Changing the Way We Work

Certification News: We Hear You!

Home Office Overhead — Which Formula Should You Use?
CALL FOR PAPERS

AACE International is now accepting abstracts for its 2021 Conference & Expo

June 20 - June 23, 2021
Westin Boston Waterfront
Boston, Massachusetts, USA

The Call for Papers is open until August 31, 2020

To submit an abstract of a proposed paper: CLICK HERE
How to Connect While Apart

People everywhere are using Zoom to work, take classes, do yoga -- and even get married. The company’s CEO and founder Eric Yuan reflects on how they developed the world’s most popular video chat software and envisions a digital future that will include things like virtual handshakes and real-time language translations to rival face-to-face gatherings. (This virtual conversation, hosted by TED technology curator Simone Ross, was recorded July 6, 2020.)

Source: www.ted.com. This talk was presented at an official TED conference and was featured by the editors on the home page.
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AACE International Online Store

For additional industry news and updates, you can always visit us at web.aacei.org.
The Top 10 Reasons To Join AACE International

Ready to advance your career and begin enjoying the advantages that our members enjoy? Whether you are an experienced cost engineer or a student, we have a membership ready for you.

1 Time
Gain access to a wealth of resources that will save you time and money! You’ll stay informed about the complexities of the cost and management profession - plus you’ll have access to discounts on educational programs, publications, and more!

2 Information
Locate thousands of technical papers and publications in the Virtual Library. AACE’s database is keyword searchable for quickly locating appropriate reference articles.

3 Career
Members can post resumes at no additional cost in our Career Center and keep your career on track through information sources such as our annual Salary and Demographic Survey of Project and Cost Professionals.

4 Learning
We offer numerous online learning courses on estimating and project management. The Approved Educational Provider program helps maintain high quality development courses and providers. AACE also holds many seminars throughout the year.

5 Resources
Starting with the TCM Framework and Recommended Practices that are available for free only to members to our bi-monthly publication Cost Engineering featuring articles for cost professionals around the world. Through the AACE International website, the Cost Engineering journal is a great current resource for members and as a member, you gain access to an archive of past issues.

6 Technical Development
Increase your knowledge and expertise by joining one of AACE International’s many technical subcommittees, subcommittees, and Special Interest Groups (SIG’s) at no additional cost to members. Discuss industry problems with your peers or help experts develop new and improved techniques and practices for the profession.

7 Networking
By attending a local section or our Annual Conference & Expo for interesting speakers, informational tours, social dinners and much more. The online Membership Directory is an excellent source for a list of contact information on thousands of members. Join one of our many technical subcommittees and participate in the AACE Forums - a great way to tap into the collective wisdom and experience of our world-wide membership.

8 Excellence
Our certification programs are independently accredited by the Council of Engineering & Scientific Specialty Boards. AACE certifications are a recognized credible standard in the cost management field. A recent study shows that individuals with an AACE Certification earn 17.4% more than their counterpart without a certificate.

9 Discounts
On products and services ranging from AACE International Conference & Expo registration fees, archived webinars and presentations, certification examination registrations, and more!

10 You!
We are your professional partner bringing you information and support you can trust. Join and become part of a unique network of individuals who are dedicated to improving the cost and management profession.

JOIN TODAY! web.aacei.org
As your President for the 2020-2021 program year, I want to express my appreciation to the members of AACE for allowing me the opportunity to serve the Association in this role. My primary goal, as I am sure was for every president before me, is to leave the Association in a better position than when I assumed the role. I will work hard to make this goal a reality.

I appreciate the opportunity to work with the wonderful staff at our Headquarters. I have been able to get to know a number of them over the years and understand how hard they work to serve our members and support the Association. I also have the privilege to work with a great group of volunteers that are dedicated to our profession and devote their personal time to this Association and its members. I am truly looking forward to this year.

2020 CONFERENCE & EXPO:
With the COVID-19 pandemic and the impacts it has had on all our lives so far this year, AACE made the tough but right decision to not hold our planned Conference & Expo in Chicago in June. Instead, we held a week-long virtual conference that allowed members from all parts of the work to participate (recognizing there were some time zone challenges for some). In my mind this event was an absolute success. I want to thank everyone at Headquarters, particularly Jennie Amos, Christian Heller, and Ryan Schwertfeger, for being able to transform our Conference & Expo into a virtual experience while maintaining some of the best elements of the in person event. I also want to thank the entire Technical Associate Board, in particular John Orr, for organizing all the sessions, including the paper and presentation reviews, helping presenters, and coordinating the sessions. We had 478 people register for the event, including a number of non-members, which far exceeded our expectations given the late changes in the event. Attendees were able to enjoy live technical sessions, seeing the presenters, the presentation slides, and submit questions live. They are also able to enjoy the recordings of all the sessions that would have been held at the in person event. So, in many ways, attendees of the virtual event enjoyed benefits they would not have enjoyed at the live event.

Although we hope to be able to hold an in person C&E this next year in Boston and beyond, we have learned a number of lessons and plan to incorporate a virtual element in all future events.

ASSOCIATION EXECUTIVE DIRECTOR:
As many of you may know, Charity Quick, our Executive Director for the past six years, left AACE in early July for a new role with another association. The Board of Directors, the Headquarters staff, and so many of the volunteers enjoyed working with Charity and consider her a good friend. Her contributions to the Association have been significant and helped position us for growth moving forward. We wish Charity the best in her new role.

I am pleased to announce that the Association has hired Deb Lally to be the next Executive Director of the Association. Deb is coming from an association in Massachusetts where she currently lives. Deb has significant experience with associations, having worked for associations the past 15 years and supported associations in the publications industry before that. Deb will be a strong and energetic addition.
to our Association and help us move into the future.

Deb will continue to be based in the Boston area and work with our staff, Board, and volunteers in a combination of virtual and in person interaction. Our experience of the past few months has demonstrated that we are capable of working in a virtual work and still be efficient and serve our members. Hiring Deb is our commitment to transition to a more virtual platform moving forward. We expect this move will provide more advantages for our staff, provide some efficiency improvements, and provide more flexibility as the Association evolves over time.

I look forward to working with Deb and helping her navigate the learning curve of working with cost engineering geeks.

2020-2021 PROGRAM YEAR:
This past fall and winter I gave a talk a few times about the disruption the construction industry was likely to experience in the coming years and the impact it was likely to have on the future of Project Controls. Little did I know that the disruption was going to start just months later with the COVID-19 pandemic. Beyond the immediate impact it is having on projects, I think most of us can see the long term effects it is likely to have on how we work and collaborate.

This past October, the Board of Directors, Associate Board Chairs, and HQ Management Team held a strategic workshop to develop our strategic goals for the coming years. Our number one undertaking was to take a hard look at the Association’s organization, governance, and guidelines to improve engagement with members, operate more efficiently, and improve flexibility to meet the evolving world around us. A task force was created and is continuing to define the recommended changes for approval by the Board of Directors. Ultimately an update to the Constitution and Bylaws will be presented to members for their input and vote. The goal is to have this vote no later than February with the general elections. This effort is a challenging one, but will hopefully help future leaders of the Association better serve members and the overall industry. I promise to keep members updated as this effort progresses.

Thank you again for the opportunity to serve you.

If you would like to contact our current president with questions or comments about The President’s Message please address your e-mail to president@aacei.org. To engage in other discussions, check out AACE International’s online Communities at communities.aacei.org.

Lally Named AACE International Executive Director/CEO

After an extensive and rigorous search led by President-Elect James E. Krebs, PE CCP FAACE and other members of the Board of Directors, AACE International is proud to announce that Debra Lally, CAE, has been named AACE International’s Executive Director/CEO to begin on July 28, 2020. Over 200 applications were received and reviewed, with a large number of interviews conducted. Ms. Lally was considered by everyone on the search committee to be the best person for the role.

The Board made this selection based on Ms. Lally’s extensive experience and professional achievements in association management. She holds a bachelor of arts degree from Syracuse University and has held executive leadership roles with the Massachusetts League of Community Health Centers, AHRA: The Association for Medical Imaging Management, and McKenna Management. She has an additional depth of experience in the publishing industry.

“Our conversations with Deb, convinced us she will do an excellent job of working with our wonderful headquarters staff, coordinating with the Board of Directors and other volunteers, and engaging with our members around the world,” President Christopher P. Caddell, PE CCP DRMP stated. “I am really excited about this next step for AACE and look forward to Deb helping us move forward in this changing world,” Caddell added.

Upon accepting the position, Ms. Lally noted, “I look forward to collaborating with AACE staff and leadership and building upon the organization’s respected legacy. AACE and its members are well positioned for growth and success and I’m excited to be a part of the organization’s mission, community, and future development.”

Ms. Lally succeeds Charity Quick, CAE, who held the post for six years. She will be the eleventh executive director in AACE’s 64-year history. While the Headquarters office will still be in Morgantown, WV, Ms. Lally will be located in the Boston, MA area.
Cost estimates are prepared to support decisions. At an early stage of project development, the decision may be to decide which potential alternative (or alternatives) should be selected to advance to the next stage of development; and eventually the decision may be to authorize full funding of a project based on the economic analysis and business case that has been prepared based on a project estimate.

Most, but not all projects, are approved based on economic evaluations. Organizations attempt to maximize the value of their capital investments, seeking to fund from their limited capital budgets those projects that provide the highest rates of return. The cost estimate is critical to the economic evaluations determining rate of return and other financial metrics upon which a decision will be made.

A decision can be made using a reasoned or intuitive process, and most often a combination of the two. Reasoned decisions are those established on objective assessments of all of the available facts and information. Intuitive decisions, on the other hand, are often based on past experience, and the personal perceptions and values of the decision-maker.

In making capital investment decisions, organizations want to make reasoned decisions that are founded on comprehensive, clearly understood data and information. The estimate is an important component of that information, but if the estimate is presented as just a page of numbers then it provides no context to support its evaluation, and the subsequent decision to be made. A page of numbers or a bottom-line estimate value by itself cannot support reasoned decision-making.

The Basis of Estimate (BOE) is the document that provides the contextual framework for using the estimate to support reasoned decision-making. AACE International Recommended Practice 10S-90 defines a basis document as, “written documentation that describes how an estimate, schedule, or other plan component was developed and defines the information used in support of development. A basis document commonly includes, but is not limited to, a description of the scope included, methodologies used, references and defining deliverables used, assumptions and exclusions made, clarifications, adjustments, and some indication of the level of uncertainty.” [1]

AACE International Recommended Practice 34R-05 states that when prepared correctly “any person with capital project experience can use the BOE to understand and assess the estimate, independent of any other supporting documentation. A well-written BOE achieves those goals by clearly and concisely stating the purpose of the estimate, (i.e., cost study, project options, funding, etc.), the project scope, pricing basis, allowances, assumptions, exclusions, cost risks and opportunities, and any deviations from standard practices” [2].

Todd Pickett, in Preparing a Basis of Estimate, identifies that the “basis of estimate is the instrument used to convey to the owner and other members of the project team that the estimator understand the problem, the proposed solution, and how much the proposed solution is going to cost.” [3]

It is important to understand that an estimate is a prediction of the probable costs for a given scope of work to be completed in the future. An estimate by nature is uncertain, and although some of the information supporting the estimate is objective and factually based, much of the estimate is based on uncertainties that includes potential variations in scope quantification, pricing, required resources, execution strategies, etc. Every estimate is based on an extensive level of assumptions upon which the estimator must make an objective assessment to prepare a cost estimate that is comprehensive, reasonable, and sufficiently accurate to support the purpose and decision for which it is being prepared. Whether it meets these goals cannot be determined from the numerical presentation of the estimate.

The Basis of Estimate provides context to the methods, practices, adequacy of the information and assumptions utilized in the development of the estimate. It provides thorough and reliable information to support effective estimate review and validation; and once approved can then be used to support sound business decisions for capital investment decisions. An important part of estimate validation and subsequent support for the investment decision is to understand the explicit or inherent cost strategy (cost effectiveness versus predictability) that may impact the eventual achievability of the estimate. [4]

The BOE is equally important for effective project controls, from establishing initial work packaging and contract management to supporting performance assessment and change management. It supports effective project schedule development and control. It provides the needed framework to understand the combination of identified scope and costs included in the estimate. AACE International’s Total Cost Management Framework identifies the Basis of Estimate as a required component of every cost estimate. [5]

To summarize, the main purpose of cost estimates is to support decisions to maximize the value of an organization’s capital investments. Without a Basis of Estimate, the decision maker must rely on an intuitive approach to decision-making. A well-written Basis of Estimate allows decision-makers to make reasoned and informed decisions, reducing the level of intuitiveness, to maximize cost investment performance for their organizations. [6]

REFERENCES

We Hear You!

BY VALERIE VENTERS, CCP FAACE

The Certification Program has always been interested in feedback from candidates and has used surveys as the primary mode of receiving this feedback. As we prepared for transition to computer-based testing from paper-based in 2013, the Certification Board refined the survey to gather more data and give candidates the opportunity to express their thoughts regarding the certification exam, study materials, and overall experience in sitting for an AACE certification exam. The survey has driven a continuous quality improvement mindset to guide the Certification Program in offering candidates a better overall experience from making the application to sit for an exam, guidance on study materials, exam coordination with the testing centers, and through the release of Pass/Fail test results.

Over the years, the survey revealed a potential misalignment between study materials and the exam competencies being tested. Common comments were, “the exam questions do not match study materials” or “the exam questions did not cover the study material I worked so hard to understand,” to name a few. The Certification program regularly noted these comments and shared them with the Education Board and the Technical Board of AACE International. In monitoring candidate feedback, we collectively asked ourselves, “Are the three AACE International Associate Boards really misaligned?” It was important for us to find the answer to that question and better understand what exam candidates were telling us.

The AACE International Associate Boards include the Technical Board, Education Board, and the Certification Board. Each Board has a major part to play in the overall learning and examination process offered by AACE International. The Technical Board oversees the development of the AACE technical documents and best practices through the Recommended Practices and Total Cost Management Framework; the Education Board uses the technical documents and oversees the development of study materials, such as, Skills & Knowledge for Cost Engineering, Certification Study Guides, and the online educational modules; the Certification Board manages and oversees the testing of the AACE technical and educational materials based on required competencies.

To better understand the survey comments, the three Associate Boards have come together to form a team with two representatives from each board, referred to as the T/E/C (Technical Board, Education Board, Certification Board) Alignment Team. The team’s primary purpose is to ensure all AACE Body of Knowledge and the Certification Exam question banks are aligned against the required competencies. The team is taking each required competency and mapping it to the Certification exam question bank, Skills & Knowledge for Cost Engineering (S&K 6), Certification Study Guides (CSG), Recommended Practices (RPs), and the Total Cost Management Framework (TCMF). The mapping process ensures each required competency is addressed in the AACE Body of Knowledge or reveals a gap between the study material and the certification exam questions. If a gap is identified, the team will work in alignment to close the gap with the appropriate new or reworked data. In order to close a gap, it may require the development of a new RP or adding a new chapter in the S&K6 and CSG or adding/rewriting certification exam questions – whatever the required approach to ensure total alignment with no gaps between the AACE Body of Knowledge and the Certification exams will be done.

This process will not be a “one and done” effort. As the AACE Body of Knowledge is a “living set of documents”, so will the required competencies be ever green. Competencies will be added as new skills and knowledge are identified from industry and the Subject Matter Experts (SMEs). As new competencies are added, new certification exam questions will be written, new RPs will be developed, new chapters would be added to the S&K6/CSG, and new sections added to TCMF – all aligned.

The T/E/C Alignment Team is happy to report that the Certified Cost Professional (CCP) competency mapping has been completed with minimal gaps identified and resolved. We are now mapping the Planning & Scheduling Professional (PSP) competencies, followed by the Certified Estimating Professional (CEP) competencies. So, while it may have seemed like we were not hearing you, we believed it was time you knew we have not only heard you, we have listened to and acted upon your valuable feedback! The T/E/C Alignment Team will continue working to identify and map all the required competencies to the various AACE Body of Knowledge documents – with the ultimate goal of ensuring total alignment between the competencies being tested through the certification exams and the technical and educational resources used for learning.

Keep your survey comments coming – it is important for us to hear from you. ☎
Spotlight on

Victoria Anderton-Gull

By Cindy Whitmll

Victoria Anderton-Gull was born and raised in Bolton, England. She spent most of her childhood working with horses at a local farm, participating in competitions, championships, and events. She was also a keen sportswoman and around this time developed her passions for golf, cycling, and skiing, which she still carries on to this day. In her teenage years and early twenties, Victoria developed a love for traveling and experiencing other cultures. She spent most summers traveling and working throughout Europe and North America.

This love for traveling drove Victoria to consider careers that would allow her to work across continents and jurisdictions and led her initially to begin a foundation degree course studying quantity surveying and commercial management at the University of Bolton. On this course, she established a keen interest in the construction industry and related project control functions, which spurred her to continue her studies for a further two years to achieve a bachelor of science degree in quantity surveying at the University of Salford.

Upon graduation, Victoria spent three years working as a quantity surveyor in the United Kingdom for both Mott MacDonald and Costain in the MEP, nuclear, and infrastructure sectors. She very much enjoyed the working environment and daily challenges such a role offered and used this time to develop her skills and build up a portfolio of many varied projects.

Her love of travel and other cultures, and her drive to diversify her abilities and experience base, led her to pursue an opportunity to live and work in Dubai, United Arab Emirates for Laing O’Rourke. She spent most of this time working closely as the senior quantity surveyor with the commercial director on two large data center projects, thriving as an expat in the challenging, fast-paced, and rapidly growing foreign market. The project and cost control tools that Victoria had developed in her earlier roles were key assets in meeting project deadlines and strictly controlling project costs as her responsibilities in the demanding Dubai market increased. She also enjoyed the expat lifestyle and the opportunity to continue traveling. It was during this time that she met her future husband, who was already working as an expat himself in the United States.

After two fulfilling years in Dubai, Victoria took the opportunity to move to the United States with her husband to expand her international experience further and develop her project portfolio. While she was back in the UK preparing for this move to the US, she was also able to take on a short assignment for Kier to close out M&E subcontractor packages on the high-profile Broadmoor Hospital project. When she moved to the United States in the fall of 2018, she accepted a position as a cost manager for Currie & Brown, working on pharmaceutical and education projects in New York and New Jersey, with a particular focus on project controls and change management.

Because the role of quantity surveyor in the US construction market is more of a project/cost manager role, the transition to working in the United States was initially more challenging for Victoria than the transition to working in Dubai. However, in her position at Currie & Brown, she has been able to grow and develop her skills and experience in the US market. Her work at Currie & Brown has allowed her to use and develop the skills she gained in her earlier roles. Her devotion to client care and her focus on project cost control, together with her drive and determination to strive to exceed the expectations of her clients, are valued by both her managers at Currie & Brown and her clients. She has found living and working in the United States to be a great match to her preferred lifestyle and has enjoyed the opportunity to travel the different states. She has travelled the West Coast, skied in Colorado, Vermont and Canada, and golfed whenever possible. She currently lives in Yardley, PA, with her husband James Anderton-Gull and year-old Labrador Loki.

In the various roles throughout her career, Victoria has been required to use, test, and
demonstrate project controls. She has developed the skillset to help bring projects in on time and budget. Victoria has also benefited very much from being a member of AACE and having access to all its resources. This helps to ensure that she adopts best practice on her construction projects. She is also currently working on finalizing her qualification as a Certified Cost Professional (CCP) with AACE.

Victoria has always been keen to grow and develop as a professional woman in construction. She has been fortunate that her managers at Currie & Brown actively encourage such personal and professional development. She is currently working with two mentors who are assisting her in gaining her AACE certification and supporting her as she works towards achieving her MRICS certification with the Royal Institution of Chartered Surveyors.

Victoria has always been a passionate advocate for women in the construction industry. Having worked in various sectors and across multiple jurisdictions, she has experienced first-hand the challenges of being a woman in the industry. However, this has never deterred her from her goals, earning her a place as a finalist for a Women in Construction award. She has always encouraged, and continues to encourage, other women to work in the industry.

As you can see from the sheer breadth of travel and work, Victoria has achieved a lot in her relatively short time in the industry. She is driven by a desire to take on new challenges and experiences. In Victoria’s own words, “the path to fulfillment and professional development lies in reaching out and taking opportunities with both hands, no matter how intimidating or difficult they may seem at the time.” She believes that her greatest successes have come from overcoming the most demanding and testing situations. Despite, or because of, the challenges, she believes that if you enjoy a diverse, fast-paced and varied working day, a career in project controls/construction is an excellent and rewarding profession for a woman.
John Coker, is a planning and scheduling professional with eleven years of experience in the construction industry. He has held positions in project management and project controls, although his primary role has always been centered in planning and scheduling. During his relatively short time in the industry, John has worked closely with hundreds of project team members across the U.S. to successfully develop and manage a large variety of projects, including casino renovations, levees and dams, bridges, US Air Force hangars, Army operations facilities, Naval inspection stations, and various other state and federal infrastructure projects.

John was born and raised in Colorado, where he was the son of two passionate schoolteachers, and an older brother to an amazing sister. His parents taught him the importance of education, but also instilled in him the value of human connection and a strong work ethic. Growing up in Colorado, John spent most of his time outdoors where he enjoyed camping, hunting, and fishing. It was an easy decision for him to attend Colorado State University, where he earned a Bachelor of Science degree in Construction Management and minor in Business Administration. At the time, the importance of project controls and scheduling was understated in school, but he saw potential in pursuing a career in it, noting that, "at the time, it was somewhat of an overlooked role in projects, but I saw it as an opportunity to have a direct impact on project’s success or failure, and that is not something everyone gets a chance to do."

Upon graduation, John started his career as a project scheduler for a small general contractor specializing in military installation construction projects across the United States, serving all branches of the armed forces. Within his first year, John was asked to step into the role of corporate scheduler for the company, were he attributes his success to the sum of small efforts, repeated day in and day out. He strove to be a reliable team member who took the time to understand each project’s needs, develop meaningful relationships, and consistently follow through on project and company deliverables. As corporate scheduler, John developed and scheduled 40+ projects per year, provided training for project teams, filled project management roles as needed, and assisted in project controls reporting.

John is currently employed at Clark Construction in Kansas City, Missouri where he and his wife recently celebrated the birth of their daughter. He is the lead scheduler for the new terminal at Kansas City International Airport. The project, valued at over $1 billion, is the largest infrastructure project in Kansas City’s history. The new, one million square foot terminal will consist of 39 gates, a new central utility plant, a parking garage serving over 6,300 parking spaces, along with landside and airside paving improvements. Since moving to Clark Construction, John has been able to vastly expand his knowledge and influence of construction planning and execution, thanks to Clark’s Director of Enterprise Scheduling, Regis Fox, and Clark Construction Executive, Chris Smith. They have instilled in him the mantra of becoming a trusted advisor to the project; while pushing for continuous improvement in effective communication, reengineering of standard workflow processes, and leveraging technology and people to make something good, great.

John is a new member to AACE and looks forward to contributing to the growth and outreach of AACE and all the benefits it has to offer. He has already enjoyed reading existing white papers and recommended practices that AACE has available and sees potential for growing the use of their online forums to receive peer-to-peer feedback, guidance, and innovation.

His advice to young professionals in project controls and scheduling is to always seek to provide help and guidance in whatever you do. Look for ways to help others every day, and if it is something you have not done before, even better! “The construction industry is a people business. It’s important to remember to treat people with kindness and respect, do what you say you are going to do, and always push to make yourself and your project better. Complacency is the greatest enemy of success.”
The AACE International community was saddened to learn of the June 26 death of John C. Livengood, who had served as AACE President for the 2016-2017 term. John died at Washington, DC.

John had been a member of AACE since 2001. He became a Certified Cost Professional (CCP) in 2014, a Certified Forensic Claims Consultant (CFCC) in 2007, and a Planning & Scheduling Professional (PSP) in 2005. He has also been an active member of AACE’s Claims & Dispute Resolution Technical Subcommittee. John has been a frequent author/presenter at AACE’s Conference & Expos and at many other industry events. He has been an author or contributor to a number of AACE’s Recommended Practices (RPs). John was elected and served AACE’s Board of Directors as Director-Region 2 (2010-2012), Vice President-Finance (2012-2014), President-Elect (2015-2016), AACE International President (2016-2017), and Past President (2017-2018). He was a Senior Managing Director at Ankura. John was previously recognized by AACE as the Outstanding Technical Subcommittee Chair (2008; 2010) and as a Fellow (2015). John was being honored this year at the virtual Conference & Expo with the O. T. Zimmerman Founder’s Award.

His family released the following obituary:

With deep sorrow, family, friends and colleagues say goodbye to John C. Livengood, who died of the Powassan virus on June 26, 2020. He was 68. John grew up in Westfield, New Jersey, and divided his time between Washington, DC and a country house next to the Appalachian Trail in New Jersey. A proud alumnus of Pingry School, he received an architecture degree from Syracuse University and a law degree from Catholic University. John was the beloved husband of Caren Yglesias for 42 years, and proud father of Magenta, Hugh (married to Arielle), and Ian (married to Katie) and their sons, Henry and James.

John served as Senior Managing Director at Ankura and was a leader in the field of forensic construction schedule delay analysis. His service to the profession included contributing to the work of AACE International for the past two decades, as well as the ABA Forum on Construction Law, UK Society of Construction Law, and the International Bar Association.

Among his favorite activities, John coached and managed many youth soccer teams, and was particularly proud of the girls select soccer league he started. John also loved to travel and saw most of the world, although he never made it to a safari in Kenya, a trip planned for the fall.

In addition to his wife and children, John is survived by his sister, Becky, and his brother, Ford, their spouses Walter and Geri, and their children Charlotte, Walt, Rebecca and Jim, and their spouses Rich, Liz, Nate and Sara. He was the cherished son of the late Reverend Hugh and Winifred Livengood.

John’s life will be celebrated on June 26, 2021 at Culver Lake, a place near to his heart.

Above: Caren Yglesias Livengood and John Livengood on a tour of the Great Wall of China. At right: The Livengood family in 2016 at Utah. Shown from left to right: son Ian and his wife Katie; daughter Magenta and her dog Mia; Caren Yglesias Livengood and John Livengood; the family dog Stella; and son Hugh and his wife Arielle.
AACE International President Chris Caddell, PE CCP DRMP, (President for 2020-2021), released the following comment on behalf of AACE International: “Right before the start of this year’s Conference & Expo, we were notified that one of AACE’s great members, John Livengood, had passed away due to complications from the Powassan virus. John’s contributions to the Association, including serving as President of the Association, have been influential to not only AACE members but the industry as a whole. He has served as a good friend and mentor for many over the years, providing advice and thoughtful reflection when most needed, combined with a good sense of humor. John had been selected to be awarded this year’s O.T. Zimmerman Founder’s Award, prior to notice of his passing, in recognition of his contributions.

As a tribute to John, we offer a summary of his achievements with the Association and have asked members that knew him best to offer their memories and thoughts. He will be greatly missed.”

Steve Pitaniello, Ankura Senior Managing Director, (Ankura was the entity that John Livengood was employed with at the time of his death). Mr. Pitaniello, on behalf of the Ankura team, responded: “John was a true professional who humbly shared his knowledge and insight, his kindness and his passion, his wisdom and his wit, with each of us, every day that we – his grateful Ankura teammates – worked alongside him. In addition to serving the many clients who sought his expertise, John also took up the role of Executive Director of Ankura’s Construction Forum. So, whether it was within an expert assignment or as a part of his role as an Ankura thought leader, John was always sharing with his colleagues what he knew about Forensic Schedule Analysis, with AACE and its technical libraries always in the foreground. And in between assignments, we were always happy to hear John’s stories about his wife, children, and grandchildren, along with his many travels, his love of science fiction, among so many other parts of his rich and happy life. John was a mentor and a team builder, a brilliant but unassuming man who could deftly guide a team while still encouraging new thinking and ideas. His presence will always be felt by his friends and colleagues at Ankura, and we will miss him.”

Past President Martin Darley, CCP (President 2014-2015) was Past President the year that John Livengood was serving as President-Elect. Mr. Darley responded: “It is a privilege to be asked to comment, but it so hard to do. Through the Association, I shared some of the most challenging, rewarding, and inspiring years of my career with John at my side. He was the voice of calm, the go-to guy when a paragraph in the Constitution and Bylaws needed rewording, the peacemaker when tempers flared. His body of work is prolific, and his dedication to the promotion of cost engineering is beyond reproach. His sudden passing has stunned Cost Engineering communities around the world. I have so many fond memories of him, but most of all I will celebrate John for the legacy of his teachings. I hold his family in my thoughts and prayers.”

Past President Charles E. Bolyard, CFCC PSP FAACE, (President 2017-2018) served as President-Elect in 2016-2017 when John Livengood was serving as President. Mr. Livengood served as Past President the year Mr. Bolyard served as President. Mr. Bolyard responded: “I have known John Livengood for more than 30 years. John was professional colleague, friendly competitor, and most of all a friend.”

Past President Douglas W. Leo, CCP CEP (President 2019-2020) responded: “I am truly saddened hearing of the passing of my friend, John Livengood. I first met John when he was the AACE Region 2 Director. His interaction with my section was always professional, extremely helpful, and friendly. He was obviously there to assist. In the subsequent years, I viewed John as source for timely and expert information. I saw John as a mentor and a friend. My thoughts go out to his family. John will be missed.”

Past President Martin Darley, CCP (President 2014-2015) was Past President the year that John Livengood was serving as President-Elect. In this 2014 photo, Darley is presenting Livengood a certificate as the outgoing Vice President Finance.

Past President John Ciccarelli, PE CEP PSP (President 2013-2014) responded: “It is with a heavy heart that I reported to the Construction Dispute Resolution Subcommittee the unfortunate passing of our fellow CDR Subcommittee and AACE colleague John Livengood. While John and I may have been competitors in the dispute industry, for years we have been close AACE colleagues and friends; starting initially with efforts in
the AACE CDR Subcommittee, then expanding to our years of collaboration in Region 2, and then on the Board of Directors. John’s years of contributing leadership and technical content to the CDR Subcommittee are second to none. John’s contributions did not stop with the CDR Subcommittee. I am proud to say that one of my best decisions was to convince John to run for Region 2 Director, and then follow the same path to Vice President of Finance for AACE, and eventually President of the association. As part of the Awards Committee this year, I am happy that we awarded the O.T. Zimmerman Founder’s Award to John for his continuous achievements and contributions to the association. John’s professionalism, mentorship, technical expertise and knowledge, level-headed advice, and friendship will be missed. His unfortunate departure leaves a tremendous hole in our profession and I call on the rest of the CDR Subcommittee to carry on John’s legacy of excellence.”

Vice President of the AACE Membership Board – International, Jaimin R. Mehta, CCP PSP, responded: “Although I knew John only for a short time, he left a lasting impression on me. As one of the Regional Directors of AACE, I had the pleasure of working with John when he was the President of AACE in 2016-17. What always struck me was his kind and helpful nature, and his humility. I always found his lectures to be captivating and stimulating. John was professional yet personal. I still recall an evening I had the good fortune to spend with him and Caren in New Orleans; the conversations ranged from history and architecture to food and sports. Till then I used to think that John was only all about his work. I shall fondly cherish that memory and many more. He will be truly missed, and I pray to God to give his family strength during this difficult time.”

Past Vice President of the AACE Technical Board, Larry R. Dysert, CCP CEP DRMP FAACE Hon. Life, responded: “John’s expertise as an expert in construction claims and dispute resolution is undisputed. As a member and Past President of AACE International, John always brought a thoughtful, balanced, and fair approach to all issues, and has contributed substantially to the profession of cost engineering and total cost management. As a person, John was someone that you could lean on, whether you were a personal friend or not. John would listen to your question or issue and provide guidance without reservation. John will be missed by family, friends, acquaintances, and the profession.”

Past Vice President Finance, Chris Carson, (2016-2018) CEP DRMP PSP FAACE, responded: “I met John Livengood probably 20 years ago and was instantly attracted by his open, interested, and curious nature, welcoming me to my first conference engagement. Over the years since, I’ve been struck by John’s incredible knowledge, his practicality, and his common sense, as well as his thirst for improving industry best practices, along with his philosophical and literate bent (he would probably mark up this testimonial and send it back to me for improvements!). As we worked together in AACE and other organizations, I came to really appreciate his ability to look at both sides of a discussion, his quick sense of humor, and his genuine caring for people. John was one of the primary reasons I came to my current employer, Arcadis, and I’ve had many deep and satisfying discussions about best practices, an opportunity to co-author papers and practices with him, and a lot of fun along the way. John is an icon among cost engineering experts and will be sorely missed, not only by me, but by the global cost engineering industry.”

John lived in Washington, DC and worked with the National Capital Section of AACE International. The Section in 2011 was awarded an Outstanding Section plaque. Shown above from left are past AACE President Ozzie Belcher (President 2003-2004); Sagar B. Khadka, CCP DRMP PSP; Niyi O. Ladipo, CCP EVP; Dan Melamed, CCP EVP; Cristina Baltazar, PSP; and John Livengood, Esq. CCP CFCC PSP FAACE.
Home Office Overhead — Which Formula Should You Use?  

BY MARK F. NAGATA, PSP

ABSTRACT
Unabsorbed home office overhead is a well-known, but not well-understood delay damage. Like extended field office overhead, it is only recoverable by a contractor that has experienced an excusable, compensable delay. Typically, contractors allocate their home office overhead costs across their projects using some formula, often based in some way on the size of the project. But when a project is delayed, the contractor may not always be able to generate adequate compensation from each project to cover its home office overhead costs. Some contracts specify how a contractor’s extended home office overhead costs should be calculated, but most do not. While there are various home office overhead formulas (Eichley, Canadian, Manshul, Allegheny, etc.) used to calculate a contractor’s unabsorbed and extended home office overhead costs, each is slightly different from the other and can produce very different results. This article will describe the difference between unabsorbed and extended home office overhead costs, detail how the various home office overhead formulas calculate a contractor’s home office overhead costs, and identify how each of the methods calculate a contractor’s unabsorbed or extended home office overhead costs differently from one another using an owner-directed suspension example and an extended project duration example. This article was first presented at the 2019 AACE International Conference & Expo as CDR.3167.

INTRODUCTION
Home office overhead costs are the costs the contractor incurs to support all its projects from a central or “home” office. They are distinct from field or site office overhead costs in that they support all a contractor’s projects, not just one project. More importantly, the contractor tracks these costs not as project costs, but home office overhead costs. An example might be a payroll clerk. The clerk is usually assigned to the home office and is responsible for processing pay checks for all company employees, not just the employees on one project. The clerk’s costs are typically captured in a home office account and not charged to each project separately.
Typically, contractors allocate their home office overhead costs across their projects using some formula, often based in some way on the size of the project. Contractors then reimburse themselves for the home office costs they incur by diverting some portion of the payments made by the owner on the project to the home office. In other words, home office costs are paid out of the revenues they earn from their projects.

But when a project is delayed, the contractor may not always be able to generate adequate compensation from each project to cover its home office overhead costs.

The intent of this article is to explain that a contractor’s home office overhead expenses are a real cost that a contractor incurs during an excusable, compensable delay, explain the difference between under-absorption and extended home office overhead costs, identifying common methods that are used to calculate a contractor’s unabsorbed or extended home office overhead costs, and identifying how each of the methods calculate a contractor’s unabsorbed or extended home office overhead costs differently using an owner-directed suspension project example and an extended project duration example.

**WHAT IS HOME OFFICE OVERHEAD?**

While the term home office overhead takes on different meanings depending on how a contractor’s organization is structured, a contractor’s home office overhead costs are generally understood to consist of the operating costs of the contractor’s principal or home office.

These home office overhead costs are costs that a contractor incurs to support all the contractor’s projects but are not directly chargeable to any particular project. Home office costs are often put in the category of “indirect” costs in that they are real costs, but not costs incurred to complete the work associated with a particular project.

Because they are not costs specifically identified with a particular project, contractors cannot charge these costs to a particular project. But they are still real costs and they still need to be covered someway from the contractor’s revenues. Typically, contractors cover their home office overhead costs by apportioning or distributing them among all their projects by using some kind of distribution formula.

Note that a contractor’s home office overhead costs would specifically exclude the labor, equipment, and material costs to construct and manage a specific project. For example, the cost of a job site trailer for a specific project is not a home office overhead costs and should be charged to that specific project for which the job site trailer is used.

Home office overhead costs include, but are not limited to:

- Home office rental or home office ownership costs
- Insurance costs that cannot be assigned to a specific project
- Home office utilities and telephone
- Home office equipment and maintenance
- Salaries of home office staff (company officers, estimators, payroll clerks, receptionists, and others not assigned to a specific project)

Ultimately, the contractor must pay for these costs by relying upon the funds earned from the work it performs. As such, a contractor’s bid for a project should include an amount to cover the project’s portion of its home office costs.

Note that the primary condition for the contractor to recover its unabsorbed home office overhead cost is that the project must have experienced an excusable, compensable delay such as added work, design changes, an owner-directed suspension, etc. It is also important to recognize that the compensation for different types of change orders and impacts vary.

For example, when the parties agree to a change order, the agreed upon change order amount typically includes a markup for both overhead and profit regardless of whether the change order work actually delayed the project. Owners often use the defense that the contractor is not entitled to recover its unabsorbed home office overhead costs because its home office overhead costs are already included in the agreed upon change order amount.

However, when a project is delayed by an owner-directed suspension, it’s often difficult for the parties to agree on an additional compensation amount because there are not additional direct costs to be marked up.

When determining the contractor’s entitlement to recover its home office overhead costs, both the construction agreement and the executed change orders need to be evaluated. It should be recognized that applicable contractual, statutory, or legal requirements and the contractor’s ability to find replacement work will ultimately determine the contractor’s ability to recover its unabsorbed home office overhead costs.

**EXTENDED VS. UNABSORBED HOME OFFICE OVERHEAD**

Despite there being a distinction between the terms “extended” and “unabsorbed” when describing a contractor’s home office overhead costs, these two terms are often used interchangeably. While a detailed discussion regarding the merits of each of these terms is beyond the scope of this article, the following discussion will explain why the term “unabsorbed” is the more accurate of the two when describing the impact a delay has on home office overhead costs.

For example, consider the cost of the contractor’s chief financial officer, who works out of the home office. The cost of the CFO is not “extended” or increased if one of the contractor’s projects is delayed. The CFO’s salary does not change and he or she is not paid for a longer period. For instance, a project superintendent, assigned to a specific project, would be paid when a project is delayed. During a period of delay on one of the contractor’s projects, the contractor might be receiving less revenue to absorb the CFO’s salary. Thus, the real impact experienced by the contractor is not truly one of extension but more one of “under-absorption.”

The classic “under-absorption” example is a project that experiences a complete owner-directed suspension. As an example, assume a contractor is working on three projects, each earning the same revenue as depicted in Table 1.

<table>
<thead>
<tr>
<th>Project</th>
<th>Month 1 Revenue</th>
<th>Month 2 Revenue</th>
<th>Month 3 Revenue</th>
<th>Month 4 Revenue</th>
<th>Month 5 Revenue</th>
<th>Month 6 Revenue</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>Project 2</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Project 3</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$1,200,000</td>
</tr>
</tbody>
</table>

**Monthly HOOH Costs**

- Monthly HOOH Costs: $60,000 for all months

**Monthly HOOH %**

- Monthly HOOH %: 10% for all months

**TABLE 1 Suspension Project Example**
In Month 2, Project 2 was suspended the entire month and, as a result, the contractor earned no revenue from that project. In Month 2, the contractor’s total revenue was decreased by $200,000. However, while each project typically absorbed $60,000 of the contractor’s $60,000 in monthly home office overhead costs, during Month 2, Projects 1 and 3 each had to absorb $30,000 to compensate for the lack of revenue from Project 2 during that month. Thus, Projects 1 and 3 had to “absorb” more than their planned share of the contractor’s Month 2 home office overhead costs. A contractor might argue that this was unfair, and that the owner of Project 2 should reimburse the contractor $20,000 for the lack of Project 2 revenue required to absorb Project 2’s fair share of the contractor’s home office overhead costs in Month 2. While there is no precedent for reimbursing a contractor for home office overhead costs in full, such as the $20,000 described in this example, there is ample precedent for paying the contractor some amount, particularly on federal government projects and in other circumstances where the contract or the law does not prohibit such payments.

We will continue to use this project as the “suspension” project example for the first part of the discussion that follows.

The calculation of the contractor’s unabsorbed home office overhead costs is usually determined using appropriate apportionment formulas. These formulas can be organized into the following two categories:

- **Contractor Home Office Overhead Formulas:**
  - Eichleay
  - Canadian
  - Mashuel
  - Specified-Rate

- **Fabricator/Manufacturer Home Office Overhead Formula:**
  - Allegheny
  - Carteret

Each of these apportionment formulas will be discussed in this article.

### UNABSORBED HOME OFFICE OVERHEAD CALCULATIONS DURING A SUSPENSION

#### EICHLEAY FORMULA

The most commonly known home office overhead apportionment method is the Eichleay Formula. The use of the Eichleay Formula was established by an Armed Services Board of Contract Appeals decision in 1960.[1] The project involved the construction site of a Nike missile site and the contractor was the Eichleay Corporation. The formula that was used by the board to calculate the Eichleay Corporation’s unabsorbed home office overhead cost has since become known as the Eichleay Formula.

In federal contracting and in many state courts and other jurisdictions, the Eichleay Formula is a well-established method to calculate the unabsorbed amount of a contractor’s home office overhead. However, refinements governing its use seem to accompany each new ruling.

When applying the Eichleay Formula, some courts and triers of fact require that a distinction be made between (1) unabsorbed overhead versus extended overhead and (2) delays caused by additional work versus delays caused by suspensions. Additionally, when using the Eichleay Formula to calculate a contractor’s unabsorbed home office overhead costs, some courts have required that the contractor must establish the existence of (1) an owner-imposed suspension of critical work, (2) an owner requirement that the contractor be on standby during the owner-imposed suspension of the critical work, and (3) proof that while standing-by, the contractor was unable to take on additional work.

What sets the Eichleay Formula apart from the other home office overhead formulas is that it calculates the delayed project’s share of the contractor’s total home office overhead costs, or its “Allocable Overhead,” and then converts this allocable overhead to a daily rate. The Eichleay Formula does this by determining the ratio of the delayed project’s billings to the contractor’s overall billings during the delayed project’s contract period. Then, that ratio is applied to the contractor’s overall overhead during the delayed project’s contract period to determine amount of the contractor’s overall home office overhead that is applicable to the delayed project, as shown in Equation 1.

Once the Allocable Overhead is determined, it is then divided by the project’s actual duration (including the delay or suspension period) in calendar days to calculate the project’s Daily Unabsorbed HOOH Rate. Finally, the calculated Daily Unabsorbed HOOH Rate is multiplied by the number of compensable days of delay to produce the contractor’s unabsorbed HOOH damage amount for the subject project.

To demonstrate how this formula is used, the contractor’s unabsorbed home office cost was calculated using the example “suspension” project above.

Interestingly, the unabsorbed home office overhead amount calculated by the Eichleay Formula is nearly 12% less than the $20,000 home office overhead amount not absorbed by the Project 2 revenues in Month 2.

Importantly, because the formula relies on the contractor’s actual costs and actual revenue totals, the contractor typically uses its audited financial statements and the project’s last pay estimate as the basis for this calculation. Therefore, typically, the Eichleay Formula is not performed until after the project is complete.

#### CANADIAN FORMULA

Like the Eichleay Formula, the Canadian Formula calculates a contractor’s home office overhead damage amounts through the calculation of a home office overhead percentage allocable to the delayed project. This amount is then applied to the original contract amount and divided by the original number of days in the contract to determine a home office overhead daily rate for the delayed project. Next, that daily rate is multiplied by the compensable days of delay to calculate contractor’s home office overhead damage amount.[3]
However, unlike the Eichleay Formula, which calculates the subject project’s share of the company’s home office overhead costs based on a percentage of revenue, the Canadian Formula relies on the contractor’s overhead markup percentage. The markup percentage can be either the contractor’s planned home office overhead markup percentage supported by its bid documents or its actual home office overhead percentage calculated by an auditor of the contractor’s records. The formula is depicted in Equation 3.

Using data from the example project, here is the calculation using the Canadian Formula to estimate a contractor’s home office overhead compensation that is based on the contractor’s planned markup percentage of 12% from its bid.

As expected, using the contractor’s home office overhead bid percentage, results in a higher calculated unabsorbed home office overhead amount than the Project 2 portion of the contractor’s home office overhead costs that were not covered by Project 2 revenues in Month 2 because of the higher bid percentage.

If this same formula is used to calculate the contractor’s actual home office overhead percentage and the project’s actual duration is used, rather than the project’s planned duration required by the Canadian Formula, the calculated unabsorbed home office overhead amount is less, as depicted in Table 3.

Note that when using the contractor’s actual home office overhead percentage and the actual project duration to calculate the damage, the unabsorbed home office overhead amount is identical to the Eichleay Formula’s calculated unabsorbed home office overhead amount. That is because the Canadian Formula and the Eichleay Formula are essentially the same, except that the Canadian Formula uses planned number and the Eichleay formula uses actuals. It is the author’s experience that the Canadian Formula typically yields a higher damage amount than the Eichleay Formula. This experience is anecdotal and not based on a controlled study of representative projects.

In summary, the three different approaches to the calculation of the Canadian Formula presented in this article are:

- Of these examples, the first calculation amount is greater than the contractor’s anticipated absorption amount for Project 2 in Month 2. As stated above, the second Canadian Formula calculation is effectively the Eichleay Formula because of the use of actual project and accounting information. Another point to recognize that planned and actual project and accounting information should not be mixed as when they are combined it is akin to mixing apples and oranges that will result in a wrong answer, not an “alternate” calculation.

\[
\text{MANSHL FORMULA}
\]

The Manshul Formula was established by New York State Courts in 1981. The case involved a construction project for the Dormitory Authority of the State of New York (DASNY) for La Guardia Community College, a division of the City University of New York, and the contractor was the Manshul Construction Corporation.

Different from the Eichleay and Canadian Formulas, the Manshul Formula relied on the overhead percentage specified in the construction contract rather than using the bid or a calculated home office overhead percentage. The Manshul Formula also differs from the Eichleay and Canadian Formula in that it calculates the contractor’s home office overhead costs for the delay period, rather than first developing a daily home office overhead rate that’s then applied to the delay period.

Unlike the Canadian Formula that multiplies the overhead markup percentage by the original contract amount, in Manshul Construction Corp. v. DASNY, the court calculated the contractor’s home office overhead damage amount by totaling the contractor’s project revenue during the project’s extended duration, which equaled $895,785. Then, the court calculated the portion of the revenue earned in the extended period that represented the contractor’s overhead.

\[
\text{Comparison of Canadian Formula Calculations}
\]

The court did this by first noting that the contract included a 15% markup amount for change orders and extra work that covered “cost of supervision, overhead, bond, profit, and any other general expenses,” and used this percentage in its calculation. The court in the Manshul case also recognized that the $895,785 of revenue earned in the extended period included both overhead and profit, not just the contractor’s direct costs (labor, equipment, and material). Said another way, the contractor’s overhead costs were already in the $895,785 amount, so if the court were to markup the $895,785 earned-revenue amount by 15%, it would have essentially marked up the already marked-up contract payment.

As a result, the court used the calculation shown in Equation 4 to calculate the contractor’s direct cost
$895,785 \times \frac{100}{115} = \$778,943 = \text{Contractor’s direct costs in extended period}

\text{EQUATION 4}

Revenues in extended period $200,000.00
Contract OH% Markup 15%
Direct costs during extended period $(100/115) \times \$200,000 = \$173,913.04$
Overhead costs in extended period 7.5% x $173,913.04 = $13,043.48
Profit on Overhead in extended period $13,043.48 x 1.075% = $978.26
Total Overhead & Profit in extended period $14,021.74
Owner’s responsibility of delay 100% $14,021.74

\text{TABLE 5 The Manshul Formula}

Home Office Overhead Daily Rate = \frac{(A \times C)}{B}

\text{EQUATION 5}

\begin{array}{|c|c|}
\hline
\text{Original Contract Amount} & C \\
\hline
\text{Up to $5,000,000} & 0.08 \\
\text{$5,000,001$ to $25,000,000} & 0.06 \\
\text{Over $25,000,000} & 0.05 \\
\hline
\end{array}

\text{TABLE 6 Home Office Overhead Rate}

component of the $895,785 revenue amount in the extended period.

Given the 15% markup was identified in the contract as inclusive of overhead and profit, the court stated that the contractor was not entitled to receive duplicate profit and split the 15% equally between overhead and profit.

The court calculated an additional overhead amount of $58,421 by multiplying the contractor’s calculated direct costs in the extended period by the 7.5% markup percentage for overhead ($778,943 \times 7.5\% = $58,421$).

Although the court stated that the contractor was not entitled to a “duplication of profit based on the direct cost of the work during the delay period or on the profit portion of the contract price,” it did state that the contractor was entitled to recover the profit on the additional overhead amount totaling $4,382 ($58,421 \times 7.5\% = $4,382$). Therefore, it calculated the additional overhead and profit total as $62,803 ($58,421 + 4,382 = 62,803$).

Additionally, the court also recognized that it had to account for the fact that the project was delayed by both parties. After acknowledging that the contractor was responsible for 5% of the extended project duration, it multiplied the additional overhead and profit total by 95%, resulting in total damage amount of $59,663 ($62,803 \times 95\% = 59,663$).

$\text{To apply the example “suspension” project facts to the Manshul Formula it is necessary to identify the contract percentage markup for change orders. For this example, use 15% and equally split that 15% amount between home office overhead costs and profit. The Manshul Formula is shown in Table 5 with the example “suspension” project facts.}$

In this example, the owner is responsible for all the project delay. Thus, the contractor would be entitled to recover all the additional home office overhead and profit calculated during the extended period.

In summary, the Manshul Formula relies on the revenue earned during the extended project duration to calculate the direct cost of the work completed in the extended period, calculates the overhead portion of the revenue earned in the extended period, calculates additional profit on the calculated overhead and, then, compensates the contractor for the additional overhead and profit for the portion of the project delay that is the owner’s responsibility.

\text{SPECIFIED-RATE FORMULAS}

Unlike the Eichleay, Canadian, and Manshul Formulas that either must be performed, or are usually performed, after the project is complete, some owners include a home office overhead Specified-Rate Formula in their construction contracts to compensate contractors for their unabsorbed home office overhead costs for compensable delays.

For example, the Ohio Department of Transportation (ODOT) 2016 Construction and Material Specifications [5] includes a Specified-Rate Formula to compensate contractors for “home office overhead, unabsorbed home office overhead, extended home office overhead, and all other overhead costs” for excusable, compensable delays of 10 calendar days or more. Interestingly, ODOT does not compensate a contractor for its home office overhead costs for all excusable delays. In fact, it limits a contractor’s recovery of its home office overhead costs to the following instances:

- Delays resulting from utility or railroad interference within the project limits.
- Delays resulting from an engineer-ordered suspension.
- Delays resulting from the neglect of the department or its failure to act in a timely manner.

Aside from a delay caused by a third-party interference within the project limits, ODOT treats the contractor’s recovery of home office overhead costs as “unabsorbed” home office overhead costs. ODOT’s formula for calculating a contractor’s daily home office overhead rate is as shown in Equation 5:

$A = \text{original contract amount}$

$B = \text{original contract duration in calendar days}$

$C = \text{home office overhead rate from Table 6}$

ODOT applies different home office overhead percentages depending on the magnitude of the project’s original contract amount. The larger the original contract amount, the lower the home office overhead percentage.

Then, the contractor’s home office overhead daily rate is multiplied by the number of compensable calendar days of delay that meet the requirements for recovery of home office overhead as previously discussed in this article.

Similarly, the Virginia Department of Transportation (VDOT) 2016 Road and Bridge Specification uses a nearly identical formula to calculate a contractor’s home office overhead costs for a delay.[6] The only difference is that VDOT’s uses a 6% home office overhead percentage for all projects, not a variable rate based on the project’s original contract amount. Additionally, VDOT limits the contractor’s recovery of home office overhead costs to only the instances when the contractor was required to be on standby and disallows recovery of home office overhead for delays caused by extra work performed on a force account basis or by increased quantities.
Unlike the previous formulas, this Specified-Rate Formula could be used to compensate the contractor for home office overhead costs at any point in the project. Said another way, the owner does not have to wait until the project is complete and the contractor's actual costs are known to compensate the contractor for its unabsorbed home office overhead costs.

The calculation of the Specified-Rate Formula using the example “suspension” project is shown in Equation 6.

\[
\frac{($1,000,000 \times 6\%)}{150} = ($333.33)
\]

\[
($333.33) \times 30 = ($10,000.00)
\]

**EQUATION 6**

Note that the calculated home office overhead for the delay period is much lower than the Eichleay, Canadian, and Manshul Formulas previously discussed. The reason why the contractor's calculated unabsorbed home office overhead amount is less than the other formulas is because the “Specified Rate” for home office overhead in this formula being much lower than the home office overhead percentages in the other formulas. Thus, the resulting home office overhead amount is similarly much lower in the Specified-Rate Formula.

Note that if the calculated home office overhead percentage for the project is lower than the 6% used in this example, the Specified-Rate Formula would result in a higher home office overhead damage amount than might otherwise be due.

**FABRICATOR/MANUFACTURER FORMULAS (ALLEGHENY AND CARTERET FORMULAS)**

Using the Eichleay, Canadian, Manshul, and Specified-Rate Formulas to calculate extended or unabsorbed home office overhead cost can be problematic when applied to a manufacturer or fabricator. Though the issue is still under-absorption, the effect of the delay may be more difficult to evaluate.

To understand this problem, consider the following steel fabricator situation. The steel fabrication plant represents a significant capital investment with monthly operating costs that must be recovered through the fabrication and delivery of structural steel to many construction projects. Fabricators usually “schedule” fabrication in their facilities, with each project being assigned a “window” of time during which fabrication is planned to occur. If the approval of the steel shop drawings is delayed for a particular project because of a design change that is the owner’s responsibility, the fabricator may miss the opportunity to fabricate the project’s steel when it originally anticipated. This may result in the fabricator rescheduling the fabrication of all the work in its facility. In the best-case scenario, this rescheduling is simple—the project that is not ready for fabrication is moved to later in the year and another project is moved up to fill the “hole” left by the delayed project. In the end, the fabrication facility is fully used with no downtime, and the costs of owning and operating the facility are covered by the amounts earned for steel fabricated during the year.

However, it is also possible that moving the delayed project’s steel fabrication to a later period will leave the fabrication facility under used during the project’s planned fabrication window. The Eichleay Formula is not designed to calculate the resulting under-absorption. It is more applicable to the evaluation of the unabsorbed home office overhead costs of a construction project. Also, because the issue is not so much one of delay but one of under-absorption, the problem for the fabricator is not that the fabrication window slipped a month but that its fabrication facility and workers were idle or operating at reduced capacity during the originally scheduled window.

For manufacturers and fabricators, the more appropriate formula to use for this set of facts is the Allegheny Formula.[4]

That’s because the Allegheny Formula is based on a comparison of the contractor’s actual overhead rates between the originally expected performance period and the actual period of performance, not on the duration of the delay.

As an example, assume a steel fabricator planned to fabricate the steel for this project in Month 2, but because of an owner delay the steel was fabricated in Month 5, three months later. During Month 2, the fabricator’s actual overhead absorption rate was 15%, meaning that the fabricator’s actual overhead costs divided by its actual labor and materials costs were 15%. During Month 5, when the steel for this project was fabricated, the fabricator’s actual absorption rate was 10%. This means that the fabricator’s overhead costs were absorbed by, or spread over, its normal volume of work, not the reduced volume in Month 2. In both months, the contractor’s monthly home office overhead costs were the same, but the revenue earned in Month 5 was much higher than the revenue earned in Month 2. The difference between the two months was 5%.

In the Allegheny Formula, this percentage is then multiplied by the cost of the delayed steel work. If the labor and material costs for the delayed steel were $180,000, then the resulting unabsorbed home office overhead amount is $9,000, as shown in Equation 7.

Therefore, unlike the other formulas, the Allegheny Formula compares the absorption rates in two corresponding periods to calculate the difference, which is then multiplied by the direct costs of the work to calculate the fabricator or supplier’s under-absorbed home office overhead damage amount.

The Carteret Formula is similar to the Allegheny Formula in that overhead rates are compared to calculate the percentage of under-absorption in the originally expected performance period. However, instead of using the contractor’s actual overhead rate when the work was completed as the basis of measurement, the contractor’s normal overhead rate is used for the project.

To demonstrate, use the same project example discussed above, but assume that the contractor’s normal overhead rate is 11%. The formula would then calculate the following unabsorbed home office overhead amount as shown in Equation 8.
Note that the recoverable overhead amounts from the Allegheny and Carteret Formulas are significantly lower than the Eichleay, Canadian, and Manshul Formulas. The reason for this difference is that the excess home office overhead rate in the delayed months are multiplied by the direct costs of the delayed work, not the contractor’s home office overhead costs.

SUMMARY OF UNABSORBED HOME OFFICE OVERHEAD CALCULATIONS DURING A SUSPENSION

Table 7 summarizes the unabsorbed home office overhead calculations for these formulas during a 30-day suspension for the example project and the situation previously described.

It is useful to compare this range of the calculated home office overhead amounts to the $20,000 of home office overhead costs that were not absorbed by Project 2 in Month 2. This range of calculated home office overhead amounts shows how the different formulas produce different results according to how they calculate a contractor’s unabsorbed home office overhead.

We must remind ourselves that these formulas are merely apportionment formulas that produce a calculated unabsorbed home office overhead amount irrespective of entitlement. This means that before a contractor selects one of these formulas to calculate its unabsorbed home office overhead costs, it must demonstrate that it is entitled to recover those costs in accordance with the contract for the subject project and applicable case law.

Note that these formulas will produce a quantifiable cost amount regardless of whether the contractor was actually suspended, the next section of this article will examine another project that was delayed by extra work, not a suspension.

HOME OFFICE OVERHEAD CALCULATIONS FOR A PROJECT DELAYED BY EXTRA WORK

To demonstrate the effect of these formulas on home office overhead during an extended duration, use the facts from the same suspended project example above. Also assume that Project 2 was planned to take five months and the contract amount was $1,000,000. However, in this example, now assume that the contractor did not experience a suspension in Month 2 for Project 2. In fact, assume that the project earned $200,000 in each of the first five months but instead of being suspended by the owner on Project 2, the project was delayed by extra work totaling $200,000 for an additional month. Table 8 depicts these new facts for Project 2. Note that the only difference between this scenario and the original example is that in Month 2 the contractor earned $200,000 on Project 2.

When this information is used in the formulas previously calculated, the following amounts are calculated:

Note that in the extended project example, Project 2 earned $200,000 more than in the suspended example above. Thus, the Eichleay calculation for the extended project example results in a higher amount than for the suspended example because of the higher earned revenue amount for Project 2.
Again, the Canadian Formula's calculated amounts for the unabsorbed home office overhead based on the contractor's calculated actual home office overhead percentage mimics the Eichleay Formula and is higher than the suspended project example because of the higher earned revenue amount for Project 2, see Table 9.

The Manshul Formula's calculated amounts, using data in Table 10, for both the suspended and extended project examples were the same. The reason for these identical calculated amounts is that the formula relies on the direct costs expended during the project’s extended performance period as the basis to calculate the contractor's additional home office overhead costs, which applies in the same way for both the project's extended performance and the suspended performance.

**SPECIFIED-RATE FORMULAS**

Because the use of both ODOT and VDOT's Specified-Rate Formula to calculate a contractor's unabsorbed home office overhead amount is predicated on the contractor being suspended, a contractor would most likely not be entitled to payment for its unabsorbed home office costs on a project that was delayed by extra work. This presumption is based on the concept that the payment for the extra work would include a markup percentage for the contractor's home office overhead costs for the extra work.

Therefore, in the extended project example, the contractor would not be entitled to additional compensation for additional home office overhead.

Because the contractor did not experience a reduction in its revenue during the expected performance period, which in turn did not result in an increase of its actual home office overhead rate during the expected performance period, both formulas did not calculate an unabsorbed home office overhead amount.

**Summary of Home Office Overhead Calculations During an Extended Duration**

Table 11 summarizes the home office overhead calculations using these formulas for a project with a 30-day extended duration caused by owner-directed extra work.
Interestingly, the Eichleay and the Canadian Formulas calculated a higher unabsorbed home office overhead amount for the extended project duration example as compared to the suspended project example. These higher calculated amounts are caused by the extra $200,000 of revenue earned for Project 2 in Month 2.

Whereas the Specified-Rate, Allegheny, and Carteret Formulas would not calculate a recovery amount for the contractor’s unabsorbed home office costs.

CONCLUSION

Contractors have successfully recovered additional home office overhead-related compensation when their projects are delayed by an excusable delay. Different jurisdictions rely on different apportionment formulas to calculate the contractor’s costs. Because these formulas rely on different project-related and contractor-cost information to calculate the contractor’s unabsorbed home office overhead costs, they produce different results given the same facts. Additionally, when projects that are delayed by an owner-directed suspension and owner-directed additional work are compared, the calculated home office cost amounts differ for a variety of reasons. When selecting the appropriate formula, contractors should consider their contract specifications, the jurisdiction in which their project is being performed, and the specific facts of their project.

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5. Ohio Department of Transportation, Ohio Department of Transportation Construction and Material Specifications, Columbus, OH: Ohio Department of Transportation, 2016.

ABOUT THE AUTHOR

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The seed for a collaborative effort between the MENA region sections started in November 2018 in the Kuwait conference (see photo). Since then, there were attempts at working on an article that reflects random applications of delay analysis methods in miscellaneous countries in the region and identifying deviations of these applications from AACE’s RP 29R-03 (“Forensic Schedule Analysis”). The fruit of this collaboration finally materialized in the presentation given by Greater Cairo Section’s Waleed El Nemr and Hossam Kandeel and Jordan Section’s Haya Saleh (see Zoom pictures). The Greater Cairo section is grateful for Haya’s efforts and contribution and looks forward to further collaborations with other sections in the near future. Encouraged by the Silver Award for 2020, the Greater Cairo Section aims for an active 2020-2021 year.

Shown above are Haya Saleh (left), Lucia Vernon (middle) and Waleed El Nemr (right) at the first Greater Cairo Section’s conference in Kuwait in November 2018, which was the seed for a collaborative effort between the Region 7 sections.
The Jordan Section’s Haya Saleh, along with Greater Cairo Section’s Hossam Kandeel and Waleed El Nemr are shown in a practice Zoom session for their paper CDR-3549, which was included in the AACE Conference and Expo of 2020 as a prerecorded presentation.
TORONTO SECTION

On Tuesday, May 26, the Toronto Section conducted its first virtual section meeting in the post covid-19 era. In the meeting, the section’s board of directors provided a brief about the various certifications that AACE International offers, the areas of knowledge covered, in addition to the eligibility and minimum requirements to attain those certifications. Members of the board shared published statistics, real life examples and their own experiences that demonstrate the value of AACE certifications and how it can propel the careers of professionals who attain them.

The Toronto Section board of directors, members, and guests are shown above exchanging conversation and discussing the various aspects of AACE certification program during a May virtual meeting as in person gatherings were cancelled because of the COVID-19 pandemic.

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