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**Contact Us**
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As we are all aware, this is a very serious and strange world we now live in. ASPE recognizes all the difficult requirements Covid-19 has placed on our businesses and the Society as well. We must comply with all the directions and requirements that are placed on us by the governing bodies in our Cities and States. We, as a Society, have either postponed or transitioned our Regional meetings to a video conference style meeting. This should also be the case for all Chapter meetings.

Those individuals that were scheduled to attend the “Advancing Preconstruction” program by Hanson Wade in May should be aware that this event has been postponed. When the program is rescheduled, information will be distributed. We will make a decision about ASPE involvement when the new schedule is published.

At this time, the 2020 Summit in San Antonio is still on schedule for late August. However, we are monitoring the conditions with Covid-19 and with the hotel on a weekly basis. Any decision on the Summit will be announced to membership as soon as more information is available.

Information will soon be shared about the CPE and AEP Program requirements in support of your efforts to earn PDU credits. The Board is aware of the additional difficulty and challenges that today’s restrictions have presented, while being sensitive to the CESB requirements of certification.

We as individuals, Companies and as a Society will get through this crisis. Communication is vital; and should you have questions or need information, please don’t hesitate to contact a Board Member.
Announcements

Member Directory: ASPE Members should have received the 2020 ASPE Membership Directory to the address that is on file. ASPE Members can also obtain this information on the ASPE Website at …

Log Into the ASPE Website
Select: Members Only Tab
Select: 2020 Membership Directory

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 Tina (Tina@ASPEnational.org)

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.

Congratulations to New CPEs + AEPs (February + March)

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<tr>
<th>NAME</th>
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<th>CHAPTER</th>
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<tr>
<td>Jason Rapelye, CPE</td>
<td>Butterfield Electric</td>
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<td>Siddharth Raut, AEP</td>
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<td>AECOM DESIGN AND CONSULTANCY SERVICES</td>
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<td>Rutuja Gosavi, AEP</td>
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<td>Carissa McGrath, AEP</td>
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## Welcome to Our New Members (February + March)

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<td>Twining, Inc.</td>
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<td>W. A. Thomas Co. Inc.</td>
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<td>Phil Houston</td>
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<td>Kevin Baker</td>
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<td>Andrew Kerner</td>
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<td>Christopher Watson</td>
<td>J.S. Held LLC.</td>
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<td>Richard Bagwell</td>
<td>bay city mechanical</td>
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<tr>
<td>Keith Poisso</td>
<td>SOUTHLAND ELECTRIC INC.</td>
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<td>Rob Culver</td>
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<td>Corey Wollen</td>
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<td>Terri Pierce</td>
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<td>Sara Snow</td>
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<tr>
<td>Maribel Saenz</td>
<td>Saenz Utility Contractors, LLC</td>
<td>Southwest MAL</td>
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### Membership Classification Count (as of 04/15/2020)

- **Affiliate**: 57
- **AEP**: 24
- **CPE**: 468
- **Estimator**: 650
- **Fellow**: 23
- **Honorary Member**: 6
- **Member Emeritus**: 51
- **Student**: 32

**Total**: 1,311
Project Report

Jack A. Vickers Boys & Girls Club at the Nancy P. Anschutz Center

Denver, Colorado

Photography: James Ray Spahn
Architecture: OZ Architecture
Jack A. Vickers Boys & Girls Club at the Nancy P Anschutz Center

Jack Vickers is known as one of the most influential men in Colorado, a man who made his riches in oil and his name by bringing big-time sports to his native state.

But for the kids in the Northeast Park Hill area of Denver, the name of Jack Vickers will be associated with hope.

The Jack A. Vickers Boys & Girls Club is part of the Nancy P. Anschutz Center and is a beacon of light in a neighborhood that has more than its share of underserved youth. The complex, in fact, was built on land that once housed a shopping center devastated by gang-related arson in 2008.

And if the Vickers Boys & Girls Club is a beacon of light for the 250 at-risk young people it serves on a daily basis, then Kalwall is helping illuminate that message.

Kalwall translucent wall panels are a featured design element in the recreation room and the gymnasium, providing the beautiful and welcoming day-lit space that has helped make the facility what John Arigoni, president and CEO of the Boys & Girls Clubs of Metro Denver, called “truly the best and safest facility we’ve built in 52 years”.

The Anschutz Center and the Vickers Boys & Girls Club, designed by OZ Architecture, earned the Mayor’s Design in 2014, and is the fourth ground up project for the Boys and Girls Clubs of Metro Denver that Kalwall has been involved with.

Approximately 1,800 ft² of Kalwall panels were used in the gymnasium and 450 ft² in the recreation room.

“Kalwall was a perfect fit for the project on many dimensions,” said Brent Powers of Powers Products in Denver, the region’s Kalwall distributor. “Diffuse natural daylight provides an ideal environment for the youth development activities that take place daily in both the gym and recreation room. From a design perspective, Kalwall fits harmoniously into the façade with gently curved arched top heads and nighttime backlighting that creates a stunning effect.”

The Boys and Girls Club was also keenly interested in the ability to save on electricity and HVAC costs through use of this highly insulated system. Kalwall panels delivered, producing a U factor of .23 with a light transmission of 20 percent and a solar heat gain coefficient of 0.28.

For the best thermal performance available in any translucent daylighting technology consider specifying Kalwall+Lumira® aerogel insulation for panel U-Values up to 0.05 (R-20). Available in panels sizes up to: 4’ W x 12’ L or 5’ W x 10’ L x 2-3/4” thick
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FACES OF ASPE: Thad Berkes

Best advice I ever received
Challenge contractors on pricing if the cost seems too low or too high. It’s all about relationships, so pick up the phone to get an answer on the cost difference.

Best advice I share with young (and not so young) estimators
Make the phone call and ask the hard questions, in a nice way. I’ve always had a great response from construction industry experts. There is a great deal of pride in construction field work and these individuals are always happy to walk through a question and share their knowledge.

Chapter goal for 2020 - 2021
Provide educational and purposeful events to attract more talented members.

If I wasn’t doing this, I would be
I love to rebuild old dirtbikes and bring new life to neglected motorcycles.

Chapter 65 – Old Fort – Chapter President
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Calling All CPEs!

- Imagine you are a young estimator who is assigned to work on an estimate for a new hospital radiology floor?
- Suppose you have been a healthcare estimator for 10 years, change jobs and are asked to estimate a new casino?
- What are your next steps if you encounter a project type that you have never estimated before, and are not even sure what you don't know?

The Standards Committee is working to address this challenge by introducing a new SEP publication that will support estimators, at all levels of experience, to expand their skillset and detail unique information about specific project types. But your help is needed!

ASPE is calling upon all CPEs to share your knowledge by writing Technical Papers on various project types in which you consider yourself an expert. So whether you are an expert in estimating for banking institutions, hospitals, casinos, manufacturing plants, sewer treatment plants, grocery stores, restaurants, office buildings, housing or hotels, we hope you will participate. To reward this effort, the Certification Committee will award the author of successful Technical Papers with 12 PDUs. In addition, if the Technical Paper is selected for publishing, an additional 4 PDUs will be awarded!

*(Successful Technical Paper = Earning a Passing Score of 20+)*

ASPE is seeking very specific topics. To ensure that a variety of Technical Papers are received, please contact Cinder McDonald, Certification Committee Coordinator (Certification@ASPEnational.org) prior to proceeding, for a list of possible topics. After a topic is approved, you will be provided with the established parameters / the standardized format for the Technical Paper.

If you have any questions regarding Standards, please contact Karla Wursthorn, Standards Committee Chair at kwursthorn@tnward.com.

Thank you for considering this opportunity to be part of this first of its kind estimating reference book!
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Section 9: Sample Take-Off and Pricing Sheets
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SECTION 1: INTRODUCTION
The intent of this technical paper is to provide the reader with the information required to estimate the costs associated with furnishing and installing floor and wall tile in a bathroom. The paper will discuss the importance of understanding the plans and specifications in the preparation of a cost estimate. The author will discuss the process from the point of view of a subcontractor submitting a bid to a general contractor.

To illustrate the estimating process for floor and wall tile, the author will utilize plans and specifications from a multi-family residential project that were prepared to the Construction Document level and approved by the City of authority. For clarity in this technical paper, the author will focus on one bathroom within one unit plan and will refer to the project plans and specifications for tile type and installation guidelines.

Brief Description of Subject Matter
Tile is a versatile material that can be utilized in many areas of a home including floors, backsplashes and tub/shower surrounds. Tile comes in a variety of types and grades and can be laid in an assortment of patterns.

The substrate to which tile is attached varies depending on the installation location. Some substrates may require additional backer boards, sheet membranes and/or underlayments to provide an adequate base for tile installation. During the preparation of the estimate, the estimator shall prepare a list of assumptions and clarification to include the substrate to be installed by others prior to the commencement of tile work.

For example in referencing Figure 4 in Section 8 of this technical paper, a detail illustrating tile installation at the tub/shower walls, the author finds that 5/8” cementious backer board is the required substrate. Tile installers will sometimes include cementious backer board in their scope; this typically occurs on smaller jobs. On larger jobs it will likely be more cost and time efficient for the drywall subcontractor to perform this scope. The sample project for this technical paper is a larger job so the estimator will qualify in the estimate that backer board shall be placed by others.

The timing of floor and wall tile installation is dependent on the completion of work by other trades/subcontractors. Prior to the installation of floor tile the bathtub and/or shower, the vanity and the rough plumbing for toilet shall be in place. Drywall shall be in place, finished and textured. Painting will typically not be complete prior to tile installation in new construction. Prior to the installation of bathtub tile surround, the bathtub and surrounding substrate will be in place. The type of surrounding substrate will be designated in the plans and specifications. Plumbing will be roughed in with appropriate cuts in the wall board made for future shower and tub control attachment.

The installation of tile is performed in multiple steps and various cure times are required depending on the product specified and environmental conditions.

1. Waterproof membrane – If specified in the design, the waterproof membrane will be applied in one or two coats to achieve the specified thickness. The cure time will vary depending on the specified product and ambient temperature; the product specified in the sample project has a 2-3 hour cure time prior to tile installation.
2. Mortar and Tile – Cure time for mortar can range from 24-48 hours.
3. Grout – Cure time for most products and application conditions is 72 hours.
4. Grout Sealer – If specified, the grout sealer would be applied after the grout has cured for the specified amount of time and would be the final step in the installation process.

Due to the required steps and varying cure times required, scheduling and coordination can have significant impact on pricing. Project schedule impacts are discussed further in Section 3.

SECTION 2: TYPES AND METHODS OF MEASUREMENTS
There are various methods utilized in performing quantity take-offs. These include manual take-offs from a printed set of plans or the use of computer-based estimating software with a digital set of plans. In the use of both take-off methods the estimator shall stay aware of the scale of the drawings. Architectural plans will often have a variety of details that define the bathtub/shower area that may or may not have consistent scales.
Performing quantity take-offs for tile requires different units of measure depending on the scope of work.

- Field tile, the primary tile used to cover a wall or floor, is measured by square foot (SF).
- Trim tile and base, the edge tile at the perimeter of the tub/shower or floor, is measured by linear foot (LF).

In calculating the amount of tile necessary for a project, the estimator must factor in a certain amount of wasted tile and associate material. Tile waste will occur as tile is cut down to accommodate the dimensions of a given area. Additionally, there will be excess mortar and grout that will need to be accounted for. The amount of waste can vary depending on the complexity of the tile pattern, the layout and dimensions of the space, as well as the size of the tile. A good rule of thumb is to add ten percent (10%) extra tile and material for waste. For example, if the estimator’s take-off shows 200 SF of floor tile will be needed the estimator should include 20 SF extra for waste (200 SF x 10% = 20 SF waste). Tile pattern and layout dimensions will also have an impact on labor time.

Some examples of patterns the estimator may encounter include:

- **Straight or Stack Bond**: Tiles are laid in straight lines with the grout lines lining up with one another giving a grid appearance. A modification of this pattern is a Diagonal pattern where the tiles are laid at a forty-five degree angle.
- **Running or Stretcher Bond**: Tiles are laid to look like bricks in a wall. Each tile is set to start at the center of the tile below it.
- **Herringbone**: Tiles are laid at a ninety degree angle to one another in a zig-zag pattern giving the appearance of “V” shape.
- **Windmill and Pinwheel**: A combination of tile sizes are utilized to create these similar patterns. In the Windmill pattern, four rectangular tiles are arranged around a smaller square tile. In the Pinwheel pattern, for square tiles are arranged around a smaller square tile.

As the tile layout pattern gets more intricate, the estimator should factor in additional labor time and a higher amount of waste. Of the above listed pattern layouts, the Herringbone, Windmill and Pinwheel patterns would require more labor and likely have more waste than the Straight/Stack Bond and the Running/Stretcher Bond.

**SECTION 3: PROJECT SPECIFIC FACTORS TO CONSIDER**

Tile installation costs can be affected by a number of project specific factors including product selection, size of the project, and the overall project schedule.

**Product Selection and Associated Criteria**

The plans and/or specifications will generally callout the specific type of tile to be included in the project. On occasion, there will be a list of alternates or a note to the bidder that an approved equal will be considered. When considering product selection it will be important to note the lead times for products. If a comparable product is utilized in the bid it is critical that the estimator note the alternative product in his/her list of qualification submitted with the bid.

In projects of all sizes it is a good practice to provide a certain amount of extra tile stock to the customer. In the project utilized for this estimate, extra stock is a requirement. Per Specification Section 093013 of the sample project, the contractor is to provide extra tile, trim and grout for the project.

**1.7 Maintenance Material Submittals**

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.

B. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

In addition to the request/requirement to provide extra stock to the customer, some customers will require mockups of the various installations prior to the start of work. A thorough understanding of the project specifications will tell the estimator if extra materials should be included for these mockups or if the mockup can ultimately become part of the completed project scope.

**Project Size and Schedule**

The estimator shall have a thorough understanding of the project schedule to ensure products can be acquired on time and that the project team is adequately staffed to complete the job in the allotted time frame. On a larger project it is likely that the tile work will be phased, typically by floor, so it will be necessary to factor in material storage and mobilization costs. Multiple deliveries on a project can start to add up as the estimator factors in gas, mileage and labor. In addition, multiple mobilizations can result in lost productivity of the crew as the tile layers re-familiarize themselves with the project.

As discussed in Section 1, tile installation occurs in a number of steps and there is required lag time between each stage. In a well-staged project a tile subcontractor could progress their crew(s) throughout the building without lag time. For example, the estimator could plan for one crew to lay tile progressing from one floor to another while a second crew comes in behind them to install grout after the specified cure time. This increases efficiency as the crews stay familiar with their task and the project conditions which can translate into lower labor costs.

If the overall project schedule is organized in an inefficient manner it may cause the subcontractor crews to make multiple trips to the project or have only partial days of work leading to higher labor costs overall.
SECTION 4: OVERVIEW OF COSTS

The costs to be considered in the estimate include labor, material, overhead and fee/profit.

Labor

Labor cost are calculated on an hourly basis and will include factors such as company labor rates, makeup of the crew needed for each project task and labor productivity.

The project specifications will advise the estimator if the project will require prevailing wage rates or if open shop rates will suffice. Prevailing wage rates are typically required when government funding is involved in a project. Once the estimator has determined what labor rates are applicable, he/she will need to add the appropriate labor burden into the cost estimate. Labor burden is the actual cost of an employee to a company. In addition to the wage paid to an employee, a company will pay employer taxes, workers’ compensation, liability insurance and benefits (vacation and health care). These costs can vary depending on project location. For the purpose of this technical paper, the author will utilize the labor rates provided in the 2018 Residential Labor Rates document published by RS Means which identifies the average Tile Layer and Tile Layer Helper base wages rate along with average employer markups.

The size of crew needed will depend on the task at hand and the magnitude of a project. In the sample project used for this technical paper, a single bathroom, the crew size is limited by the small workspace whereas the tiling of a large amenity space could accommodate a larger crew. The production rate is the amount of time it will take to produce any given amount of work with a given crew make-up. Below is an example of how to determine a production rate.

Example of Daily Production

- Crew Size: One Tile Layer & One Tile Layer Helper
- Tile Layer Rate: $43.40/hour
- Tile Layer Helper Rate: $33.50/hour
- Work Performed per 8 hour shift: Layout and Place 270 SF of Tile on Floor
- Total Crew cost per 8 hour shift: ($43.40 x 8 hours) + ($33.50 x 8) = $615.20/day
- Total Labor cost per SF: $615.20 / 270 SF = $2.28/SF

A tile subcontractor will likely have a database that identifies standard production rates based on past projects. There are also estimating software/databases such as RS Means that can provide direction on crew size and crew make-up. The estimator can utilize these databases as a starting point and make adjustments based on project specific factors (i.e. accelerated schedule or tight work spaces).

Material

The estimator shall rely on the data provided in the plans and specifications when preparing the estimate. To properly estimate floor and tub/shower surround tile, the estimator will need to know the following:

- Substrate material
- Moisture barrier material
- Mortar type
- Grout type
- Tile type and layout

A thorough review of the plans will be necessary in estimate preparation as detail references are not always fully identified. Architectural floor plans ought to indicate the dimensions of each space and provide references for interior elevations and details. Interior elevations show the views of the walls within a given space. Sections and details should provide additional necessary information on wall layers and components. Project Specifications will provide material requirements and installation practices that will be key in estimating project costs. If data is unclear or not provided, the prudent action to take is the submission of a Request for Information (RFI). Refer to Section 8 Sample Sketch for additional information regarding product identification.

Sales tax will need to be included on all purchased material. In some locations it will be required to apply sales tax to the entire contract amount. The estimator should refer to local regulations for guidance.

Overhead

Overhead captures a contractor’s indirect costs to include insurance, bonds and miscellaneous small tools required for project completion. This line item can also capture costs related to project management and accounting that is not specifically identified in the labor costs.

Fee

Fee is the amount of profit a company will charge for the work. This is calculated as a percentage of the hard costs (labor and material). Companies will often have a standard rate charged, however, it can vary depending on miscellaneous factors such as the subcontractor’s need for work and/or the complexity of the project.

SECTION 5: SPECIAL RISK CONSIDERATIONS

The main risk for tile installation is project schedule changes as scheduling of tile installation is dependent on the timely completion of other trades. Another risk is a delay in material acquisition. It is important for an estimator and the project team to be aware of product lead times and factor in ample time for submittal review and approval.
SECTION 6: RATIOS AND ANALYSIS

Due to the fact that most residential tiling projects are relatively similar in nature, a subcontractor can benefit by keeping an internal database tracking past project costs. For use in comparison it would be useful to note the following:

- Bid date and completion date
- Number of residential units in the project
- Location of project
- Change orders that significantly modified the bid price
- Project specific features (i.e. a large amenity space with custom tile work)

If a company maintains an up to date log of project costs, the estimator can compare a current bid and identify any cost abnormalities. An abnormality may be due to an estimating error or it may be the result of a particular project consideration (i.e. product selection).

SECTION 7: MISCELLANEOUS

There are many resources available related to tile installation. One source is the Tile Council of North America (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation. This book provides clarification and guidance regarding the installation of tile taking into a variety of conditions and factors that an installer may come across.

The TCNA Handbook references American National Standard Institute (ANSI) installation standards which is another excellent source of information. ANSI Section A108 is the, “American National Standard Specifications for the Installation of Ceramic Tile.” This publication provides detailed and technical guidance for the installation of ceramic tile in a variety of settings.

SECTION 8: SAMPLE SKETCH

Figure 1: Sample Floorplan showing the bathroom plan that will be utilized in the estimate.

In the plan set utilized for this technical paper, detail references are not provided on the Unit Plans. The estimator’s familiarity with the plan set will allow them to utilize the Sheet Index to find the pertinent details that will be used in their takeoff and estimate.

The floorplan provides a keynote PFT-4 that indicates the floor tile specified by the designer. With this information, the estimator shall refer to the project specifications to find the specified products associated with this keynote. The project specifications note the following:

- PFT-4 – 12” x 24” unglazed porcelain tile. Basis of Design Product is Stadium by Emser.
HTETCO Floor and Wall Tile ... continued

Figure 2A: Floor and Floor Base Detail

Detail 4D

Detail 4D informs the estimator what specification section they ought to refer to for the Ceramic Tile and Mortar. It also shows that the bullnose tile along the base of the wall will be installed on a drywall substrate.

This detail does not indicate the type of substrate the floor tile will be installed on so the estimator would be required to research the plans to find the appropriate detail.

Figure 2B: Floor Detail

Detail 4

Detail 4 indicates that the tile shall be placed on a Lightweight Concrete Topping that is over an Acoustical Underlayment Mat.

Figure 3: Bathtub Plan & Elevations

Detail 2C

Detail 3C

Detail 4C

Detail 2B

The above graphic shows an enlarged view of the bathtub (Detail 2B) and each elevation of the bathtub surround (Details 2C-4C). Detail 2B provides a reference to a cross section of the bathtub assembly (4A/A457) which is provided in Figure 5.

The bathtub elevations provides keynotes indicating the types of tile specified by the designer:

- Bathtub surround tile – PWT3
- Floor baseboard tile – PTB4

With this information, the estimator shall refer to the project specifications to find the specified products associated with those keynotes. The project specifications note the following:

- PWT3 – 4" x 16" glazed porcelain wall tile. Basis of Design Product is Vogue by Emser.
- PTB4 – 3" x 13" unglazed porcelain tile. Basis of Design Product is Stadium by Emser.

Both products provide a list of alternate manufacturers and allow the contractor to offer a comparable product for review and consideration. The option to provide an alternate manufacturer and product can be a cost saving opportunity as discussed in Section 3.
HTETCO Floor and Wall Tile ... continued

Figure 4: Detail 3D/A458 as referenced in Typ. Tub – Elevation B (Figure 3)

Detail 3D informs the estimator what specification section they ought to refer to for the Ceramic Tile and Mortar. It also shows that the bathtub wall tile will be installed over 5/8” cementious backer units and a continuous waterproofing membrane.

Figure 5: Detail 4A/A457 as referenced in Typ. Enlarged Tub Plan (Figure 3)

Detail 4A shows the same substrate for the bathtub wall tile as Detail 3A but also indicates a waterproof sealant at the intersection of the tile and bathtub.
SECTION 9: SAMPLE TAKE-OFF AND PRICING SHEETS

The sample estimate is for one bathroom to include tile flooring and tub/shower surround. Materials used will be as noted on the sample plans and noted in Section 8. The estimate assumes that the floor substrate has been prepared and leveled and that the specified backer board has been installed at the tub/shower surround.

Take-offs

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Diagram: Floor Tile - 79 SF, Bullnose Base - 28 LF
HTETCO Floor and Wall Tile ... continued

- Waterproof Membrane - 69 SF
- Waterproof Sealant - 10 LF

- Ceramic Tile - 65 SF
- Bullnose Tile - 26 LF
## Labor Costs

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## Material Costs

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Subtotal $ 1,994.74

Overhead (10%) $ 199.47
Profit (10%) $ 219.42

Total Estimate Cost $ 2,413.63

SECTION 10: REFERENCES
The sample estimate is for one bathroom to include tile flooring and tub/shower surround. Materials used will be as noted on the sample plans and noted in Section 8. The estimate assumes that the floor substrate has been prepared and leveled and that the specified backer board has been installed at the tub/shower surround.

Value Engineering

When asked ‘What is Value Engineering?’ Do you think of cutting the cost, making the building smaller, removing scope from the project, rebidding the project to more subcontractors? The correct answer is to add value to the project.

Value analysis was created in the early 1940’s by Lawrence D. Miles while he worked for General Electric, a major defense contractor, during World War II. He proposed products are purchased for either function or esthetics and desires. I need a hammer to build my backyard deck this weekend and a new grill to cook dinner. If I buy the grill with the six burners and the Wi-Fi controls in a custom color to match my college football team, it is very desirable. I can still cook a great meal without those accessories added to the grill. The hammer performs work, the super grill is very desirable. A value engineering study would confirm the hammer is what I need to build my deck, and I can cook dinner on the grill without the Wi-Fi and matching school colors. Lawrence Miles asked the question; can a design be improved, or would a different material achieve the same function? He had a change in thinking, to move from reviewing the existing parts to improving the conceptual design. A new process was born: think before you build.

In the 1950’s, his process started to be used in other industries and analysts were hired. Those hired were engineers and were called Value Engineers. In 1959, the Society of America Value Engineers was incorporated; and in 1996, the name was change to SAVE International. Value Engineering is a process used by a team to improve the value of a project through analysis of its function. Function analysis is the foundation of Value Engineering. Functions are described using two words: measurable noun / active verb. A hammer is used to apply force, and a pen is used to write. The Value Engineering team reviews the project’s functions to determine how it can be improved and made more efficient and cost effective. The tool used by value engineers is the Function Analysis System Technique (FAST Diagram).

Why use Value Engineering? There are several reasons, including customer satisfaction, productivity improvement, quality improvements; and it is a tested system that has worked for over 50 years. It is result oriented, operations enhanced, lowers life cycle costs, and brings cost savings to the project. Many of the Value Engineering techniques that are used for a formal study are used by estimators all of the time, but in different ways and by different names.

Reasons for poor value that occur on a construction project include lack of time, information, ideas, habits, politics, and a lack of money (or fee).

Lack of Time:
Each member of the design team has a set date to complete their final design/plans. There is only a limited time to achieve the best design for the best value. The statement made on all projects to the design team from the client, generally is, “Get the design done, bid the project, we need the widget store open in ten months.”

Lack of Information:
New materials, technology, and products are constantly entering the market. No member of the design team can keep up with these changes, and what is done in one area of the country is very different in another area.

Lack of Ideas:
The design team cannot think of everything. It could be time, money, or materials. The team can’t always second guess. An idea is selected, and the design follows that idea.
**Habits:**
It was done this way before and it worked; why change? If the new or “better idea” fails, costs the owner additional money or delays the completion of the project, how does the team explain that to the owner? It is easy to cut and paste details from a previous project into the current project.

**Politics:**
There are many people to please and each know what is best for them. Often the least costly solutions may not be acceptable to the residents in the surrounding area of the project.

**Lack of fee:**
Not having the proper fee to design a project can affect the end project. At time, to stay within the project budget, short cuts are taken that can affect the project.

A Value Engineering study can help to address all of the above reasons. Who should be involved at the Value Engineering (VE) study is as important as the study itself. The owner and their end-user of the project should be an integral part. If it is a hospital bed tower, the nursing department should be involved in the study. If it is a hotel, housekeeping and the restaurant staff should have representation in the study.

Engineers and architects, who were not on the original design team should be included in the Value Engineering study. A Certified Professional Estimator certified by the American Society of Professional Estimators and a Value Engineer trained by SAVE International round out the Value Engineering study team.

All Value Engineering studies start by using the same four phases: Information Phase, Creative Phase, Judgement Phase, and Recommendation Phase.

**Information Phase:**
Define the project, discover the background information of how or why the design team got to where the project is (what did they think the owner intended them to design).

**Creative Phase:**
Ask questions; do not assume; think outside of the box. This is an open discussion with all members of the VE study because no idea is a bad idea. The floor is open to all ideas at this time. All ideas are recorded covering the walls with sticky notes of ideas.

**Judgment Phase:**
Review each idea from the creative phase for advantages and disadvantages. Then rate each of the ideas from one to ten, ten being the most desirable. At this time, the team does not know if an idea will work, can be developed or will bring value to the project and save money. Those questions are answered with a cost assigned during recommendation phase.

**Recommendation Phase:**
The recommendations phase brings value engineering ideas into function. The team prepares the best ideas selected from the creative phase with a cost for each, and life cycle cost if it applies to an idea. The recommendations can challenge the original design. The ideas from the recommendation phase are now presented to the original design team and the owner. The Value Engineering team presents their ideas in the following format: what it is, what it does, what it must do, what else will perform the same function, and what will that cost. The owner and original design team can decide to accept or reject the VE ideas presented.

Value Engineering cannot be done in a vacuum. It is not a one estimator solution, because the project is over budget, using the “slash and burn method” to cut cost. Value Engineering is a team process that works best with a trained team.

In all of the excitement of finding cost saving ideas, the question to be asked by the Value Engineering team is how does the change affect the big picture of the project. Remove wall tile in a private restroom and paint the wall, great idea. What about increasing the floor to ceiling height to add ballrooms to a hotel for additional income? What happens to the column lengths, building weight and foundation size, skin of the building, plumbing risers, HVAC vertical duct runs, electrical conduit runs, metal studs, drywall, and elevator runs, etc.? These are all factors to be considered during a Value Engineering study.

Do not wait for the right opportunity to use Value Engineering, do something now on your project, because there is no better time to start.
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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 **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 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.

Learn more at [ASPenational.org / Certification](http://ASPenational.org/Certification)
Thank You to our Partners!

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FACES OF ASPE: Richard Baus III
Chapter 61 – Philadelphia – Chapter President
Bencardino Excavating, Inc.
Contact: RickB@bencardino.com

Best advice I ever received
Never be afraid to ask a question or offer a different point of view.

Best advice I share with young (and not so young) estimators
Be Humble, Build Relationships, and Your Reputation. In the end, all you have is your word.

Chapter goal for 2020 - 2021
Continue to make ASPE valuable to our members.

If I wasn’t doing this, I would be
Probably be a business / construction consultant
Get Your Company’s Projects Published!

Having Your Case Study Published in Design Cost Data is a Prestigious Affair.

Get the recognition your projects and your firm deserves. No matter how big or how small, all architectural projects are of interest to your peers. Benefits of having your project published:

- Gain national recognition with a featured Case Study which focuses on your firm’s design capabilities.
- Legitimize your work to your peers.
- Contribute to a unique historical database development tool that enables the construction industry to develop cost models based on actual construction.

Submitting a case study is easy! Simply call DCD to indicate your interest in having a featured case study, and from documents you already have on hand, our editors can assist you in putting a case study together quickly and effortlessly.

You supply the information and let DCD do the work.

To be sent a Case Study Submittal Package or to find out more about how easy it is to have your project published, call Patty Owens toll-free, 1-800-533-5680.

Do something good for your company today!

Save the date …

2020 ASPE Estimators’ Summit
Riding the Wave
August 19 – August 22

The Westin Riverwalk – San Antonio
420 West Market Street, San Antonio * 210-224-6500
Home of the Alamo

$ 975 – Early Registration through 04/30/2020 PDUs Awarded: 16
$1,100 – Regular Registration through 07/14/2020
$1,325 – Late Registration through 08/02/2020
Guest Ticket: $125

Register @ https://www.ASPEnational.org/mpage/2020Summit
Stop wandering in the woods trying to reconcile marked-up plans and prior estimates. Save multiple hours of exhausting plan review with the overlay features of On-Screen Takeoff® and leave the mystery to the cryptozoologist.

Now, you’ll spot plan changes in a flash -- red is dead; blue is new. Find out for yourself -- download a free trial of On-Screen Takeoff now.

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Like a large, hairy creature, hidden details can sometimes leave an enormous footprint on profitability.

Membership has its perks! Claim 10% off On-Screen Takeoff.

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2020 ASPE Critical Calendar: May - August

May
8 Deadline for Chapters to identify their 2020 Summit Chapter Representative
12 Deadline for Chapters to submit Chapter elections result form to Society Business Office
13 Certification Committee Meeting via Conference Call
19 Standards Committee Meeting via Conference Call
20 Education Committee Meeting via Conference Call
27 Committee and Technical Committee Chairs progress reports due to their respective Vice President and Society Business Office
28 Scholarship Winner(s) to be announced (to Winners only)
28 Deadline: 2020 July/August Estimating Today articles to Society Business Office

June
10 Certification Committee Meeting via Conference Call
15 Award Winners to be announced (to Winners only)
16 Standards Committee Meeting via Conference Call
17 Education Committee Meeting via Conference Call
27 2020-2021 Board of Directors take Office

July
8 Certification Committee Meeting via Conference Call
15 Education Committee Meeting via Conference Call
20 Standards Committee Meeting via Conference Call
TBD Board of Directors Meeting via Video Conference
28 Last day for Chapter Reports to Governors for Annual Meeting reports
30 Committee and Technical Committee Chairs progress reports due to their respective Vice President and Society Business Office

August
5 Annual Board Reports due to Society Business Office for Annual Meeting Books
19 Board of Directors Meeting
19 Certification Committee Meeting via Conference Call
19 Education Committee Meeting via Conference Call
19 Standards Committee Meeting via Conference Call
19 Joint Technical Committee Meeting
19-22 2020 Annual Meeting + Estimators' Summit - San Antonio
ASPE CHAPTER MEETINGS

**ARIZONA**

Arizona #6  
Where: Aunt Chilada’s  
7330 North Dreamy Draw Drive  
Phoenix - 85020  
Date: 2nd Tuesday; Time: 4:00 PM  
Meeting Contact:  
Gene Plum  
gplum@mccarthy.com

Old Pueblo #53  
Where: Varies  
To Be Determined  
Tucson  
Date: Varies; Time: Varies  
Meeting Contact:  
Larry Lucero, CPE  
lucero@redlineinsulation.com

**ARKANSAS**

Arkansas #33  
Where: Varies  
To Be Determined  
Little Rock - 72201  
Date: Varies; Time: Varies  
Meeting Contact:  
Carri Morones, CPE  
aspe.carri@gmail.com

NW Arkansas #79  
Where: Varies  
To Be Determined  
Bentonville  
Date: TBD; Time: TBD  
Meeting Contact:  
Carri 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  
lalofaspe@outlook.com

Golden Gate #2  
Where: Join  
95 Minna Street  
San Francisco - 94105  
Date: 3rd Wednesday; Time: 6:00 PM  
Meeting Contact:  
Gustav Choto  
gustav@join.build

San Diego #4  
Where: Varies  
To Be Determined  
San Diego  
Date: 3rd Tuesday; Time: 5:30 PM  
Meeting Contact:  
Lisa Thibodeaux  
Lisa@constructionclasses.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  
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  
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  
Arlington - 22201  
Date: 3rd Thursday; Time: Varies  
Meeting Contact:  
Maurice Touzard, CPE  
mtozard@gmail.com
ASPE CHAPTER MEETINGS (CONTINUED)

FLORIDA
Tampa Bay #48
Where: Mitchell’s Fish Market
204 West Shore Plaza
Tampa - 33609
Date: 3rd Tuesday; Time: 5:30 PM
Meeting Contact: Jim Cummings
jim.cummings@edunn.com

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

Orlando #50
Where: Black & Veatch Offices
201 S Orange Avenue, Suite 500
Orlando - 32801
Date: 3rd Tuesday; Time: 6:00 PM
Meeting Contact: Danny Chadwick, CPE
dkchadwick@bellsouth.net

GEORGIA
Atlanta #14
Where: Sage Woodfire Tavern
4505 Ashford Dunwoody Road
Atlanta - 30346
Date: 2nd Monday; Time: 11:45 AM
Meeting Contact: Clinton Aldridge
clintonaldrige@gmail.com

ILLINOIS
Chicago #7
Where: To Be Determined
Downers Grove - 60515
Date: 3rd Thursday; Time: 6:00 PM
Meeting Contact: Bryan Mixer, CPE
bmixer_rvc@msn.com

INDIANA
Central Indiana #59
Where: To Be Determined
Indianapolis
Date: 3rd Thursday; Time: 5:30 PM
Meeting Contact: Chris Neal
cneal@summitconst.com

Old Fort #65
Where: Varies
Fort Wayne
Date: Last Thursday; Time: Varies
Meeting Contact: Thad Berkes
tberkes@designcollaborative.com

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: Varies
Des Moines
Date: 1st Thursday; Time: Varies
Meeting Contact: Ray Conway
aspe.ia.73@gmail.com

LOUISIANA
New Orleans #9
Where: To Be Determined
New Orleans
Date: TBD; Time: TBD
Meeting Contact: Jim Johnson
warnegojim@gmail.com

MAINE
Maine #37
Where: Varies
Portland
Date: 1st Wednesday; Time: Varies
Meeting Contact: John Brockington, CPE
jbrockington@woodwardcurran.com

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

MASSACHUSETTS
Boston #25
Where: Varies
Boston - 02116
Date: Varies; Time: Varies
Meeting Contact: Gregory Williamson, CPE
gwilliamson@bondbrothers.com

MICHIGAN
Detroit #17
Where: Auch Construction
65 University
Detroit - 48342
Date: 3rd Tuesday; Time: 5:15 PM
Meeting Contact: Gerald McClelland
gmcclelland@auchconstruction.com

Western Michigan #70
Where: Varies
Grand Rapids
Date: Varies; Time: Varies
Meeting Contact: Mike Alsgaard, CPE
maalsgaard@fishbeck.com
MINNESOTA
Viking #39
Where: To Be Determined
St. Paul
Date: Varies; Time: Varies
Meeting Contact:
Keith Parker, CPE
keithparker@circlebco.com

MISSOURI
St. Louis Metro #19
Where: AGC St. Louis Training School
6301 Knox Industrial Drive
St. Louis - 63139
Date: 3rd Friday; Time: 7:30 AM
Meeting Contact:
Keith Parker, CPE
keithparker@circlebco.com

NEBRASKA
Great Plains #35
Where: To Be Determined
Omaha
Date: Varies; Time: Varies
Meeting Contact:
Keith Parker, CPE
gmwfam5@gmail.com

NEW JERSEY
Garden State #26
Where: The Appian Way Restaurant
619 Langdon Street
Orange - 07050
Date 4th Tuesday; 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 Wednesday; Time: 5:30 PM
Meeting Contact:
Jimmy Sample, CPE
jimmy.sample@bixbyelectric.com

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

OREGON
Columbia-Pacific #54
Where: Varies
To Be Determined
Portland - 97201
Date: 3rd Tuesday; Time: Varies
Meeting Contact:
Leanne Legare
leanne-legare@hoffmancorp.com

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

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

NEVADA
Reno #12
Where: To Be Determined
Reno
Date: Varies; Time: Varies
Meeting Contact:
Stacie Flynn
staciewflynn@gmail.com

NEVADA (CONTINUED)
Las Vegas #72
Where: To Be Determined
Las Vegas
Date: 2nd Thursday; Time: Varies
Meeting Contact:
Chuck James, CPE
wcj@clarkcounty_nv.gov

NEW YORK (CONTINUED)
Western NY #77
Where: To Be Determined
Rochester
Date: TBD; Time: TBD
Meeting Contact:
Gregory Williamson, CPE
gwilliamson@bondbrothers.com

NEW YORK (CONTINUED)
Empire State #42
Where: Athos Restaurant
1814 Western Avenue
Albany - 12203
Date: Varies; Time: Varies
Meeting Contact:
James Diamantopoulos
dandaestimating@aol.com

NEVADA (CONTINUED)
Las Vegas #72
Where: To Be Determined
Las Vegas
Date: 2nd Thursday; Time: Varies
Meeting Contact:
Chuck James, CPE
wcj@clarkcounty_nv.gov

NEW YORK (CONTINUED)
Western NY #77
Where: To Be Determined
Rochester
Date: TBD; Time: TBD
Meeting Contact:
Gregory Williamson, CPE
gwilliamson@bondbrothers.com

NEW YORK (CONTINUED)
Empire State #42
Where: Athos Restaurant
1814 Western Avenue
Albany - 12203
Date: Varies; Time: Varies
Meeting Contact:
James Diamantopoulos
dandaestimating@aol.com

ASPE CHAPTER MEETINGS (CONTINUED)
ASPE CHAPTER MEETINGS (CONTINUED)

PENNSYLVANIA
Greater Lehigh Valley #41
Where: D’Huy Engineering Office
1 E. Broad Street
Bethlehem
Date: Varies; Time: Varies
Meeting Contact: William Watkins
www@dthuy.com

Three Rivers #44
Where: Webinar
To Be Determined
Pittsburgh
Date: TBD; Time: TBD
Meeting Contact: Siena Shilale
siena.shilale@aecom.com

Philadelphia #61
Where: Varies
To Be Determined
Philadelphia
Date: Varies; Time: Varies
Meeting Contact: Richard Baus
rickb@bencardino.com

Central Pennsylvania #76
Where: Loxley’s Resturant
500 Centerville Road
Lancaster - 17601
Date: 2nd Wed; Time: 6:00 PM
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: Amigos Restaurant
2000 Montana Avenue
El Paso - 79903
Date: 1st Thursday; Time: 6:00 PM
Meeting Contact: Rodolfo Barba, CPE
rodolfobarba1@gmail.com

Dallas/ Ft.Worth #43
Where: See Chapter Website
To Be Determined
Varies: N. Dallas/Mid-Cities/Grapevine
Date: Varies; Time: Varies
Meeting Contact: Rick Wyly, CPE
rick@buildcostcontrol.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: TK Farleigh
tfarleigh@baskervill.com

Please Note: Information is subject to change. Report changes in your Chapter’s information with an email to Tina@ASPEnational.org

WISCONSIN
Brew City #78
Where: Varies
To Be Determined
Milwaukee
Date: 2nd Tuesday; Time: Varies
Meeting Contact: Chris Rozof, CPE
crozof@berghammer.com

TENNESSEE
Middle Tennessee #34
Where: Adventure Science Center
800 Fort Negley Boulevard
Nashville - 37203
Date: 1st Friday; Time: 11:00 AM
Meeting Contact: Ricky Sanford
rsanford7159@gmail.com

Puget Sound #45
Where: Varies
To Be Determined
Seattle - 98109
Date: Varies; Time: Varies
Meeting Contact: Stacie Flynn
stacieflyphill@gmail.com
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.