gene Plum
gplum@mccarthy.com

Old Pueblo #53
Where: Varies
To Be Determined
Tucson
Date: 1st Wednesday; Time: 5:30 PM
Meeting Contact:
Trip McGrath, CPE
tripm@compusultinc.com

ARKANSAS

Arkansas #33
Where: Baldwin & Shell
1000 West Capital Avenue
Little Rock - 72201
Date: 3rd Friday; Time: 12:00 PM
Meeting Contact:
Chuck Garrett, CPE
cgarrett@baldwinshell.com

NW Arkansas #79
Where: Varies
To Be Determined
Bentonville
Date: TBD; Time: TBD
Meeting Contact:
Carrie Morones, CPE
aspe.carri@gmail.com

CALIFORNIA

Los Angeles #1
Where: The Barkley Restaurant
1400 Huntington Drive
South Pasadena - 91910
Date: 4th Wednesday, Jan. - Oct.
Time: 6:00 PM Social Hour
Meeting Contact:
Bruce Danielson
la1ofaspe@outlook.com

Golden Gate #2
Where: AIA East Bay
1405 Clay Street
Oakland - 94612
Date: 3rd Wed.; Time: 6:00 PM Social Hour
Meeting Contact:
Jeremiah Newens
jnewens@southlandind.com

Golden Gate (CONTINUED)
Orange County #3
Where: Ayres Hotel
325 Bristol Avenue
Costa Mesa - 92626
Date: 2nd Wed.; Time: 5:30 PM
Meeting Contact:
Kevin Murphy
president@aspe-oc3.org

San Diego #4
Where: Varies
To Be Determined
San Diego
Date: 3rd Tuesday; Time: 5:30 PM
Meeting Contact:
Mike Moyers, CPE
michael.moyers@bestinteriors.net

Sacramento #11
Where: Rancho Cordova City Hall
2729 Prospect Park Drive
Rancho Cordova - 95670
Date: 2nd Friday; Time: 12:00 PM
Meeting Contact:
Bryan Hall
bryan.hall@vanir.com

Silicon Valley #55
Where: Varies
To Be Determined
To Be Determined
Date: Varies; Time: Varies
Meeting Contact:
Alan Jacobs, CPE
alan.jacobs@blach.com

COLORADO

Denver #5
Where: To Be Determined
Denver
Date: 2nd Tuesday; Time: 5:00 PM
Meeting Contact:
Paul Jonez
pjonez@gtc1.net

CONNECTICUT

Nutmeg #60
Where: Back Nine Tavern
245 Hartford Road
New Britain - 06053
Date: Varies; Time: 6:00 PM
Meeting Contact:
Harrison Levy
klevy@petraconstruction.com

Yankee #15
Where: To Be Determined
Stratford, CT
Date: TBD; Time: TBD
Meeting Contact:
Gregory Williamson, CPE
gwilliamson@bondbrothers.com

DELAWARE

Delaware #75
Where: Varies
To Be Determined
Wilmington
Date: 2nd Wednesday; Time: 5:30 PM
Meeting Contact:
Estel Taylor
etaylor@albireoenergy.com

DISTRICT OF COLUMBIA

Greater D.C. #23
Where: Jacobs
1100 North Glebe Road, Suite #12
DC
Date: 3rd Thursday; Time: Varies
Meeting Contact:
Maurice Touzard, CPE
mtouzard@gmail.com
ASPE CHAPTER MEETINGS (CONTINUED)

FLORIDA
Tampa Bay #48
Where: Grillsmith
612 N. Dale Mabry Highway
Tampa - 33607
Date: 3rd Wed.; Time: 5:30 PM
Meeting Contact: Jim Cummings
jim.cummings@jedunn.com

Indiana
Central Indiana #59
Where: To Be Determined
Indianapolis
Date: 3rd Thursday; Time: Varies
Meeting Contact: Matt Burress
mburress@performanceservices.com

Gold Coast #49
Where: To Be Determined
West Palm Beach
Date: TBD; Time: TBD
Meeting Contact: Carri Morones, CPE
aspe.carri@gmail.com

Old Fort #65
Where: To Be Determined
Fort Wayne
Date: Last Thursday; Time: Varies
Meeting Contact: Phillip Salisbury, CPE
psalisbury@blundall.com

Orlando #50
Where: To Be Determined
Orlando
Date: TBD; Time: TBD
Meeting Contact: Danny Chadwick, CPE
dkchadwick@bellsouth.net

IOWA
Quad Cities #71
Where: To Be Determined
Davenport
Date: Varies; Time: Varies
Meeting Contact: Keith Parker, CPE
keithparker@circlebco.com

Greater Des Moines #73
Where: To Be Determined
Des Moines
Date: 1st Thursday; Time: Varies
Meeting Contact: Ray Conway
aspe.ia.73@gmail.com

GEORGIA
Atlanta #14
Where: Sage Woodfire Tavern
4505 Ashford Dunwoody Road
Atlanta - 30346
Date: 2nd Mon.; Time: 11:30 AM Social Hour
Meeting Contact: Clinton Aldridge
clinton.aldridge@skanska.com

LOUISIANA
New Orleans #9
Where: To Be Determined
New Orleans
Date: TBD; Time: TBD
Meeting Contact: Carri Morones, CPE
aspe.carri@gmail.com

MAINE
Maine #37
Where: Woodard & Curran
41 Hutchins Drive
Portland - 04102
Date: 1st Wednesday; Time: Varies
Meeting Contact: John Brockington, CPE
jbrockington@woodwardcurran.com

MARYLAND
Baltimore #21
Where: To Be Determined
Baltimore
Date: Varies; Time: Varies
Meeting Contact: Clint Townshend
ctownshend@phoenix-eng.com

Massachusetts
Boston #25
Where: Maggiano’s Little Italy
4 Columbus Avenue
Boston - 02116
Date: 3rd Wed.; Time: Varies
Meeting Contact: Erick Vargas
evargas@garlandboston.com

Michigan
Detroit #17
Where: Visit www.aspe17.org
To Be Determined
Detroit
Date: 3rd Tuesday; Time: 5:15 PM
Meeting Contact: Gerald McClelland
gmcclelland@auchconstruction.com

Western Michigan #77
Where: Varies
Grand Rapids
Date: Varies; Time: Varies
Meeting Contact: Mike Alsgaard, CPE
maalsgaard@ftch.com

Illinois
Chicago #7
Where: Barbakoa Tacos & Tequila
1341 Butterfield Rd
Downers Grove - 60515
Date: 3rd Thurs; Time: 6:00 PM Social Hour
Meeting Contact: Bryan Mixer, CPE
bmixer_rvc@msn.com

Greater Des Moines #73
Where: To Be Determined
Des Moines
Date: 1st Thursday; Time: Varies
Meeting Contact: Ray Conway
aspe.ia.73@gmail.com
ASPE CHAPTER MEETINGS (CONTINUED)

**MINNESOTA**
- Viking #39
  - **Where:** To Be Determined
  - **St. Paul**
  - **Date:** To Be Determined
  - **Time:** To Be Determined
  - **Meeting Contact:** Keith Parker, CPE
    keithparker@circlebco.com

**MISSOURI**
- St. Louis Metro #19
  - **Where:** To Be Determined
  - **St. Louis**
  - **Date:** To Be Determined
  - **Time:** To Be Determined
  - **Meeting Contact:** Keith Parker, CPE
    keithparker@circlebco.com

**NEW JERSEY**
- Garden State #26
  - **Where:** The Appian Way Restaurant
    619 Langdon Street
    Kenilworth
  - **Date:** 3rd Thursday
  - **Time:** 5:30 PM
  - **Meeting Contact:** Jeffery Senholzi
    costnav@ptd.net

**NEW MEXICO**
- Roadrunner #47
  - **Where:** Fiestas Restaurant
    4400 Carlise Boulevard NE
    Albuquerque - 87107
  - **Date:** 1st Wed.
  - **Time:** 11:30 AM Social Hour
  - **Meeting Contact:** Jimmy Sample, CPE
    jimmy.sample@bixbyelectric.com

**NEW YORK**
- New York #10
  - **Where:** To Be Determined
  - **New York City**
  - **Date:** To Be Determined
  - **Meeting Contact:** Bruce Schlesier, CPE
    bruce_schlesier@msn.com

- Empire State #42
  - **Where:** Athos Restaurant
    1814 Western Avenue
    Albany - 12203
  - **Date:** To Be Determined
  - **Meeting Contact:** James Madison, CPE
    jmadison1@gilbaneco.com

**NEVADA (CONTINUED)**
- Las Vegas #72
  - **Where:** To Be Determined
  - **Las Vegas**
  - **Date:** 2nd Thursday
  - **Time:** To Be Determined
  - **Meeting Contact:** Chuck James, CPE
    wq@clarkcountynv.gov

**OKLAHOMA**
- Landrun-OK City #80
  - **Where:** Ingrid’s Kitchen
    3701 North Young Boulevard
    Oklahoma City - 73112
  - **Date:** 1st Wed.
  - **Time:** 11:30 AM Social Hour
  - **Meeting Contact:** Phyllis Battle
    pbattle@preconstructionservices.com

**OREGON**
- Columbia-Pacific #54
  - **Where:** University Place
    310 W. Lincoln Street
    Portland - 97201
  - **Date:** 3rd Tuesday
  - **Time:** 5:30 PM
  - **Meeting Contact:** Craig Welburn
    cwelburn@cherrycityelectric.com

**OHIO**
- Buckeye #27
  - **Where:** To Be Determined
  - **Columbus**
  - **Date:** To Be Determined
  - **Meeting Contact:** Keith Parker, CPE
    keithparker@circlebco.com

- Southwestern Ohio #38
  - **Where:** To Be Determined
  - **Cincinnati & Northern Kentucky**
  - **Date:** 3rd Thursday
  - **Meeting Contact:** Ileen Davisson
    ileen.davisson@modspace.com

**NEBRASKA**
- Great Plains #35
  - **Where:** To Be Determined
  - **Omaha**
  - **Date:** To Be Determined
  - **Meeting Contact:** Keith Parker, CPE
    gmwfam5@gmail.com
ASPE CHAPTER MEETINGS (CONTINUED)

► PENNSYLVANIA
Greater Lehigh Valley #41
Where: To Be Determined
To Be Determined
Allentown
Date: TBD; Time: TBD
Meeting Contact:
Gregory Williamson, CPE
gwilliamson@bondbrothers.com

Three Rivers #44
Where: To Be Determined
To Be Determined
Pittsburgh
Date: TBD; Time: TBD
Meeting Contact:
Kevin Sheahan
kevin.sheahan@aecom.com

Philadelphia #61
Where: To Be Determined
To Be Determined
Philadelphia
Date: 3rd Wednesday; Time: Varies
Meeting Contact:
Jay Kellogg, CPE
jaykellogg@kel-con.com

Central Pennsylvania #76
Where: Loxley's Restaurant
500 Centerville Road
Lancaster - 17601
Date: 2nd Wed.; Time: 6:00 PM Social Hour
Meeting Contact:
Dan Dennis, CPE
dd@EGSConstruction.com

► TEXAS
Houston #18
Where: Spaghetti Westerns
1608 North Shepherd
Houston - 77007
Date: 2nd Monday; Time: 6:00 pm
Meeting Contact:
Dennis Pyland
dennis.pyland@gmail.com

Rio Grande #40
Where: Ray's at Pershing Inn
2909 Pershing Drive
El Paso - 79903
Date: 1st Thursday; Time: 6:00 PM
Meeting Contact:
Rodolfo Barba, CPE
rodolfo.barba1@gmail.com

► WASHINGTON
Puget Sound #45
Where: Best Western Executive Inn
200 Taylor Avenue North
Seattle - 98109
Date: 3rd Tuesday; Time: 6:00 PM
Meeting Contact:
Steve Watkins
swatkins@walshgroup.com

► WISCONSIN
Brew City #78
Where: To Be Determined
To Be Determined
Milwaukee
Date: Varies; Time: Varies
Meeting Contact:
Keith Parker, CPE
keithparker@circlebco.comz

► TENNESSEE
Middle Tennessee #34
Where: Adventure Science Center
800 Fort Negley Boulevard
Nashville - 37203
Date: 1st Friday; Time: Varies
Meeting Contact:
Ricky Sanford
rsanford7159@gmail.com

► UTAH
Great Salt Lake #51
Where: Varies
To Be Determined
Salt Lake City
Date: 3rd Thursday; Time: Varies
Meeting Contact:
Phil Capell, CPE
president@aspe51.org

► VIRGINIA
Richmond #82
Where: Baskervill
101 South 15th Street, Suite #200
Richmond - 23219
Date: 4th Wednesday; Time: 5:00 PM
Meeting Contact:
Mark Pitts
mark@haleyshope.net

Please Note: Information is subject to change. Report changes in your Chapter’s information with an email to jennifer@ASPenational.org
ASPE CORE VALUES

EDUCATION:
ASPE educates and mentors professional estimators for the sustainability of the construction industry.

PROFESSIONALISM:
ASPE promotes the lifelong pursuit of excellence and credibility in professional estimating.

FELLOWSHIP:
ASPE develops a fellowship of professional estimators that connects and leads the construction industry.