Scheduling

Illustration: Chad Crowe
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An index to past issues of this journal appears in the Forum’s website (under Publications). Copies of past articles may be obtained through Westlaw and Lexis/Nexis. Westlaw contains selected articles from 1987, and its searchable database identifier is CONSLAW. The toll-free help line for Westlaw is 1-800-ref-atty. The Lexis database goes back to 2001; its library is ABA and the file is CONSTL. The toll-free help line for Lexis is 1-800-543-6862.

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The art of scheduling multiple threads of related activities is fundamental to the proper planning and execution of any project, be that a construction project or the publication of an edition of this legal journal. It all starts with a good plan, complete with target dates (milestones) that are logically arranged so that predecessor activities are completed in time for the follow-on activities to start. But having a plan isn’t enough because we all know that things rarely go according to plan. Consider the hypothetical where an author is late submitting a draft article (after all, they have day jobs) and where an editor is late revising that article (because we too have day jobs), causing disruption and acceleration for the good folks at ABA Publishing. Now, of course, that is purely hypothetical and would never actually happen, but you get the point.

Scheduling is our theme of this Winter edition of The Construction Lawyer. We start with a practical article by Richard Lowe, Nicole Woolard, and Robert D’Onofrio called How to Effectively Develop and Manage the Project Schedule. It discusses the art of scheduling from the project-management perspective, rather than the forensic perspective from which we construction attorneys so often frequently approach it, which makes for a refreshing read. If you are looking for a great checklist of issues to consider when creating and managing a construction schedule, you need look no further.

Our second article looks at construction schedules from a forensic perspective with the level of depth of analysis we have come to expect from its authors, Wendy Kennedy Venoit and Kenji Hoshino. The article is called Follow the Money: Interpretation and Evaluation in a Forensic Schedule Analysis, and it does an excellent job of walking the reader through concepts like project-level variance, activity-level variance, knock-on delays, and pacing. I found at least two quotes that I wish had been published in time for me to have cited them in my last post-trial brief.

Our third scheduling article takes a deep dive into the concept of concurrent delay. John Livengood and Daniel Brennan’s article, Judicial Approaches to Concurrent Delay, provides a detailed examination of how the issue of concurrency is handled by U.S. courts and appeals boards. After providing a little history and context, the article outlines and examines three major approaches to concurrency: intertwined delays, apportioned delays, and the jury verdict method of delay segregation.

The final article in this edition has nothing to do with construction scheduling but happens to be the winning article from the Forum on Construction Law’s annual law school writing competition. Gregory LaHood from University of Virginia Law School impressed the judges with his timely paper called Millennium Tower San Francisco: Untangling the Litigation Web, which discusses the key players and theories of liability surrounding the infamous sinking building in the city where I happen to practice. Mr. LaHood’s article might not be in line with this edition’s scheduling theme, but it did contribute to my ability to maintain the publishing schedule by being early.

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**WHAT’S NEW WITH THE FORUM?!**

Podcasts are back! Please check the Forum website ambar.org/constructionlaw in the upcoming weeks to download!

**Books and More Books!**

*More Sticks & Bricks*—This comprehensive guide to construction technology aims to provide all the basics of constructing a building. It is written by top engineers, architects and contractors.

*The 2017 A201 Deskbook*—Identifies and analyzes every significant change made to the A201 General Conditions of the Contract for Construction, and also includes for the first time a section-by-section critical analysis of the A201, with case law interpretations and practice tips.

Please visit www.americanbar.org/products/ to purchase the ABA Forum on Construction Law books.

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We Are Part of the American Bar Association

By Thomas L. Rosenberg

The American Bar Association is the largest organization of lawyers in the world. Its mission is to “serve equally our members, our profession and the public by defending liberty and delivering justice as the national representative of the legal profession.” It does this through service to its members, as an advocate for the profession, and as an entity focused on advancing the rule of law. It is committed to advancing the rule of law across the United States and beyond by providing practical resources for legal professions and others. In this regard and through the many means by which it undertakes these efforts, I am proud to be a member of the ABA.

We live in unique political times. The ABA Forum on Construction Law strives to be nonpartisan in the political climate of the day. However, we were pleased to have the Honourable Beverly McLachlin, the longest-serving Chief Justice of Canada, attend and speak at our Fall 2018 conference. She spoke during the height of the Justice Kavanaugh hearings. She was asked about the hearings that were front-page news at the time. Her response said it all. To paraphrase, Her Honour said the hearings were causing an erosion in people’s confidence of the independence of the judiciary in the United States. Her answer meant a lot to me and made me realize how important it is as a lawyer to be a member of the ABA because of its commitment to the advancement of the rule of law.

Yet these are troubled times for the ABA. Last year, as chair-elect of the Forum on Construction Law, I wrote several articles in “Under Construction” addressing the ABA’s efforts to become financially sound and maintain or increase its membership. I was asked to serve on a working group committee that interacted with senior ABA staff on a regular basis on these issues. The ABA rolled out what it called at the time “One ABA,” to address its problems. One ABA was going to enhance services to ABA members. Among other things, for a reduced dues payment, a member would be entitled to join two sections, divisions, or forums at no additional cost. An extensive amount of analysis and work went into this program to determine how it could be financially sound; how the dues payments would be allocated to support the sections, divisions, and forums; and how this new program would be marketed.

Outside consultants were hired and analysis ensued. In the end, however, One ABA was abandoned. Why? It was determined that it would not increase membership. Market studies showed that lawyers were not enticed by the new programs to be offered by the ABA.

Somewhat back to the drawing board but based on everything learned during the process, the ABA came up with a new proposal, the New Membership Model. It aims to simplify the dues structure and provide, among other things, significant free CLE programs to dues-paying members, additional low-cost CLE to dues-paying members, and access to an e-content law library that would be the best in the nation. We are hopeful this New Membership Model will right the ship.

As the chair of the Forum, I am asked why the ABA’s problems are our problems. The Forum is financially sound and continues to deliver the best CLE programs for construction lawyers anywhere. The ABA’s problems are our problems because they impact in some way everything we can provide to our members, as well as our ability to seek and recruit new, young, and diverse members. It is important that the ABA succeed because if the ABA succeeds, then all sections, divisions, and forums, including us, will do so likewise.

There are times when the ABA’s problems are frustrating. Many people have complained about the rollout of the ABA’s new website in October 2018. Immediately upon its rollout, the website crashed. Three months later, it is still not fully functional. In fact, it is expected that it will be several months more before the website is performing to the level expected. The crash of the website could not have occurred at a worse time for the Forum. It happened right when we were promoting our Regions Program on infrastructure projects to take place on November 9, 2018, in four cities across the country. People had difficult and sometimes impossible times registering for our program. We were unable to obtain accurate lists of people registered for the program. We tried to reach out to people that we knew had problems registering, but we lost many people whom tried to register, were unsuccessful, and gave up. The unfortunate thing is that we failed to deliver to many first timers who we want to recruit to join the Forum.

The above depicts the struggles within the ABA. However, we cannot lose track of the ABA’s mission and purpose. The ABA is the voice of legal professionals everywhere and works hard to protect judicial systems and democracy around the world. It is focused on preserving and advancing respect for the rule of law, the legal process, and the role of the legal profession at home and around the world. While there are times that we are frustrated with its problems, I am honored to be a member of the ABA and especially its Forum on Construction Law.
Many Individuals Help Lead the Efforts of the Diversity Committee in Promoting Diversity and Inclusion in the Forum

By David J. Theising

The Forum Diversity Committee is composed of about a half dozen members of the Forum Governing Committee and approximately a dozen at-large members of the Forum appointed annually by the Chair of the Forum, along with liaisons from each of the Forum’s 14 Divisions. These 30 or so members of the Forum Diversity Committee are organized into various subcommittees that focus their efforts on different aspects of the mission and objectives of the Diversity Committee.

The Diversity Scholarship Subcommittee, led by yours truly with able assistance from Erin Cannon and Kristin Sherwin, is responsible for the outreach effort to award Diversity Scholarships for the cost of registration to each of the three national meetings of the Forum every year to women and minority construction lawyers, construction lawyers with disabilities, and construction lawyers from the LGBT community, as well as to the Regional Meetings each year and the biennial Forum Trial Academy. For each national meeting, this subcommittee typically makes personal contact with up to a hundred state, local, specialty, and diverse bar associations to invite applications for Diversity Scholarships.

In addition to Diversity Scholarships to the Forum’s national and regional meetings, the Forum also awards up to six Diversity Fellowships at the Annual meeting each year. The Diversity Fellowship Program is the Forum’s signature diversity outreach initiative and is the responsibility of the Diversity Fellowship Subcommittee, co-chaired by Arlan Lewis and Lori Baggett. Each Fellowship is for three years, and Diversity Fellows receive a waiver of all registration fees for the Forum’s three national meetings each year, reimbursement of reasonable travel and accommodation expenses associated with attending the Forum’s Annual meeting each spring, and waiver of Forum membership dues, and payment of ABA membership dues on a graduated basis. Additionally, Fellows are afforded the opportunity to serve on the steering committee of one of the Forum’s 14 Divisions. The Fellowship has developed into a prestigious award among diverse construction lawyers and is highly competitive.

There are two National Meetings Outreach Subcommittees: The Women’s Events/Speakers Subcommittee, chaired by Deb Mastin, is responsible for planning the Women’s Networking Reception or Women’s Networking Luncheon at each of the three national meetings of the Forum. The Diversity Events/Speakers Subcommittee, chaired by Kelsey Kornick Funes, is responsible for assisting the Forum Chair and Chair of the Diversity Committee in searching for and selecting a speaker for the Diversity Breakfast or Diversity Lunch at each of the national meetings of the Forum, and assisting the speaker with travel arrangements, accommodations, and other details.

The Internal Mentoring – National Meetings Speakers Subcommittee, chaired by Jaimee Nardiello, is responsible for maintaining, augmenting, and updating a centralized database of current diverse Forum members as potential speakers at future national meetings of the Forum. The current database contains almost a hundred diverse Forum members, and plans are underway to substantially expand that database.

The Internal Mentoring – Publications Subcommittee is responsible for identifying, mentoring, and promoting current diverse Forum members for opportunities to write for Forum publications, including Forum books, The Construction Lawyer, Under Construction, and Division Newsletters and Blogs. This subcommittee has individuals at the ready to mentor, edit, or even co-author articles with diverse individuals for publication.

The Internal Mentoring – SPEC Long Distance Learning Subcommittee, chaired by Tracy Steedman, is responsible for identifying opportunities for current diverse Forum members to participate in SPEC long distance learning programs, and producing programing and speakers for at least one long distance learning program or webinar each bar year.

The Law School Outreach Program Subcommittee is designed to introduce law students to a career in construction (Continued on page 14)
How to Effectively Develop and Manage the Project Schedule
By Richard H. Lowe, Nicole Woolard, and Robert M. D’Onofrio

Creating a schedule would be pointless without a firm grasp on how to effectively manage the project schedule once it is made. A project schedule should be a tool that guides the project to a successful and timely completion. Modern construction contracts recognize the importance of not only scheduling but also the effect that “time impacts” to performance can have on all stakeholders on a project. As a result, it is necessary to have a clear understanding not only of the basic form and format of the project schedule, but also the proper maintenance of schedules during the construction process. Effective schedule development at the outset and management of the schedule throughout the project are inextricably linked to financial success for all stakeholders on a project. In an effort to assist the reader to reach these lofty goals, this paper will describe how project specifications can be drafted to achieve the best in schedule development and maintenance. Further, this paper will lay out other steps that the parties can take to maintain a schedule.

Expectations at Contract Formation: Use CPM in Preparing a Schedule
By way of background, the first “schedules” employed on construction projects were linear bar charts on the left identified rows for each of the significant categories of project activities and across a timescale to the right identified the duration for each of those activities with a bar running from the beginning of the activity to the end. Use of bar charts as planning tools started in the early 1900s with Henry L. Gantt and Frederick L. Taylor (hence, the term “Gantt charts”). Despite the advancement in scheduling that linear bar charts provided, bar charts do not identify conditional relationships between activities or necessarily reflect the logic of the plan reflected by the schedule. As a result, bar charts cannot illustrate which activities are critical and which have float. Because bar charts cannot readily assist the construction team in determining which activities require the most attention and resources at any one time, their use has limited application.

Schedules that do identify the relationships between activities in addition to the timeline for completion of work are called critical path method (CPM) schedules. CPM schedules identify the logical relationships between the start and end times of activities that determine the chain of activities that are the critical path for completion of the project. First developed in the late 1950s to minimize the overall time required for turnarounds in manufacturing, CPM schedules added the logical relationships between activities to calculate which activities were part of the critical path and therefore must be completed as scheduled or will negatively impact the schedule, and those activities that had float. The use of a CPM schedule permitted a manufacturer to direct resources to the critical activities to shorten the overall project duration, as well as to make necessary adjustments when unforeseen circumstances impacted the timing of an activity. Just as in manufacturing, the use of CPM schedules in construction projects allows the contractor to identify the critical activities for completing its work within the project time constraints, and to identify and adjust resources where circumstances impact the critical path activities.

A fundamental expectation for a schedule should be that it reflects anticipated performance productivity under the anticipated conditions, as adjusted by actual experience during the project. At the outset of a project, be it in the design or construction period, it is essential to determine what resources are required to meet project budget and time constraints. Then, once created, it is crucial that the schedule be updated and adjusted regularly to reflect actual performance, so that everyone can be confident that the schedule accurately reflects actual progress, and so that any adjustments required can be implemented in a timely fashion. Regardless of contract requirements for scheduling submissions, it is recommended and prudent that the contractor prepare a logic-driven CPM
schedule reflecting intended performance and that the schedule be submitted to the owner at the outset of the project to establish a baseline for evaluation of performance.

**Expectations at Contract Formation: Prepare Balanced Scheduling Specifications**

The act of preparing a contract specification on scheduling truly can be considered an art form. Too little specification may permit a contractor to prepare a schedule so light in substance as to be useless, and too much specification can become so burdensome that the contractor cannot fulfill its obligations. Vague and/or general specifications can result in schedule updates lacking current project status, which is not conducive to claim avoidance or resolution. Onerous schedule provisions requiring excessive detail may lead to fewer, less-timely, and less-reliable updates of the schedule. Unreasonable restrictions on changes to the schedule or consequences for deviations from the schedule also may discourage necessary revisions to the schedule logic to reflect actual conditions in the field.

A schedule should be a flexible tool, subject to changes and updates as the project progresses. It is, therefore, important for bidders and prospective contractors, from the outset, to understand their schedule obligations and responsibilities, and to refrain from treating the schedule as merely a technical box to check. Everyone must realize the importance of frequent updating of the schedule to reflect actual progress and the plan for completing the remaining work. Despite a contractual requirement to update the schedule, the contractor should not be burdened during a project by increased or ever-changing schedule submission requirements. Consistent enforcement of the project specifications on scheduling helps avoid disputes that are created when an owner fails to enforce requirements early on and then subsequently claims that the contractor failed to meet its scheduling obligations and engaged in scheduling deficiencies.

The following is a discussion of common scheduling points to keep in mind while preparing contract specifications and schedules during the project.

**Include Durations Based on Resources That Match Budget**

The contractor’s schedule should include the planned durations for each activity necessary to perform the work within the project time constraints. A contractor’s baseline schedule is intended to incorporate the at-bid plan for the work, in terms of both durations and budget. Contract terms may hold a contractor to its estimates of job duration for the project if there are no excusable delays or changes to the work. In other words, actual activity durations longer than scheduled may represent the contractor’s unrealistic or erroneous as-bid duration assumptions, and any resulting delay may be nonexcusable, thereby denying the contractor additional compensation for such delay and subjecting the contractor to potential damages for late completion. Owners, too, can be hurt by a schedule that is overly optimistic: Those relying on the contractor’s schedule to plan their own post-construction activities (such as move-in, plant start-up, or rental of a new building to a tenant) will be sorely disappointed if they come to learn that the contractor’s schedule durations were overly optimistic and unlikely to ever have been met. By the same token, contractors should not create schedules that include overly generous durations, but accurately reflect expected activity durations. Sometimes contractors have a tendency to build float into their activity durations. Other times, contractors have a tendency to assign simplistic time periods to an activity, such as five/ten/fifteen days, all of which are the length of a work week, instead of making a more precise determination for that specific work activity.

**Account for the Weather**

A schedule should account for and incorporate normal adverse weather based on contractor experience and historical data. Further, while the schedule is being developed, a review of the technical specifications should be undertaken to account for weather limitations inherent in any particular work activity in order to avoid impacts or conflicts with anticipated weather conditions at the site, such as temperature limitations impacting the timing of performance of roofing or exterior painting.

Owner specifications and contractors often use historical data from the National Oceanic and Atmospheric Administration (NOAA) to determine the average number of days of precipitation for any given month or other weather data that would inhibit work. Some contracts, such as those of the U.S. Army Corps of Engineers, include a chart specifying the number of anticipated weather-related nonwork days per month. The contract may then provide that the contractor will only be granted time extensions due to weather if the actual nonwork days exceed the specified number of days for that month. Typically, when a contract specifies that the contractor assume a number of adverse weather delay days, it is appropriate to incorporate that number of days into the schedule. One method for incorporating adverse weather impacts into a schedule is by increasing the contractor’s activity duration estimates to account for adverse weather. For example, if weather impacts an activity 10% of the time, the duration for that activity can be increased by 10%. However, this method is not preferred because it is hard to separate out increased weather risk from the risk of other impacts in the activity duration. The preferred way to account for weather nonwork days is by modifying the calendars attached to an activity.

Ordinarily with its schedule, the contractor is identifying the anticipated nonwork days, and is thereby assuming the risk that the actual weather delays will exceed the anticipated. Subsequent weather nonwork days impacting the critical path may not be considered excusable until they exceed the normal, anticipated monthly weather days unless the timing of the contractor’s work has been shifted into a period of different adverse weather by events beyond the contractor’s control; for example, an owner’s suspension of a project, delaying commencement of site earthwork from a dry season to a wet season. By incorporating weather into the calendar, the future weather impact resulting from schedule delay will be
automatically worked into any time impact schedule projection or update and attributed to the causal impact, whereas it may not otherwise be noticed until it occurs, at which point it may be too late to claim as part of a prior change.

Secondly, if a contractor is not incorporating full normal weather, it cannot claim additional weather until the normal weather is exceeded. This is much easier to prove via identified and anticipated weather days in each month, rather than weather incorporated into the activity durations. Also, if the disparity in anticipated weather impacts changes per month, a schedule incorporating weather on the calendars will more accurately estimate the effect of weather on a schedule activity based on its month of performance than would weather worked into activity durations.

**Determine If the Schedule Should Be Resource-Loaded**

“Resource-loading” in a schedule consists of the addition of information related to labor, material, and equipment assigned to each schedule activity. The benefits of resource-loading generally match those of keeping an accurate, up-to-date schedule by providing metrics for analyzing progress and better controls when implementing the work. The more accurate, achievable, and realistic the schedule, the more useful it is in managing and performing the work. However, adding resources to a schedule takes additional time and effort required in schedule preparation. An owner should consider whether or not to require resource-loading in the schedule specification.

A contractor often is concerned that the owner may use resource-loading of a schedule against the contractor as the project proceeds, particularly if the contractor does not employ the anticipated resources to perform each activity. At the same time, an accurate resource-loaded schedule may make it easier for a contractor to prove impacts to its schedule when the owner insists that work forces be used differently than the manner envisioned in the contractor’s plan. Further, when impacts/changes occur, a resource-loaded schedule will allow the contractor to project the economic impact if the performance period for the contract cannot or will not be extended.

In a simple project, the additional effort required to resource-load may not be worth the additional cost and effort of requiring it in a schedule specification. However, on a complicated or sophisticated project, there may be benefits to both parties to have a better understanding of planned versus actual resources in order to track the schedule and productivity impact of changed conditions.

**Determine If the Schedule Should Be Cost-Loaded**

“Cost-loading” of the schedule ties payment to the progress of work, as would be reflected on the CPM schedule. Similar to resource-loading, an owner has to determine whether to require that payment of the work be limited to schedule progress in the CPM schedule. This is generally considered a good practice because it ensures the schedule will be kept accurate and up to date by the contractor because the contractor’s payments are related to its ability to progress the schedule. Without linking progress payment to schedule updates, there is a higher risk that the schedule will not be accurately or timely updated during the project when staff is overloaded and overseeing work progress takes precedence over administrative tasks.

**Determine If the Contractor’s Right to Achieve Early Completion Should Be Restricted**

Unless contractual provisions state otherwise, contractors have a right to finish early. In certain circumstances it might be prudent for the contractor to plan an early completion, for instance, to avoid adverse weather or take advantage of a “bonus” opportunity. Generally, a contractor has to satisfy three requirements for additional compensation when delays prevent the contractor from achieving its early completion schedule:

1. The contractor intended to complete the contract early;
2. As of the time of the delays, the contractor had the ability to finish the project early; and
3. But for the owner’s actions, the contractor would have actually completed its work early.

Although notice of intent to finish early may not be required, it is recommended that a contractor inform an owner of its plan to complete early, such as via the contractor’s schedule submittals. If early completion provisions are satisfied, a contractor may claim compensable delays to its early completion date, rather than through the contractually required completion date. If an owner intends to restrict or prevent delay damages to an early completion schedule, it must be explicit in its requirement. Specifically, an owner’s insertion of a contract provision purporting to designate “float” between the early completion date and the contractual completion date may be inadequate to prevent a contractor’s entitlement to delay damages. If an owner cannot or does not want to obtain early completion and risk paying early completion damages, the contract and/or specifications should make it explicitly clear that the contractor cannot finish early on the project.

**Include Any Project-Specific Restrictions in the Schedule**

It is important to incorporate any project-specific restrictions into the schedule. Some examples of unique restrictions include limitations on work hours in certain areas of a project due to residential areas, or prohibition on work in certain areas of a project during an environmentally protected species’ mating season. Other restrictions may come in the form of changes to the means methods of the work, such as an owner changing the specified method of below-grade work in specific project areas to avoid damage to adjacent structures, such as drilling caissons instead of driving piles, or underpinning an adjacent building prior to construction in that area. An owner may want to see the time constraints reflected in the schedule by using a particular format, for example, requiring soil settlement wait periods of a specified length, or requiring specific allowances for the timing of responses to submittals.
The Schedule Should Be Logic-Driven and Free of Unnecessary Constraints

Schedules should be driven by logic. That is, the schedule’s critical path should be calculated based on the relationship between the activities. In accordance with proper scheduling practice, “CPM logic should have clearly delineated interrelationships between the various internal work activities and the length of time each activity would entail.” That means minimizing the number of constraints on activities that would interfere with a logic-driven calculation. Examples of constraints include assigned constraints, overriding float values, and unrealistic leads and lags. An example of an assigned constraint is when an activity is logically limited to start on a specific date, regardless of other logic ties affecting the activity. That may not be appropriate if the activity is also dependent on predecessor work finishing.

Another example is the use of unrealistic leads and lags, such as by having a long duration paint activity follow a long duration drywall activity by starting 20 days after the start of the drywall activity. In that case, the work is likely dependent on finish of each area of drywall prior to paint, rather than all paint areas available 20 days after the first drywall activity starts. An additional issue with excessive leads and lags is that they might interfere with calculating the scheduled effect of a delay. For instance, in the paint/drywall situation above, if a new delay activity preventing all drywall work, such as a supplier or labor strike, is inserted halfway through the drywall activity, the schedule may improperly not show any impact to paint because after it started following its lag, paint would no longer dependent upon the finish of drywall.

A practical tip for contract specifications is to limit constraints on activities and have the contractor provide an explanation and request approval for any constraints it believes are appropriate in the schedule.

Identify Requirements for Change Orders That Request Additional Time

Frequently, contractors seeking a time extension by change order should submit a proposal for the schedule impacts resulting from a change. The most common method for proving the time impact is known as a “time impact analysis.” The concept behind time impact analysis is to evaluate the status of the project at different points in time, often before and after a delay event, to evaluate the impact of the delay event to the projected completion date of the project.

There are two types of time impact analyses: The first is known as a “prospective time impact analysis.” As the name suggests, that analysis starts at the time a change is identified and shows the impact on the most recent schedule update. This version of time impact typically involves insertion of a fragmentary network (“fragnet,” for short) to show the time impact to a contract milestone resulting from the change. In contrast, the second type of time impact analysis is known as a “retrospective time impact analysis,” which, not surprisingly, focuses on the delay from a perspective comparing the schedule before the impact with the actual impact after the event in question had occurred.

An example of a typical “prospective time impact analysis” provision (referring to a “fragnet”) in U.S. Navy contracts is as follows:

Time Impact Analysis

The Time Impact Analysis method shall be used by the Contracting Officer and Contractor in determining if a time extension or reduction to the contract milestone date(s) is justified. The Contractor shall provide a Time Impact Analysis to the Contracting Officer for any proposed contract change or as support for any Request for Equitable Adjustment by the Contractor. Submit the Time Impact Analysis schedule, reports, etc., on disk and as a printed/plotted hardcopy.

a. The Contractor shall submit a Time Impact Analysis (TIA) illustrating the influence of each change or delay on the Contract Completion Date or milestones. Unless the Contracting Officer requests an interim update to the schedule, the current monthly updated schedule accepted by the Government shall be used to display the impacts of the change. Unless requested by the Contracting Officer, no other conformed changes will be incorporated into the schedule being used to justify the change impact.

b. Each TIA shall include a Fragmentary Network (fragnet) demonstrating how the Contractor proposes to incorporate the impact into the project schedule. A fragnet is defined as the sequence of new activities and/or activity revisions, logic relationships and resource changes that are proposed to be added to the existing schedule to demonstrate the influence of impacts to the schedule. The fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. The Contractor shall provide a hardcopy printout of the fragnet activities and relationships being added and also insert the fragnet into the most current, accepted Monthly Network Analysis Update, run the schedule calculations and submit the impacted schedule with the proposal, claim, etc. Include a narrative report describing the effects of new activities and relationships to interim and contract completion dates, with each TIA. Submit time extension requests with a Time Impact Analysis and three hardcopies of the fragnet (in a graphic format), impacted schedule (with fragnet loaded), Total Float Report, Narrative Report and Log Report.

Other versions of time impact analysis provisions are similar. The purpose of a prospective time impact analysis, by the current up-to-date revised schedule update, is to determine the quantity of critical delay to the projected completion date as of that time on the project, as opposed to an after-the-fact delay analysis.

As a practical tip, if a specification intends to require
a method for forward-projecting impacts, such as via a prospective time impact analysis, it may be useful to also recommend a retrospective time impact analysis in case the parties could not agree on a projected impact and the impacting event finishes. In that case, it may be good practice for a specification to reference the industry standard for schedule delay analysis, ASCE/CI XX-17, published in 2017.

Clarify That the Project Owns the Float
Float is generally owned by the project, unless otherwise specified by contract. The courts are split on float ownership. Some commentators have argued that the contractor should own the float because it is part of the contractor’s means and methods, and others have argued that the owner should own the float, or that the project should own the float. Float ownership tends to be difficult to determine because float-ownership clauses are somewhat draconian. For example, if the contractor owns the float, would every owner caused delay result in a compensable time extension? If the owner owns the float, would every contractor delay result in an assessment of liquidated damages? In those two scenarios, delay analysis would be fairly straightforward.

The underlying legal concepts behind float, the critical path, and any resulting delay analysis are embodied in the following elements: liability, causation, and damages. In other words, if a delay occurs to an activity with available float, that delay will not extend completion beyond the required contractual completion date. As a result, the contractor and owner are not actually harmed because there is no delay to the project completion date. If the contractor would have been on-site regardless of the delay, the contractor was not damaged and, therefore, would have a hard time proving harm.

Despite the fact that float is typically owned by the project, contractors should not sequester float in the schedule by shortening the planned completion date or by adding additional constraints. Owners should not correspondingly interfere with logic-driven schedules by including specifications that require a maximum percentage of critical activities, thereby forcing float into the schedule. However, as a practical matter, policing float sequestration is difficult to evaluate.

Administration of the Contract and Enforcement of the Schedule
In addition to creating workable and useful CPM scheduling provisions and specifications at contract formation, all parties must also continue to abide by and administer the scheduling requirements throughout the course of the project. Accurate and timely schedules provide for accurate forecasting for project completion and become an important tool to prove or disprove delay, impact, inefficiency, and acceleration. The following principles aim to achieve project progress, open communication, and effective management from start to completion.

Contractor Should Provide Accurate and Regular Updates
At the outset, one must understand that project schedules are communication tools, the effectiveness of which are dependent on keeping the schedules current. As such, any contract or schedule specification requiring a CPM schedule should require schedule updates. The contractor should prepare accurate and regular schedule updates at such frequency required by the contract, or as otherwise required to reflect an accurate project status. It is recommended that the schedule updates be required as frequently as payment applications are processed, so as to link progress with value of performance.

In addition to providing updates to ensure the parties are relying on a current and accurate schedule, failure to provide regular updates may subject a contractor to the risk that a failure to update the schedule may be deemed material breach of the contract. In addition to the risk of contract breach, should a dispute as to delay arise and the contractor has not updated the schedule regularly, the contractor may not be able to show what, if any, impact the delays had to the critical path if the interim schedules have not been updated. Failure to update the schedule will prevent the parties from making an accurate assessment of the actual work performed and conditions at the jobsite for any specific date or period of time.

In order for the schedule to be a useful tool for evaluating delay, a schedule must be updated frequently to include delays as they occur, provide the status of existing activities, and be reflect the effects of changes in the work. Reports generated by schedule comparison software are often large and unmanageable and are not an adequate substitute for substantiation of delay claims or time extensions through a properly updated schedule. In sum: “[w]ithout constant and consistent monitoring and agreed updating by the parties, the . . . schedule loses much of its utility as a definitive schedule.”

In addition to updating for progress up through the data date, schedule updates should also reflect the revised plan to perform the work forward of the data date, and also any excusable time extensions to the contract completion date. Numerous courts have explained that a CPM schedule must have been continuously updated throughout the project and actually used to schedule the work in order to be effectively used in litigations for delay and time extensions. Should litigation arise, the “best evidence” of the cause and duration of events impacting time is a regularly updated schedule. Schedule analyses put together after completion of the work are theoretical in nature and therefore of limited value.

The schedule should be used and remain involved throughout the project in order to most efficiently manage resources. Throughout the project and as required by the contract, the schedule should also be updated as to changing needs for manpower and equipment resources, costs tied to progress, and/or availability of locations. As recognized by the General Services Board of Contract Appeals, “[t]o give an accurate indication of the actual planned job schedule, a CPM schedule must take resource leveling into account.” Resource leveling involves the contractor’s preferential sequencing of crew flows reflected in a schedule by logic ties between activities performed by the same crew.
This has the effect of stretching out the sequence of planned work the way the contractor intends to perform it instead of showing all activities taking place simultaneously. Given certain limitations of CPM scheduling, managing and monitoring resources are particularly important to lower the risk of inefficiencies and workflow interruptions.

**Owner Should Enforce Schedule Specifications to Avoid Potential Waiver**

The owner should stay involved to review the contractor’s schedule submittals and hold schedule review meetings. Regular review is important not only to monitor progress and work timelines, but also to be able to promptly take action for noncompliance with scheduling contract provisions and specifications. Owners who ignore contractual schedule requirements risk being deemed to have waived what might otherwise be the contractor’s material breach of the contract for failing to comply with such scheduling requirements. An owner’s termination of a contractor based on an alleged breach, where the owner has waived its rights to enforce such a contract requirement, may instead be deemed a breach by the owner. Additionally, an owner may be subjected to an implied obligation to review and approve or reject the schedule and hold liable for failing to fulfill such obligation. In *Fullerton Construction Co.*, the court held that a contractor was entitled to a time extension for the government’s delay in approving critical schedule submittals when the contract contained a seven-day period for owner’s review of certain submittals.

**Contractor’s Time Extension Requests Should Be Timely Submitted**

When delay occurs, the contractor should promptly notify the owner of delay and, where possible, contemporaneously submit a time extension request. Failure to provide notice or request a time extension may result in contractor’s heavier burden of proof or inability to defend a liquidated damages claim at the end of a project. Furthermore, if it is found that the owner suffered prejudice by not being informed of the delay in a timely manner to investigate or mitigate the cause, the contractor’s claim may be denied. If full costs cannot be immediately determined, a contractor may provide a reservation of rights with a change order.

As discussed above, there are two principal methods of time impact analysis, forward-looking and backward-looking (i.e., prospective versus retrospective time impact analyses). The key differentiator between the two methods is whether or not the work has already been performed.

Many contract specifications, such as the federal specifications referenced above, require a prospective time impact analysis. This includes the insertion of a fragnet into the most recent schedule update prior to the delay. Conducting a prospective time impact analysis allows both parties to agree on the impact due to the delay and execute a change order for the appropriate time extension, and compensation, if applicable.

If the parties do not, or cannot, agree on an appropriate time extension, or if for some other reason it is impossible or impracticable to perform a prospective time impact analysis, the alternative is to wait and evaluate the actual impact retrospectively, in accordance with industry standard practice. A retrospective time impact analysis looks at the subsequent schedule updates after the delay event in order to identify the actual impact. This analysis is backward looking in that it does not involve insertion of fragnets forward of the data date; however, it still looks at impact to the scheduled completion date to quantify delay. A retrospective type of time impact analysis primarily uses the contractor’s regular monthly updates, comparing the revised schedule after the delay with the schedule update prior to the delay. Despite most contract language requiring prospective time impact analysis, courts and dispute resolution boards often accept retrospective time impact analysis when evaluating delays after the fact, because a retrospective analysis shows the actual impact. Retrospective time impact analysis is appropriate for use after the full impact of a schedule delay has occurred, whether that full impact is realized during the project or forensically evaluated after project completion.

**Owner Should Timely Respond to Claims as Submitted**

An owner has a general duty to respond to time extension requests and claim submissions in a timely manner during the project. An owner’s failure to grant appropriate time extensions when they are due the contractor may ultimately result in waiver of the contract completion date and/or time-is-of-the-essence clause in the contract. Furthermore, courts and boards have imposed an implied obligation on owners that time extensions be granted in a timely manner. If a time extension is not granted, the contractor may be entitled to acceleration costs required to make up for the delay in an attempt to achieve the contract completion date in effect at the time.

One of the dangers in not timely responding to, or approving, appropriate requests for time extension is potential liability for constructive acceleration. There are generally three types of acceleration: directed, voluntary, and constructive. Directed acceleration occurs when the owner directs the contractor to accelerate and agrees to compensate the contractor for the associated costs. Voluntary acceleration occurs when the contractor voluntarily accelerates in order to finish early or to make up for its own delays. Constructive acceleration occurs when the contractor is improperly denied a time extension and forced to accelerate in order to avoid liquidated damages. The Federal Circuit described constructive acceleration in *Fraser Construction Co. v. United States* as:

A claim of acceleration is a claim for the increased costs that result when the government requires the contractor to complete its performance in less time than was permitted under the contract. The claim arises under the changes clause of a contract; the basis for the claim is that the government has modified the contract by shortening the time for performance, either expressly (in the case of actual acceleration) or implicitly through
its conduct (in the case of constructive acceleration), and that under the changes clause the government is required to compensate the contractor for the additional costs incurred in effecting the change. A claim of constructive acceleration ordinarily arises when the government requires the contractor to adhere to the original performance deadline set forth in the contract even though the contract provides the contractor with periods of excusable delay that entitle the contractor to a longer performance period.60

For constructive acceleration, a contractor must generally prove
1. the contractor encountered a delay that is excusable under the contract;
2. the contractor made a timely and sufficient request for an extension of the contract schedule;
3. that the government denied the contractor’s request for an extension or failed to act on it within a reasonable time;
4. the government insisted on completion of the contract within a period shorter than the period to which the contractor would be entitled by taking into account the period of excusable delay, after which the contractor notified the government that it regarded the alleged order to accelerate as a constructive change in the contract; and
5. the contractor was required to expend extra resources to compensate for the lost time and remain on schedule.61

With respect to an owner’s action on time extension requests, failure to act within a reasonable time may satisfy the third element of a contractor’s constructive acceleration claim.62 As justification for delayed action, owners sometimes claim that granting a compensable time extension as a delay occurs may be premature because concurrent contractor delays may not yet be identified. However, concurrent delay may still result in an excusable time extension.63 With Sherman R. Smoot, the Court of Appeals for the Federal Circuit removed any presumption of compensable delay when excusable delay is granted contemporaneously.64 Therefore, granting a time extension but leaving compensation for determination at a later date would not prejudice the owner’s later right to deny additional compensation for the delay if concurrent delays are later discovered, but would avoid constructive acceleration. Although courts and boards can later review compensability, time extensions granted during the course of the project typically cannot be later withdrawn because of the effect the contractor’s allocation of resources, and therefore the cost of the work required to meet the project time.65

Endnotes
2. Fortec Constructors v. United States, 8 Cl. Ct. 490, 505 (1985), aff’d, 804 F.2d 141 (Fed. Cir. 1986) (“Thus, if the CPM is to be used to evaluate delay on the project, it must be kept current and must reflect delays as they occur.”).
6. Id.
7. Each activity in a schedule has a calendar attached to it, which identifies the available work days upon which that activity can progress. For example, concrete work planned for a normal five-day workweek would be attached to a five-day calendar, while the subsequent concrete curing waiting period following the pour should be attached to a seven-day calendar activity because it is not manpower dependent. Incorporating adverse weather into the five-day calendar would involve making a selected number of days per month nonworking instead of working. In that example, weather would affect the 5-day working week activity but not the seven-day nonworking cure period activity.
8. See, e.g., Whitesell-Green, Inc., ASBCA No. 53938, 06-2 BCA ¶ 33,323 (“Conventional CPM techniques must be utilized to satisfy both [sic] time, cost, and resource (manpower, equipment) applications.”).
9. See, e.g., Mergentime Corp. v. Wash. Metro. Area Transp. Auth., Civ. 89-1055 TFH, 2006 WL 416177 (D.D.C. Feb. 22, 2006) (“The approved CPM schedule was a cost-loaded schedule, i.e., dollars were assigned to each activity on the schedule and payments were made by WMATA in accordance with the schedule as activities were completed.”); Mit-Con, Inc., ASBCA No. 44509, 93-2 B.C.A. (CCH) ¶ 25,570 (“monthly updated CPM printouts were submitted to the Government for payment purposes”).
10. Metro. Paving Co. v. United States, 163 Cl. Ct. 420, 423 (1963); See also Dale & D’Onofrio, supra note 3, § 3.6 Right to Early Completion.
15. See, e.g., id.
16. See, e.g., id.
17. George Sollitt Constr. Co. v. United States, 64 Fed. Cl. 229, 264 (“A project’s critical path is composed of interrelated activities whose sequence is imposed by logical ties of precursor and successor activities.”).
18. Id.
19. Appeal of Page Constr. Co., ASBCA No. 30266, 89-1 B.C.A. (CCH) ¶ 21,488 (Nov. 3, 1988); see also Appeal of Cogefar-Impresit, U.S.A., Inc., DOTCAB No. 2721, 97-2 B.C.A. (CCH) ¶ 29,188 (Aug. 13, 1997) (“the revised schedule contained significant logic problems and did not truly represent the manner in which the work was to be, or is currently being performed.”); All State Boiler Work, Inc., 1997 WL 724545, at 2 (Conn. Super. Ct. Mar. 7, 1997) (“1 although All State’s schedule appeared to be in CPM/PERT format, the critical path was not clear, it contained several logic errors, task interdependencies were hard to follow, and no float was shown.”).
20. See, e.g., Wickwire, et al., supra note 1; Barry B. Bramble & Michael T. Callahan, Construction Delay Claims § 11.08 (4th ed. 2011) (“Traditionally, the most favored method for measuring delay is the Time Impact Analysis (TIA). The TIA has collected by far the most recommendations and endorsements from courts and industry commentators. It appears the choice of delay measurement method should be TIA, unless other circumstances prevent its implementation.”); Evan M. Barba, Prospective and Retrospective Time Impact Analysis, Constr. Brieﬁngs No. 2005-7, July 2005 (identifying the difference between prospective and retrospective time impact analyses); Dale & D’Onofrio, supra note 3, ch. 7 (identifying the difference versions of time impact analysis, including the difference between prospective and retrospective time impact analyses).
22. See, e.g., Dale & D’Onofrio, supra note 3, ch. 7.
23. Because prospective analyses use more current information, without the benefit of hindsight or “Monday morning quarterbacking,” prospective time impact analyses performed after the fact may be susceptible to more skepticism if used in court. See, e.g., In re Appeal of Jimenez, Inc., VABC No. 6351, 02-2 B.C.A. (CCH) ¶ 32019 (Sept. 24, 2002) (“Appellant seeks to have us rely on its CPM expert, and his newly created CPM analysis, which was prepared during litigation. Not surprisingly, this CPM showed VA-caused delays to the AHU accounting for the entire delay through 1999. Such self-serving analyses, created after project completion and which make adjustments to attain new and revised projected schedules, depending on theoretical contingencies, are of limited value.”).
24. Construction Law, ch. 6 ¶ 6.02 (Steven G.M. Stein, ed. 2018).
27. With the exception of early completion schedules, as addressed above.
28. See, e.g., Appeal of J.W. Bateson Co., Inc., ASBCA No. 27491, 84-3 B.C.A. (CCH) ¶ 17566 (Aug. 3, 1984) (a constrained schedule such as an early completion schedule reduces float, thereby exaggerating the impact of delay, whereas schedules that are not as aggressive would tend to excuse or absorb more delays).
31. This is particularly important if the schedule is cost-loaded and/or being paid off of the schedule progress.
32. See White Buffalo Constr., Inc. v. United States, 101 Fed. Cl. 1, 14 (2011) (held contractor’s submission of deficient preconstruction schedules, which should have included narratives and other specifications, was material breach because such “documents were so central to the contract”).
34. Id.
35. See Wickwire, et al., supra note 1, § 10.05; see, e.g., Fortec Constructors v. United States, 8 Cl. Ct. 490, 505 (1985); PCL Constr. Serv., Inc. v. United States, 47 Fed. Cl. 745, 779 (2000); Blinderman Constr. Co., Inc. v. United States, 39 Fed. Cl. 529, 585 (1997); see also Dale & D’Onofrio, supra note 3, at ch. 2.
36. In re Whitesell-Green, Inc., ASBCA No. 53938, 06-2 B.C.A. (CCH) ¶ 33,323 (2006) (finding that where the government had abandoned use of the schedule for determining time extensions, the government had not presented credible evidence to establish concurrent delay); see also Dale & D’Onofrio, supra note 3, at ch. 2.
39. Id. § 15-121.
40. R. Lowe & M. D’Onofrio presentation.
42. See R. Lowe et al., A Comparison of Location-Based Scheduling with the Traditional Critical Path Method, Presentation to the American College of Construction Lawyers (2012).
43. See Dale & D’Onofrio, supra note 3, at ch. 14.
44. See Bruner & O’Connor supra note 38, § 18.17; see also In re Whitesell-Green, Inc., ASBCA No. 53938, 06-2 B.C.A. (CCH) ¶ 33,323 (2006) (finding government had abandoned use of CPM schedule for determining time extensions, and therefore could not require such schedule from contractor later in the project).
45. See Bruner & O’Connor supra note 38, § 18.17.
47. See, e.g., Dale & D’Onofrio, supra note 3, § 14.4, secs. 3 and 4.
48. Id.
49. See id. §14.4, secs.
50. See generally Richard H. Lowe, Evans M. Barba &
law and educate them about the many opportunities available to them through the Forum. This subcommittee is responsible for identifying opportunities for current diverse Forum members to participate in law school outreach visits at law schools throughout the country.

Finally, in an effort to raise the profile of the Forum by making other organizations aware of the Forum’s diversity activities and commitment to diversity, the Diversity Committee has appointed liaisons to several other organizations, both within the larger ABA and outside of the ABA. Deb Martin serves as the Forum’s liaison to the ABA Commission on Women in the Profession, John Vento serves as the Forum’s liaison to the ABA Commission on Hispanic Legal Rights and Responsibilities, Jessica Bogo serves as the Forum’s liaison to the ABA Commission on Sexual Orientation and Gender Identity, and Belinda Bacon serves as the Forum’s liaison to the ABA Commission on Disability Rights. In addition, Emily Anderson was recently appointed as the Forum’s liaison to the National Association of Women Lawyers, and Kendall Woods was recently appointed as the Forum’s liaison to the National LGBT Bar Association.

I hope you will join me in thanking these individuals for their leadership in the Diversity Committee’s efforts to promote diversity and inclusion in the Forum.
Follow the Money: Interpretation and Evaluation in a Forensic Schedule Analysis

By Wendy Kennedy Venoit and Kenji Hoshino

In a construction dispute related to schedule delay and disruption, the testimony of an expert in Forensic Scheduling Analysis (or FSA) is offered to “assist the trier of fact to understand the evidence and to determine a fact in issue” with opinions on the quantum and effect of delay, the nature of delay, the identification of factual causation of delay, and the relevance of these findings in relation to the claim at issue. In federal court, Rule 702 of the Federal Rules of Evidence sets forth three conditions that must be fulfilled for an expert opinion to be admissible, and those three requirements neatly correspond with the three main phases of Forensic Schedule Analysis:

Graphic 1

FRE Rule 702
1. “the testimony [must be] based upon sufficient facts or data,”
2. “the testimony [must be] the product of reliable principles and methods,”
3. “the witness [must have] applied the principles and methods reliably to the fact of the case.”

This article will discuss the third phase of Forensic Schedule Analysis in the context Rule 702, which requires that the witness has applied the principles and methods reliably to the facts of the case. As with any other technical analysis, the results of an FSA do not, in-and-of themselves, demonstrate root causation or responsibility for delays. Rather, they must be interpreted and evaluated by the expert and then possibly subjected to same by other experts before they can be used by the trier of fact to arrive at a verdict. The testimony of an FSA expert consists of opinions on the (a) quantum of delay, the (b) proximate cause of delay, the (c) nature and effect of delay, and the (d) relevance of these findings in relation to monetary claims. There are other opinions expressed by the expert but they are either collateral to the core opinions or those arising from expertise beyond purely forensic scheduling.

Quantum of Delay

At its simplest, delay can be defined as the later-than-anticipated completion of an activity or a collection of activities. The late completion can be caused by a later-than-anticipated start, a longer-than-anticipated duration, or an interruption to work after the start. Therefore, the quantum of delay is a measure of variance of the actual completion against an anticipated completion.

Table 1

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<th>Months</th>
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<td>As-Built with Delay</td>
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In casual use, even among FSA practitioners, both the “cause” and the “effect” in the diagram above are called “delay.” But thorough understanding of the subject requires that the two conditions be clearly distinguished. AACE International Recommended Practice No. 29R-03\(^2\) (AACE Recommended Practice) refers to the cause-delay as an activity-level variance (ALV), and the effect-delay as a project-level variance (PLV).

The illustration below expands the level of detail of the first diagram to that showing the individual activities forming the summary project bars.

You can see that PLV is the net, overall effect of the ALV (or the aggregation of ALVs if there were multiple
Activity-level variances are the result of one or a combination of two types of activity-states: (1) waiting in readiness prior to the start of the activity for an occurrence of a necessary event, cessation of a hindrance or receipt of necessary information; and/or (2) work duration that is longer than planned or expected due to some reason (e.g., extended continuous work duration, intermittent progress, suspension of work). These are the mechanical conditions of the delay. The proximate causes are the apparent reasons for those mechanical conditions. They precede the delay (usually immediately) or simultaneously occur during the delay.

The proximate causes, more often than not, do not appear as discrete activities on the schedule. While the reason for an ALV may not be apparent, a properly stated schedule will show the symptoms. On the other hand, if regular schedule updating practices include the insertion of “fragments” (also known as time impact analysis) into the schedule you can expect to see the alleged proximate causes explicitly in the schedule. If the proximate causes are not apparent, they must be identified using witness interviews and project documents and data other than the project schedules.

### Chain of Causation / Knock-On Delays

In researching, evaluating, and modeling the cause-and-effect relationships, the analyst must recognize that these relationships are often successively linked into a chain of alternating causes and effects. A useful work product of researching these successive cause-effect relationships is a detailed chronology tracing the proximate cause back to the root cause. Delays resulting from this causal chain reaction are sometimes referred to as knock-on delays. Knock-on delays may be best described by way of an example. Assume the contractor is installing an offshore platform and the first activity in the installation sequence is the driving of piles into the seabed to support the platform. If the piling activity is impacted, the successor activities cannot begin or proceed as planned. Thus, there is a knock-on delay to the successor activities which would typically be included in an extension of time analysis. If those successor activities are on the critical path, the contractor would typically be entitled to an extension of time based on the knock-on delay to the successor activities.

Now, using this same example, assume that because of the afore-described delays the work is pushed into the winter months (whereas it was originally contemplated to be concluded prior to the adverse weather months) and the work is further delayed as a result because there are now fewer “good weather” days in which to perform the work. Generally, such weather delays would also be included in any extension of time analysis. But what if the vessel that was to support the successor activities—now pushed into the winter months—has to leave the project because the weather risk is too great or its charter has ended? Let us assume that contractor must scramble to identify a new vessel or to suspend the offshore works until the spring, and in the interim, no work is being performed. This too would be a knock-on delay or consequence to the original owner-caused delay and should, therefore, be included in the extension of time analysis. The Owner might argue that the contractor has not done everything possible to secure a new vessel, or to extend the charter of the original vessel, but those are just factors to be considered and would not necessarily preclude the contractor’s recovery of an extension of time for these knock-on delays.

In the above scenario, the contractor would likely claim for not only the original delay (to the piling operation) but also the delay to the successor activities, the weather...
there are some contract clauses which can preclude a contractor from recovering money and/or time for delays caused by certain types of events. One such clause is the so-called force majeure clause, which is intended to address the circumstance where a delay event occurs that is outside the reasonable contemplation of the parties at the time of contracting. There is no generic force majeure clause, as even industry form contracts differ greatly in their wording, particularly in their description of what constitutes a “force majeure event,” although a common thread in all force majeure clauses is the requirement that the event be outside the control of either party, sometimes rising to the level of an “act of God.” Indeed, in many cases the force majeure clause is specifically drafted to address the particular geographical, climactic, political, economic, and social circumstances surrounding the construction project. For example, in some areas of the world, a hurricane or tornado would be characterized as a force majeure event, whereas in other areas of the world, where such natural conditions are relatively more commonplace, the contractor will be deemed to have anticipated such conditions and, as a result, such conditions will be excluded from the definition of force majeure. Another example is in respect of labor strikes—in some areas of the world, labor strikes are relatively uncommon and/or so severe in their impact that they will be specifically included in the definition of force majeure, whereas in others, labor strikes are not considered to be force majeure events at all. The language of the force majeure clause must, therefore, be closely read to determine whether the delaying event will constitute a force majeure event or not.

There are also delaying events, such as weather, that may receive specific treatment in the contract depending on the location and type of project. For example, a project in the North Sea might very well include an adverse weather risk provision to allow the contractor a time extension, and potentially compensation as well, when adverse weather (perhaps defined by wave height or wind speed) exceeds a threshold amount for a particular number of days and impacts the critical path of the project (or of that particular contractor’s scope of work). When such a provision is used, however, it is important that it be geared to quantifiable and reliable data available to all parties during the course of the project.

Nature and Effect of Delay
When the project is scheduled using critical-path method or “CPM” scheduling, the schedule typically identifies as critical the work that is on the longest path of the schedule’s network of work activities. The performance of noncritical work can be delayed for a certain amount of time without affecting the timing of project completion. The amount of time that the noncritical work can be delayed before delaying completion is the “float” or “slack” time. In order for a delay to have any impact to the overall project completion, it must be on the critical path. The AACE Recommended Practice is clear on this point:

In order for a claimant to be entitled to an extension of contract time for a delay event (and further to be considered compensable), the delay must affect the critical path. This is because before a party is entitled to time-related compensation for damages it must show that it was actually damaged. Because conventionally a contractor’s delay damages are a function of the overall duration of the project, there must be an increase in the duration of the project.3

As discussed earlier, the project-level variance (PLV) is the overall project delay caused by the activity level variances. But more accurately, PLV is the net, overall effect of the aggregation of critical ALV’s after taking into account network float. A graphic illustration is in order:

Table 3

<table>
<thead>
<tr>
<th>Activity Level Variance (ALV)</th>
<th>Project Level Variance (PLV)</th>
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<tr>
<td>E</td>
<td>Non-critical</td>
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<tr>
<td>Activity  “B”</td>
<td>As-Built with Delay</td>
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<td>Months</td>
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In this illustration, activity “B” is on the critical path, and a one-month long activity-level variance to “B” (shown as a dark grey bar to the right of activity “B”) is critical and translates as a one-month PLV. The delay to activity “E” (shown as a light grey bar to the right of activity “E”) is not on the critical path and hence does not add to the one-day PLV.

Be aware that it is not uncommon to find more than one path that is simultaneously critical in a schedule. The other important thing to keep in mind is that with the issuance of
schedule updates the critical path may change. The critical path and float values of uncompleted work activities in CPM schedules change over time as a function of the progress (or lack of progress) on the critical and noncritical work paths in the schedule network. Only project circumstances that delay work that is critical when the circumstances occur extend the overall project. Thus, when quantifying actual project delay, the accuracy in quantification is increased when the impacts of potential causes of delay are evaluated within the context of the schedule in effect at the time when the impacts happen. Therefore, if contemporaneous schedule updates exist, they ought to be used in the FSA. If contemporaneous updates exist but not utilized in the FSA context, there should be a very compelling reason. At the very least, they should be examined and considered, even if they are not directly used for the analysis.

Delay to noncritical activities, is by technical definition, consumption of float. Float consumption and ownership can be relevant where issues involve disruption, loss of productivity, and constructive acceleration regardless of the criticality of the activity. When float exists in a project schedule (as it typically will), an excusable delay will first erode the float before resulting in a critical path impact to the project. Where the float exceeds the delay, there will be no schedule impact at all, although the contractor might still experience severe or even devastating financial consequences from the event.

### Table 4

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<th>Months</th>
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A prudent Owner (or upstream contractor defending a delay claim) will argue that the float in the schedule belongs to the Project and that the contractor is not entitled to an extension of time or to any costs associated with the delay event to the extent that the delay is merely consuming the float that exists in the schedule. Conversely, the contractor pursuing a delay claim will argue that the float belongs to the contractor and that the contractor should retain the benefit of the float in the schedule, such that the Owner should not be excused from giving an extension of time or paying delay damages.

Absent an express provision in the contract designating ownership of float, the general rule is that any float that exists in the schedule belongs to the project and not to the owner or contractor individually. In such a case float must be shared in the interest of the project rather than to the sole benefit of one of the parties to the contract. Stated more practically, and more bluntly, when the float belongs to the project rather than to a particular party, the party who gets to it first gets the benefit of the float. Thus, in the scenario put forward above, the owner would likely prevail in the argument that the contractor’s entitlement to an extension of time will be limited to the actual impact to the project once all float in the impacted activity or activities is consumed. This will severely limit if not preclude the contractor from recovering so-called delay damages. However, the contractor has some chance of recovering damages if it can show that (i) at the time it entered the contract, it planned to complete the works prior to the contract completion date, (ii) the Owner was aware of the contractor’s intention to complete the works early; and (iii) that intention was realistic and achievable but for the Owner’s delay.

Of course, the contractor’s inability to obtain an extension of time commensurate with the duration of the delaying event will not necessarily preclude the contractor from recovering direct damages resulting from such event. Indeed, if the contractor has suffered direct damages due to the event that the contractor would not have incurred absent the event (for example, additional material, equipment, transportation or labor costs), those damages are likely still recoverable by the contractor because such damages are not avoided or mitigated by the consumption of float. What the contractor would have difficulty recovering, however, would be any extended overheads or similar damages that are consequential to a delay to the overall project schedule.

As with the identification of the critical path, if validated contemporaneous updates exist, the relative float values for activities in those updates are considered more reliable compared to the relative float values in the baseline for those same activities.

Another related, but separate concept, is that of “pacing” (or “slow walking”). Pacing in general terms is the circumstance where a contractor, faced with noncontractor-caused delay to the critical path activities, decides to slow down (i.e., pace) certain parallel, noncritical activities so that they continue concurrently with the delayed activity.

The argument is that there is no point in the contractor progressing its work at the original pace because the project will not complete any sooner. In many cases, there is a rational reason for pacing the progress of the nonimpacted activities to the progress of the impacted activities—such as when both activities require the same equipment, labor, or supervision—and an argument can be made by the contractor that it is attempting to mitigate damages by doing so. Of course, in some cases,
pacing is simply used by the contractor as an excuse for why certain activities are not progressing according to the schedule and not as a legitimate project management strategy.

The result, in either circumstance, is an as-built schedule that makes it appear that the contractor would have been delayed irrespective of any owner-caused delay because the nonimpacted activities were completed shortly before (or even at the same time as) the delayed activities. This allows the owner to argue that the excusable and nonexcusable delays were concurrent and that the contractor is not entitled to money. Whether the trier of fact accepts the contractor’s argument will largely depend on whether the contractor can justify its actions, the credibility of the witnesses putting forward the argument, and whether the contractor has documented its decision to pace its work, as opposed to arguing pacing as an after-the-fact excuse for failing to progress non-impacted activities. The egregiousness or severity of the delaying event will likely also affect the credibility of a pacing argument, because the more severe or devastating the owner-caused delay, the more likely a trier of fact will be to sympathize with the contractor’s plight in overcoming the delay and mitigating its losses.

**Noncritical Delays**

While delays must typically be considered critical for the purpose of justifying a time extension and delay damages, noncritical delays can also lead to damages when the delay has disrupted the contractor’s work in an unavoidable and measurable way. Whereas delay is typically measured in terms of an impact to the critical path, disruption is typically measured in terms of loss of productivity and increased labor and equipment costs. Disruption can also refer to delays that do not impact the critical path (and therefore do not lead to an extension of time), but nonetheless cause the contractor to incur additional costs. The Society of Construction Law Delay and Disruption Protocol defines disruption as a:

*Disturbance, hindrance or interruption of a Contractor’s normal work progress, resulting in lower efficiency or lower productivity than would otherwise be achieved. Disruption does not necessarily result in a Delay to progress or Delay to Completion.*

In some cases, the contract will give the contractor an express right to compensation for disruptions (e.g., for a change in law). In most cases, however, the contractor must establish that the owner caused or is otherwise responsible for the disruption and that the owner has therefore breached the contract by either disrupting the work or by failing to compensate the contractor for the disruption to the work. For example, the contractor may claim that the owner has breached the term generally written (or implied) in construction contracts that the owner will not prevent or hinder the contractor in the execution of its work.

Of course, the contractor must not only establish the disruption, but that it has been impacted by such disruption and the extent of the impact. In other words, the typical cause and effect relationship must be established. Common results of disruption include: out of sequence work; concurrent or overlapping performance of work activities; stacking of trades or work area congestion; the need to bring on additional labor and supervision; and extended work days and/or multiple shifts. Because many of these consequences can also result from the contractor’s own actions or inactions, such as poor site management, the contractor must typically establish that it was itself free of fault, or apportion the consequences between owner-caused disruption and causes attributable to the contractor.

**Near-Critical Delays**

Near-critical delays have the greatest potential of becoming concurrent delays. This is because a near-critical delay, upon consumption of relative float against the critical path delay, will become critical. Take for example the seemingly obvious statement that there is no concurrency between a compensable delay that impacted the critical path and a noncompensable delay that did not. That statement is true only to the extent that there is enough float on the path occupied by the noncompensable delay to keep that path as noncritical in the absence of the compensable delay. For this reason, the near-critical delays are the most likely suspects of concurrency and must be analyzed for partial concurrency to the extent that the net effect of that delay may exceed such relative float.

The purpose of identifying the near-critical path is to reduce the effort of analyzing potential concurrent delays. A rational system of identifying all activities and delays that are near-critical is the first step in objectively streamlining the process of evaluating the schedule for concurrent delays. Thus, if the analyst chooses to analyze all delays and activities on a network, the quantification
of near-critical is unnecessary. But in most cases, analyzing all activities, especially on large complex schedules, is excessively time consuming and unnecessary.

The determination of whether an activity is “near critical” depends on at least four factors. First, the duration of delays modeled in the analysis is directly proportional to the impact such delays have on the underlying network and hence the calculation of float. This is because insertion or extraction of delays affects the CPM calculations of a network model. For example, assume a noncritical path carrying a float value of 30 days. If one were to insert a delay that is 30 days long into this path, that delay will become critical assuming everything else remains the same. The practical effect is that the greater the duration of the delay events used in the model the greater the number of activities that must be considered near-critical and subjected to concurrency evaluation. Under this criterion, the most obvious way of minimizing the number of near-critical activities is to minimize the duration of the delay events. That is, a delay event of relatively long duration can be segmented into smaller sub-events for analysis and documentation. While ensuring a finer granularity of delay events gives rise to added work in modeling and documenting those delay events, the trade-off is a lesser number of activities to analyze for concurrency.

The second factor in determining whether an activity is near critical is the duration of each analysis interval. The duration of the analysis interval is the length of time from the start of the segment of analysis to the end of that segment. For example, in methods using monthly schedule updates, the analysis interval would be one month. The underlying concept is the fact that the maximum potential change in the critical path due to progress slippage during the analysis interval is equal to the duration of that interval. Thus, if the interval is one month, the maximum slippage that can occur, excluding nonprogress revisions and delay insertions, is one month. Hence, near-criticality threshold would be set by adding 30 calendar days to the float value of the critical path.

Thirdly, the rate at which float is being consumed in each analysis interval on a given activity-chain should be considered. The rate of consumption should be no more than the duration of the analysis interval per interval. Thus, where the interval is one month, if an activity chain is outside the near-critical threshold but is consuming more than 30 calendar days of float per month in the past updates, the trend indicates that it would become near-critical in the next period. Therefore, it should be considered near-critical even though it carries more relative float than the duration of the interval.

The last factor in determining whether an activity is near critical is the amount of time or work remaining on the schedule. As the project approaches completion, CPM may not be the best tool to assess criticality. This is true especially in a problem project where many activities are being performed out-of-sequence in an attempt to meet an aggressive deadline. Even on a normal project, as the work transitions from final finishes to punch list work, CPM updates may be abandoned in favor of a list or matrix format of work scheduling. It is often said that near the end “everything is critical.” Reduced to an equation, the percentage of activities remaining on the network that should be considered near-critical is proportional to the degree of completion of the schedule. Therefore, after 90 to 95 percent of the base scope and change order work are complete, the analyst may want to consider all activities on the schedule as near-critical regardless of float.

It is impossible for the analyst to completely know what the final critical path is until all of the delays have been factored in. Suffice to say that it is not necessary to analyze all activities that are not on the critical path. But also, it is good practice to analyze the near-critical path in addition to the critical ones. The expertise lies in knowing how to strike the optimum balance.

**Exclusive vs. Concurrent**

Generally speaking, when otherwise compensable delays overlap with noncompensable delays, or are so entwined with noncompensable delays that they cannot be reasonably separated or apportioned, neither the Owner nor the contractor will be entitled to compensation. That is, of course, the general rule, but an experienced practitioner and/or expert should not stop there and should look at ways to separate the compensable from the noncompensable delay. For example, it should first be confirmed whether the delays are truly concurrent—did they occur at the same time and did they both impact the critical path?

The first diagram below shows a condition where the delays are literally concurrent, that is, happening at the same time, during period number 8.

The next diagram shows a condition of functional concurrency. That is, even though they occurred during separate period, one in month 7 and the other in month 8, the two delays concurrently affect the overall critical path.
In both of the immediately preceding examples, the delays are concurrent when considered from the standpoint of “effect” or, to use the distinction we established earlier in this article, from the standpoint of a project-level variance or “PLV.” However, each delay does not exclusively impact the completion date, and each delay does not meet the ‘but-for’ test. From the standpoint of activity-level variance or “ALV,” only the first case is truly concurrent. Thus, if the project timeline can be broken into separate analysis periods and the compensable delay and noncompensable delays can be shown to have impacted different periods, they may not be deemed concurrent under the literal/ALV philosophy. But suppose the events that occurred in months 7 and 8 were merged into one analysis period. The fact that the artificial act of simply merging separate analysis periods into one may change the character of concurrency underscores the volatile sensitivity of concurrency analysis.

Be advised that the law surrounding the concept of concurrent delay is unsettled. It deserves a more comprehensive discussion than just a summary. The article “Judicial Approaches to Concurrent Delay” by John Livengood and Daniel Brennan, in this same edition of *The Construction Lawyer*, is an excellent discussion on this important subject. Readers may also want to refer to AACE Recommended Practice Section 4.2.

### Table 7

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Relevance of the Findings in Relation to Monetary Claims: “Follow the Money”

The relevance of the opinions, and hence their “helpfulness” to the finder of fact, is best achieved by relating the findings to the monetary claims. Arguably the most important segue from forensic schedule analysis to monetary damages is the determination on whether the delay is compensable or noncompensable, as not every delay can or will lead to the recovery of monetary damages. Generally speaking, a compensable delay is one in which the claimant is entitled to compensation (sometimes in form of delay damages), whereas an excusable, noncompensable delay will lead to an extension of time but no additional compensation.

Another important bridge between delay and damages is the connection between schedule disruption and loss of productivity claims. This is often accompanied by allegations of constructive acceleration which requires specific findings by the expert.

### Compensable vs. Noncompensable vs. Excusable Delays

Excusability exists where there is contractual or equitable justification in a claimant’s request for a contract time extension for relief from potential claims for liquidated/stipulated or actual delay damages. The showing of excusability does not necessarily mean that the claimant is also entitled to compensation for the delay. Conversely, delay is nonexcusable when such justification does not exist. Compensability or compensable delay exists where the claimant is entitled to recover not only a time extension but compensation for expenses associated with the extension of completion date or the prolongation of the duration of work. Excusability is a prerequisite to compensability. Therefore, where compensability can be established, excusability is assumed.

In the absence of any contractual language or other agreements, the conventional rule governing compensability is that the claimant must first account for concurrent delays in quantifying the delay duration to which compensation applies. That is, a contractor is barred from recovering delay damages to the extent that concurrent contractor-caused delays offset owner-caused delays, and an owner is barred from recovery liquidated/stipulated or actual delay damages to the extent that concurrent owner-caused delays offset contractor-caused delays.

The evaluation proceeds in two distinct steps. First, the responsibility for each delay event is individually analyzed. The classification is made primarily according to the responsibility for the proximate cause, the root cause and the contractual risk allocation of the delay event. The second step consists of evaluating whether each delay event is concurrent with other types of delays to arrive at the final conclusion of excusability, compensability, or nonexcusability. As evident from the list of existing definitions, the current, common usage of the terms compensable, excusable, and nonexcusable is confusing because analysts often use those terms to characterize the assignment of liability performed in the first step. For the purpose of this article, the delays identified in the first step will be classified as contractor delay, owner delay, or force majeure delay.

As is often the case, when the forensic schedule analyst does not possess adequate information or expertise to make an independent determination of responsibility (legal, contractual, or technical) for the delay, the analyst will have to proceed with the analysis based on an assumption. Such assumptions should be noted and clearly stated...
as part of the final analysis product along with the basis of such assumption.

A contractor delay is any delay event caused by the contractor or the risk of which has been assigned solely to the contractor. If the contractor delay is on the critical path, in the absence of other types of concurrent delays, the contractor is granted neither an extension of contract time nor additional compensation for delay related damages. Such a delay may expose the contractor to a claim for damages from the owner.

An owner delay is any delay event caused by the owner, or the risk of which has been assigned solely to the owner. If the owner delay is on the critical path, in the absence of other types of concurrent delays, the contractor is granted both an extension of contract time and additional compensation for delay related damages.

A force majeure delay is any delay event caused by something or someone other than the owner (including its agents), or the contractor (or its agents), or the risk of which has not been assigned solely to the owner or the contractor. If the force majeure delay is on the critical path, the contractor is granted an extension of contract time but does not receive additional compensation for delay related damages even if there is a concurrent delay. If the proximate cause is a force majeure event (as defined in the contract), the parties are relieved of performing any obligations impacted by the force majeure event. Thus, for example, if a force majeure event prevents a contractor from completing its work for one week, and assuming no knock-on or consequential delays, the contractor will be excused from that one week of delay. That is not to suggest, however, that the contractor will be entitled to a one-week extension of the completion date as a result of that one-week excusable delay. Generally speaking, to obtain an extension of the completion date, the one-week excusable delay must have impacted the critical path. If the delay did not impact the critical path, the contractor would (typically) not be entitled to any extension of the completion date.

The foregoing then leads to the question of compensability for the force majeure event. Simply because a delay is excusable does not necessarily make it compensable. Indeed, many force majeure clauses will specifically state that force majeure-caused delays are not compensable to the contractor. Of course, not every force majeure clause makes force majeure-caused delays noncompensable. To the contrary, some contracts specifically allow for the contractor to recover monetary damages for force majeure-caused delays. So, again, the language of the contract is critical to the determination of compensability.

After responsibility is determined in the first step, the second step requires a determination of concurrency. The various permutations of concurrency scenarios are summarized below in the “Net Effect Matrix.”

### Net Affect Matrix – Concurrent Delay

There are two alternatives if there are more than two parties among which the delay must be apportioned depending on whether the additional parties are distinct signatories to the subject contract or whether the parties are agents and therefore subsumed under the two primary parties. Under the first alternative, there would be another factor added to the above matrix, but the principle used to derive the net effect would be the same. Namely, in order to be entitled to compensation, the party must not have caused or otherwise be held accountable for any concurrent delay and concurrent force majeure delays. Under the second alternative involving agents to the two primary parties such as subcontractors, suppliers, architects, and construction management firms, the net affect equation should be solved first between the two primary parties. This is followed by a subsidiary analysis apportioning the quantified delay allocation established by the first analysis.

Note that the terms compensable, excusable, and nonexcusable in current industry usage are from the viewpoint of the contractor. That is, a delay that is deemed compensable is compensable to the contractor but nonexcusable to the owner. Conversely, a nonexcusable delay is a compensable delay to the owner since it results in the collection of liquidated/stipulated damages. A neutral perspective on the usage of the terms often aids understanding of the parity and symmetry of the concepts. Thus entitlement to compensability, whether it applies to the contractor or the owner, requires that the party seeking compensation shows a lack of concurrency. But for entitlement to excusability

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<td>Comparable to Contractor, Non-Excusable to Owner</td>
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<td>Contractor Delay</td>
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<td>Owner Delay</td>
<td>Force Majeure Delay</td>
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</tr>
<tr>
<td>Contractor Delay</td>
<td>Another Contractor Delay or Nothing</td>
<td>Non-Excusable to Contractor, Compensable to Owner</td>
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<td>Force Majeure Delay</td>
<td>Another Force Majeure Delay or Nothing</td>
<td>Excusable but Not Compensable to Both Parties</td>
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without compensation, whether it applies to the contractor or the owner, it only requires that the party seeking excusability show that a delay by the other party impacted the critical path.

Based on this symmetry, contractor entitlement to a time extension does not automatically entitle the contractor to delay compensation. The contractor would first have to show that an owner delay impacted the critical path, and then if the owner defends alleging concurrent delay, the contractor would have to show the absence of concurrent delays caused by a contractor delay or a force majeure delay in order to be entitled to compensation. A single contractor delay concurrent with many owner delays would negate the contractor’s entitlement to delay compensation. Similarly, one owner delay concurrent with many contractor delays would negate the owner’s entitlement to delay compensation, including liquidated/stipulated damages. Although in such extreme cases the rule seems draconian, it is a symmetrical rule that applies to both the owner and the contractor and hence ultimately equitable.

**Delayed Completion vs. Prolongation**

In a typical compensable delay claim, the prolongation of the overall project duration is required in addition to a delay to the date of completion. This is because most compensable delay claims relate to the cost of extended duration of a construction project. Therefore, if the delayed completion is just a function of a delay to the start of the project, there is no case for project extension costs, assuming the planned duration and the actual duration is equal and assuming the management costs do not start until the start of construction. Claims for extended overhead are typically made by the contractor.

Delay claims from a subcontractor to the general contractor may not require the prolongation of the overall project nor the delayed completion of the overall project. The test is whether the subcontractor’s scope of work, which is a subset of the overall project duration, was prolonged. There is not even a requirement that that the subcontractor’s scope of work be on the critical path of the overall schedule.

Prolongation of the overall project duration may not be a requirement if the claim is for missed opportunity or other costs arising from delayed completion beyond some key date or period. Delay claims of this nature are typically made by the owner, for example, damages for missed contractual commitment for tenant occupancy. Owner-claims for liquidated damages fall in this category.

**No Damages for Delay Clause**

Some contracts preclude the recovery of monetary damages for delay. Any experienced construction contractor or practitioner will be familiar with the so-called “no damages for delay” clause that has, for years now, been commonplace in many construction contracts. While such a clause can take many forms, an example taken from a case that appeared before the U.S. Court of Federal Claims is set out below for illustrative purposes:

Any delays or additional work entailed as a result of weather conditions, storms, acts of God, delay in construction, delays by governmental bodies will not entitle [C]ontractor to any extras whatsoever.12

Such a clause, if read literally, precludes a contractor from recovery any monetary damages—whether direct or indirect—caused by a delay to the contractor’s work. These so-called “no damages for delay” clauses have been subject to much judicial and legislative scrutiny over the years, with many courts and legislatures declaring them to be unenforceable, particularly with respect to public works contracts.13 However, in most jurisdictions, in the absence of bad faith, active interference or other unconscionable conduct on the party seeking to enforce the clause, such clauses will be upheld and enforced if they are clear and unambiguous and if the delay was within the reasonable contemplation of the parties at the time of contracting (as opposed to a delay which amounts to a cardinal change to the contract). Accordingly, in most cases, a clear and unambiguous no damages for delay clause will preclude the recovery of monetary damages, particularly with respect to private construction projects.

**Delay Mitigation and Acceleration Leading to Disruption**

There is an implied (and oftentimes express) duty in every contract to mitigate losses. This duty to mitigate applies to both parties to the contract. In the context of delays, the Contractor has a duty to mitigate not only the delay, actual or predicted, but any losses associated with such delays, to the extent the Contractor intends to pursue either an extension of time or additional compensation for such delays. If possible, mitigation is first attempted using measures that involve little or no additional expense. These efforts are usually associated temporary enhancement of management and supervision and changes in preferential logic so as to perform the work in a shorter timeframe.

When a contractor attempts to mitigate or recover from an owner-caused delay, the cost of doing so is typically to the owner’s account (in the absence of a no-damages-for-delay clause). So, for example, if the contractor’s work is impacted by two months due to an owner-caused delay, but through resequencing or bringing on additional manpower, the contractor is able to reduce that two-month impact to one month, the contractor will generally be entitled to recover the cost of such resequencing and additional manpower (subject, of course, to reasonableness and other considerations inherent in any damages analysis). The contractor’s extension of time will, of course, be limited to the one-month net impact, taking into account the contractor’s mitigation effort.

In some cases, the contractor’s mitigation effort will actually increase losses, rather than reduce them. Generally speaking, if the mitigation was undertaken in good faith and the efforts made were reasonable under the circumstances, the contractor will be entitled to recover the full cost of its mitigation efforts even if they did not actually mitigate the losses that would otherwise have been incurred. Of course, it will be the contractor’s burden to prove that the efforts
undertaken were reasonable under the circumstances and were not undertaken in an effort to drive up costs or profits to the contractor.

When a critical-path delay occurs on a project, irrespective of which entity is at fault, the owner (or upstream contractor) may demand that the contractor accelerate its works to make up for the delay and allow for on-time completion of the project. This often leads to disruption costs. The causative link between a delay and disruption costs is diagrammed below.

A construction delay creates the need for a time extension. But the time extension is not available due to the owner’s denial of the time extension request or due to an impracticability of an extension. In response the contractor undertakes various acceleration measures. The measures usually involve the engagement of some additional resources to perform the planned scope of work in a shorter time span of time than planned. These increased resources fall into the following major categories: (1) increased management resources; (2) increased equipment usage; (3) increased material supply; and (4) increased labor. In the United States, the greatest cost associated with acceleration is usually increased labor. Since the amount of actual work remains unchanged in most acceleration efforts (assuming the planned scope of work has not increased), the increase in labor cost is a result of a decrease in labor productivity or the increase in the amount of overtime labor. Decreased labor productivity is caused by disruption to the planned sequence and pace of the labor. The greater the disruption to the work the greater the inefficiency. Disruption can be the result of having more people working in the planned area during a specific time, or loss of productivity associated with individual workers working more hours per unit of output than planned.

**Directed Acceleration**

Where the owner’s demand to accelerate to recover from an owner-caused delay is explicit, it is a clear case of directed acceleration. Unless barred by contract, directed acceleration is always compensable to the contractor, although the parties may disagree on quantum. This is true regardless of whether the contractor is accelerating to overcome an owner-caused delay, or to recover from a force majeure event.

When the acceleration is required to make up for an Owner-caused delay or an excusable delay (i.e., one for which the contractor is not responsible), the contractor’s entitlement to its acceleration costs is fairly certain. In fact, in some cases, the contract itself will define such acceleration as a change or variation for which the contractor is entitled to an adjustment of the contract price. Conversely, where the acceleration is required to make up for a contractor-caused (or “nonexcusable”) delay, the cost of acceleration will generally be to the contractor’s account. In fact, many contracts expressly require the contractor to develop an “recovery” schedule whenever there is a nonexcusable delay so as to ensure completion by the contract completion date.

**Constructive Acceleration**

The situation is less straight forward, however, when the owner refuses to recognize an excusable delay to the work, or where the contractor disputes its own responsibility for delay. In the former case, the owner may insist that the contractor accelerate, or it may take less overt action, such as insisting that the contractor comply with its obligations under the contract but without expressly stating that the contractor should accelerate for fear that if it does so it may be viewed as issuing an instruction or a variation to the contract and open itself up to liability to the contractor. More commonly, however, the owner will simply threaten the assessment of liquidated damages if the contractor fails to complete the contract on time. The threat of significant liquidated damages can be sufficient incentive for the contractor to accelerate on its own, even without an express directive from the owner. These circumstances, where the owner fails to recognize an excusable delay for which the contractor should be given an extension of time, are commonly referred to as “constructive acceleration” because the instruction to accelerate is implied rather than express. Constructive acceleration is an accepted cause of action in many (if not all) U.S. jurisdictions, as well as many jurisdictions elsewhere in the world. Notably, it is not a recognized concept under English law.14

A contractor wishing to preserve its rights to pursue a claim for constructive acceleration should ensure documentation for its efforts to accelerate are not voluntary and to so notify the owner. This is particularly important in the absence of any directive from the owner to accelerate. By providing this notice to the owner, the contractor limits the owner’s ability to later claim that it was unaware of the contractor’s intent or that the contractor might later pursue a claim for such constructive acceleration.

**Acceleration of Noncritical Activities**

In the case of acceleration, constructive acceleration, and delay mitigation, affected activities are usually on the
projected critical path; thus, the objective of most acceleration or mitigation is to recover from anticipated delay to project completion. However, acceleration, constructive acceleration, and mitigation can occur with regard to activities that are not on the critical path. For example, an owner might insist that a certain portion of the work be made available prior to the scheduled date for completion of that activity. The contractor may mitigate noncritical delay by re-sequencing a series of noncritical activities to increase the available float.

**Schedule Recovery**

Contractor efforts undertaken during the course of the project to recover from its own delays to activities are generally not considered acceleration, but are instead referred to as “recovery.” The contractor must be careful in claiming mitigation that it would have had to undertake in any event irrespective of the owner-caused delay. For example, if the contractor suffered its own delays or inefficiencies that were not attributable to the owner, it should be mindful to allocate its mitigation between such nonexcusable delays/inefficiencies and the excusable delays/inefficiencies that are to the owner’s account. If the two are too intertwined or inseparable, the owner will have a powerful argument that the mitigation would have been required in any event and, therefore, should not be compensable.

Recovery of delay can also be an important tool in establishing entitlement to an extension of time for an owner-caused delay that follows a contractor-caused delay. The contractor may mitigate noncritical delay by re-sequencing a series of noncritical activities to increase the available float. Finally, there are circumstances in which acceleration measures are used in an attempt to complete the project earlier than planned. Those circumstances include voluntary acceleration in which the contractor implements the plan on its own initiative in the hope of earning an early completion bonus. If the sole motivation is the early completion bonus, the case is clear that there is no entitlement to recovery of acceleration costs. The case becomes murkier when the attempt to recover from earlier delays coexist with the desire to complete the project early as shown in the diagram above.

Disaggregation of effects of each contributing cause in such a case cannot rely solely on project schedule and forensic schedule analysis. The analyst will have to investigate the state of mind of decision makers, which may turn on contemporaneous notice, the soundness of project controls, and other project management practices.

**Early-Completion Efforts**

Endnotes

1. Fed. R. Evid. 702. While the Federal Rules of Evidence do not apply in cases that proceed in state court, many states have adopted rules of evidence that are similar in substance to Rule 702 of the Federal Rules of Evidence.


3. Id. § 1.5(B)(6).

4. See Soc’y of Constr. Law, Delay and Disruption Protocol (Oct. 2002) [hereinafter SCL Delay and Disruption Protocol] (“Unless there is express provision to the contrary in the contract, where there is remaining float in the programme at the time of an Employer Risk Event, an EOT should only be granted to the extent that the Employer Delay is predicted to reduce to below zero the total float on the activity paths affected by the Employer Delay.”).

5. See id. at 6–7.

6. Id. at 9, 55.


8. Note that the forensic scheduling analyst may not possess the skill, knowledge, or experience to independently determine the legal liability for an event. In such a case, the first step consists of making a reasoned assumption of liability subject to verification by those with the requisite expertise.

9. The SCL Delay and Disruption Protocol calls this a contractor...
risk event, which is defined as an event or cause of delay that under the contract is at the risk and responsibility of the contractor. SCL also calls it a noncompensable event.

10. The SCL Delay and Disruption Protocol calls this an employer risk event, which is defined as an event or cause of delay that under the contract is at the risk and responsibility of the employer (owner). The SCL Delay and Disruption Protocol also calls it a compensable event.

11. Especially in the absence of contractual provisions to the contrary. For example, depending on the contract language and applicable law, the applicable tests for the recovery of actual delay damages may be different from that applicable to the owner’s right to liquidated/stipulated damages.

13. CAL. PUB. CONT. CODE § 7102; Colo. Rev. Stat. § 24-91-103.5; Kan Stat. Ann. § 16-1907; Minn. Stat. § 15.411; Mo. Rev. Stat. § 34.058; N.J. Rev. Stat. § 2A:58B-3; Ohio Rev. Code §§ 4113.62(C)(1), (2); Va. Code § 2.2-4335(A). This list is by no means exhaustive or intended to represent the current state of the law in any of the states listed. The reader should check the current state of the law in each jurisdiction before making any assumptions as to the enforceability of a no damages for delay clause in a given state.
14. SCL Delay and Disruption Protocol, supra note 4, at 53.
Approaches to Concurrent Delay
By John Livengood and Daniel S. Brennan

Concurrent delay is one of the most important and most poorly understood concepts in the field of forensic schedule delay. While there are many definitions, concurrent delay is essentially defined as two delays occurring at the same time that are the legal responsibility of different parties, each of which, independent of the other, delay the completion of the project. Yet the formal definitions of concurrent delay do not always help clarify the terms as reflected in the following quotes from the U.S. Court of Federal Claims and the Veterans Administration Board of Contract Appeals, respectively:

"The exact definition of concurrent delay is not readily apparent from its use in contract law, although it is a term which has both temporal and causation aspects. Concurrent delays affect the same “delay period.”"1

"Where the delay is prompted by inextricably intertwined concurrent Government and contractor causes, the delay is not compensable nor are liquidated damages assessable."2

At its most basic, concurrent delay has five main characteristics: (1) two or more delays that are unrelated and independent; (2) each of which would have delayed the project even if the other delay did not exist; (3) the delays are the contractual responsibility of different parties, but one may be a force majeure event; (4) the delay must be involuntary; and (5) the delayed work must be substantial and not easily curable.

Effective and Independent
The threshold issue in concurrent delay requires that there be two separate causes of the delay that are effective and independent, whether they are delays to a single activity or a delay to separate activities. If the causes of the delay are the same, then the examination of the court is focused on the responsibility for that causative event.4 Commentators often list the requirement of independence of cause as one of the first requirements of concurrency. The Association for the Advancement of Cost Engineering International Inc. (AACE) in their Recommended Practice on Forensic Schedule Analysis (AACE RP29R-03 2011) states in relation to the independence of the alleged delay events:

"Concurrent delays occur when two or more unrelated and independent events delay the project. When two or more parties contribute to a single delay to the project and the causation is linked or related, the event is not considered to have two concurrent causes."5

Court and Board decisions make it clear that the delays have to be along the critical path, specifically, they have to create a delay to the completion date. For example, in Appeal of Santa Fe, Inc., the Veterans Administration Board of Contract Appeals found the claimed concurrent delays were not on the critical path because they did not extend the completion of the project:

"In terms of the concurrent delay rule, the concurrent delay must pertain to activities whose completion was critical to the completion of the project itself. … Relief from the imposition of liquidated damages must depend upon showing concurrent delay in respect to activities on the critical path."6

Figure 1—Concurrent Delay

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Commentators agree with the requirement that concurrent delays must fall on the critical path and delay completion of the project. These concepts are really the same thing, since any delay along the critical path will automatically create a delay to the project completion.

Simultaneity
The question of simultaneity presents itself in two major ways. First is the issue of the cause and effect, since the cause of the delay is often separated in time from the effect. Secondly, do the delay events occur at exactly the same time? Commentators have noted the courts inability to clearly distinguish “causal” concurrency and “time-of-occurrence” concurrency. The inability of courts to consistently apply concurrency theory is a testament of its technical and legal complexity:

[It must be noted that [courts and Boards] have the unfortunate tendency to use the term concurrent to describe both time-of-occurrence and true causal concurrency. Indeed, this mixed use of the term seems to have misled some [courts and Boards] into giving incorrect definitions of concurrency.]

Yet, distinguishing sequential from simultaneous delays has occasionally been specifically addressed by the courts. These courts have come to the conclusion that CPM analysis can distinguish between simultaneous and nonsimultaneous, and that the delays should not be treated as anything but separate delays. In R.P. Wallace, Inc. v. United States, the court defined “sequential delays” as two or more different delays occurring over time, not necessarily connected or in exact sequence. The court then proceeded to discuss the evolution of how sequential delays should be evaluated for purposes of assessing liquidated damages. The court opted for an approach that allocated responsibility for such delays. For those delays for which the contractor was responsible, the government was entitled to assess liquidated damages. In parallel, though not discussed in the case, the contractor would be entitled to delay damages for that period of time which could be allocated to the Government’s responsibility.

The case of Fischbach & Moore International Corp. is often cited for the proposition that nonsimultaneous delays along the critical path can create concurrency. Yet, in that case there was no late completion due to recovery efforts of the prime contractor. Thus, the court was not being asked to consider the application of liquidated damages as is usual in concurrency cases. Instead, the court was only considering the amount of delay caused by the government prior to the contractor’s subsequent acceleration so that the contractor could recover delay damages. Nevertheless, the court concluded that sequential delays of the government reduced the alleged concurrency stating:

With regard to the alleged intertwining of Government-caused and concurrent delays in this case, we have found, in the critical path analysis offered by appellant, a ready and reasonable basis for segregating the delays. If the delays can be segregated, responsibility therefor [sic] may be allocated to the parties. . . . As will be seen in the discussion that follows, we have no such difficulty in [segregating delays in] the present case.

Therefore, the court found that sequential delays, alleged to be concurrent and critical, were not, and could be subject to apportionment. In courts in the United States, the typical method of dispensing with the concept of nonsimultaneous delays is to look to the CPM delay analysis presented at trial. For example, in Tyger Construction Co. v. United States, the U.S. Court of Federal Claims was able to dissect the events on the project and allocate delays as identified by the contractor’s expert, rather than use the method proposed by the government’s expert.

Literal and Functional Simultaneity
While many U.S. cases have addressed the issue of simultaneity through a detailed review of the CPM schedule and a detailed chronology, no court has yet considered the issue of “literal” and “functional” concurrency:

Under the Literal Theory [of concurrency], the delays have to be literally concurrent in time, as in ‘happening at the same time.’ In contrast, under the Functional Theory, the delays need to be occurring within the same analysis period.

In the literal theory, if the delays do not start at the same time, they are not concurrent. Under the literal theory, the first delay to commence creates float in the entire network, so the subsequent delay is by definition not on the critical path and does not therefore delay the project completion. Of some interest is that the Society of Construction Law’s Delay and Disruption Protocol, Second Edition (2017) has specifically adopted the concept of literal concurrency without using that name. They acknowledge that courts in the U.K. have not yet followed this advice. While exact simultaneity is impossible, a more rational approach is to recognize that virtually all CPM schedules use the day as the smallest unit of time, so delays starting on the same day, regardless of what time

Figure 2 – Literal Concurrency

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in that day they started, are considered simultaneous.\(^{20}\)

In contrast, the concept of functional concurrency recognizes that even as exact a tool as a CPM schedule, with its date-specific activity durations and detailed mathematical calculations, often cannot measure delay with sufficient precision to pinpoint the commencement of certain impact events. Courts have never addressed this issue of exact simultaneity of delays but have generally taken the view that modern CPM analysis techniques can distinguish critical from noncritical delays as discussed below. Courts have, however, upon occasion addressed these concerns with oblique and not fully satisfactory words:

The suggestion of two concurrent delays to the critical path flies in the face of the critical path concept. Logically there cannot be two concurrent delays on the critical path because there is but one critical path at any one point in time, running in sequence from one critical path to another . . . \(^{21}\)

While this quotation might seem to support the “literal” concurrency theory, it reflects a poor understanding of CPM. As with many cases involving CPM, the court in this case did not quite get it right.\(^{22}\) Most CPM commentators recognize that there can be multiple critical paths on a project, each completely valid. Optimistically, the court in this case recognizes that exactitude in identifying concurrency is essential.

The functional theory takes the more practical, if potentially less accurate, position that concurrency should be measured based on the forensic measurement periods. If the two delays start within the same time evaluative time period (usually an update period), then they should be considered concurrent. This has the practical efficiency of treating potentially concurrent delays in the same manner as nonconcurrent delays for the purpose of evaluation and analysis. It also reflects the inherent imperfection of event measurement.\(^{23}\)

On the issue of simultaneity of the concurrent delays, the courts say it is not required, but seldom actually find nonsimultaneous concurrent delays. Rather courts almost always apportion the delays based on detailed schedule analysis and assign delays to the responsible party. Only when insufficient evidence is presented do they conclude that they cannot apportion and fall back on the old rule on nonapportionment. There are no clear court decisions where they discuss the issue of literal or functional concurrency. There is a decided tendency by courts to prefer apportionment in order to distinguish what might otherwise be considered nonsimultaneous delays.

Three Different Judicial Approaches to Concurrency

The greatest difficulty in discussing the law as it concerns concurrency is that there is little consistency in how courts have approached the issue:

While courts uniformly seem to agree upon the basic rules of concurrency, the uneven application of these rules to recurring fact patterns has given rise to inconsistent precedent and a lack of predictable guidance for parties seeking to avoid future disputes.\(^{24}\)

This uncertainty of application is reflected in other commentator’s observations,\(^{25}\) and in the courts themselves, one of which observed that concurrency is “at best murky and confusing.”\(^{26}\) A recent major case that cogently summarized the current status of delay analysis and the law states:

The exact definition of concurrent delay is not readily apparent from its use in contract law, although it is a term which has both temporal and causation aspects. Concurrent delays affect the same “delay period.”\(^{27}\)

The identification of different evaluative theories in concurrency is made more difficult and complicated because the term apportionment is used in two separate ways. First, it can be used to describe the process where the court looks at the detailed factual basis, particularly a forensic CPM delay analysis, and concludes that the events are not actually concurrent—i.e., that the events do not both fall on the critical path.\(^{28}\) Since there is wide body of court decisions following this line of reasoning and using the term apportionment, this meaning is used here in this article.

Second, apportionment is also sometimes used in some cases to allocate the delays based on the significance of each of the concurrent events on the project as a whole. This article uses the term “jury verdict” to describe this process. The distinction between these understandings is often confused.\(^{29}\) First, the historical record of the facts and basis of previous court decisions is not as clear as might be liked. Second, admonitions by courts that allocation is not preferred (though they use the word allocation in reference to what we are calling the jury verdict method) is often directly contradicted by a process that parses the delays based on a fact-based CPM analysis—namely, allocation.\(^{30}\) Third, CPM experts almost always discuss concurrency, but this discussion is more often incorrect and confusing than it is helpful.\(^{31}\)
There seems to be three major applications of concurrency present in court decisions over the past decades. These different approaches reflect both the historical inability to segregate delays as well as the more modern theories of analysis. The three approaches, all currently used in U.S. courts, are: (1) Intertwined Delays; (2) Apportionment of Delays; and (3) Jury Verdict Method of Delay Segregation.

**Intertwined Delays**
The earliest decisions expressing an understanding of concurrency in the United States are coincidental with the growth of contract law that emanated from the U.S. Civil War in the latter half of the nineteenth century. In *Stewart v. Ketetas*, the court found that the delays occasioned by the owner and the contractor prevented either the owner or the contractor from recovery of damages. Half a century later, in *Shook v. Dozier*, the court summarized the then-current law as:

Courts cannot know of these conditions as they actually existed at the time, and the evidence would be very unsatisfactory, taken months after, that would attempt to set forth all such conditions. Therefore, courts have laid down the very salutary rule to the effect that they will not attempt to apportion delays where the causes have been mutual, but will refuse under such circumstances to enforce the penalty.

The reluctance on the part of the courts to dissect the factual intricacies associated with concurrent delay continued into the twentieth century. As one court bluntly stated: “[T]he court will not undertake to apportion responsibility for the delays.” Even on the eve of the application of modern CPM analysis developed in the 1950s, many courts were following this hands-off attitude:

Plaintiff has not separated these delays from that charged the defendant, and, on this record the Commissioner has been unable to do so. Since . . . we cannot say he was wrong, we must apply the rule that there can be no recovery where the defendant’s delay is concurrent or intertwined with other delays.

More recent cases have continued this line of thinking. In *Coffey Construction Company*, the Board of Contract Appeals undertook its own evaluation of the delays because it found the expert’s presentations of schedule analysis unreliable. Despite finding the contractor’s delays were on the critical path, while the governments’ were not, the Board found:

[The] delays to the project as a whole were inextricably intertwined and were caused jointly and concurrently by both parties. It is evident that substantial completion of the project as a whole could not have occurred without the completion of all three of those activities.

This line of cases is based on the absence of proof as to causation of the delay, an inability to separate owner-caused delays from contractor-caused delays, and a reluctance to speculate as to relative culpability and segregate the delays. This approach is still good law where it is impossible to parse the concurrent delays; however, because of the greater sophistication of forensic schedule delay analysis in the past twenty-five years, this reasoning has given way to a more modern approach.

**Apportionment of Delays**
Apportionment of delays is the primary analytical approach for determining the outcome of concurrent delay issues. As discussed above, some recent cases, such as *Commerce Intern Co. v. U.S.*, seem to follow the intertwined delay approach and have used that rationale only because the court found the evidence of a more nuanced segregation impossible. In recent years, most courts have found repeatedly that claims of concurrency, when examined in the harsh light of factual chronologies and detailed CPM analyses, do not show one single overall concurrent delay, but rather show critical and noncritical delays. Consider the following quote from the *Commerce Intern* case:

Appellant cannot successfully urge, as it apparently seeks to do, that because critical Contractor caused delays were concurrent with noncritical Government delays... the imposition of liquidated damages may be avoided. Relief from the imposition of liquidated damages must depend upon a showing of concurrent delay in respect to the activities on the critical path.

This position has been adopted in most recent cases. Nevertheless, the courts have continued to struggle with the apparent inconsistencies among intertwined delays, apportionment, and jury verdicts. The best current explanation of this test is reflected in *George Sollitt Construction Co. v. United States*:

If the evidence shows that the contractor, along with the government, caused concurrent delay to the critical path of a project, the contractor must apportion the delays affecting the completion of the project to be able to recover delay damages. Because concurrent delays which do not affect the critical path of contract work do not delay project completion, an accurate critical path analysis is essential to the determination of whether concurrent delays have caused delay damages related to the delayed completion of a complex construction project. If government-caused delays did not
interfere with the project’s critical path, no costs related to delayed completion of the project are owed to the contractor. To recover for the delayed completion of the project, not only must plaintiff disentangle its delays from those allegedly caused by the government, but the delays must have affected activities on the critical path.42

Despite a minor muddle associated with the concept of concurrent delays not being on the critical path, the thrust of the opinion in George Sollitt Construction Co. is well within mainstream thinking on concurrent delay and the preference for allocating responsibility based on a detailed chronology and forensic schedule delay analysis.43

**The Jury Verdict Method of Delay Segregation**

The jury verdict approach to concurrency allocates the delays based on the significance of each of the concurrent events on the project as a whole and does not use a detailed chronology or schedule delay analysis in making such an allocation. This approach has two prerequisites. First, there must be two genuinely concurrent delays, ones that occur at the same time, and both must delay the completion of the project and are thus both on the critical path. In this situation, the detailed factual and CPM analysis, if they exist, cannot segregate the delays into separate responsibilities for the parties. Second, the court must find that there is some basis for parsing the delay and damages associated therewith based on the significance of each of the concurrent events on the project as a whole. There are relatively few cases addressing this position clearly. For example, in PLC Construction Services, Inc. v. United States, the court said:

[The rule against jury verdicts] is an old one whose underlying policies do not remain in in full force. One of the dominant reasons underlying it is the early judicial hostility to the use of privately agreed upon contractual remedies. . . . Today, given the complexity of contractual relationships, liquidated damage provisions have obtained firm judicial and legislative support. As long as the owner’s own delay is not incurred in bad faith, it is not unjust to allow proportional fault to govern recovery. Generally, owners do not benefit from delays that they incur. Another reason cited in support of the rule is that proving [jury verdicts] is simply too difficult. We do not disagree with the difficulty of the task, but recovery should not be barred in every case by a rule of law that precludes examination of the evidence.44

Despite the language seeming to support the idea of the jury verdict method of delay segregation, this court found no need to apply that method. The court concluded that there was sufficient information to allocate responsibility based on the factual evidence, and they did not resort to segregating the delays based on an “estimated allocation.”

The case of Fischbach & Moore International Corp., is also cited for the proposition that concurrent delays on the critical path, even if not able to be apportioned based on their factual basis and delay analysis, can be segregated in the manner of a jury verdict: “[I]f there is no basis in the record on which to make a precise allocation of responsibility, an estimated [jury verdict] may be made in the nature of a jury verdict. . . .”45 In that case, however, the court was able to allocate the delays based on a detailed chronology and forensic CPM schedule analysis. Again there was no need to resort to an “estimated allocation.” The dicta expressed in the court’s opinion has found favor with commentators.46 Thus, some modern courts recognize a jury verdict method of segregating responsibility, and thus delay, even when there is true concurrent delay that cannot be parsed based on the facts and delay analysis. Yet the cases that actually render a decision on that basis are extremely rare. In the case of Raymond Constructors of Africa, Ltd v. United States, the court was unable to quantify the causation of three recognized impacts to the critical path: (1) the contractor’s late procurement; (2) the owner’s responsibility for the late local delivery of equipment; and, (3) poor productivity by the contractor, even with the substandard equipment. As a result, the court made its own estimated apportionment of responsibility in the manor of the jury verdict method:

Actually, there is no basis in the record on which a precise allocation of responsibility for the overall delay in completing the work under the contract can be made as between the defendant’s delay in procuring equipment . . . [the government’s] delay in transporting equipment. . . to the job site, and the subcontractor’s shortcomings. In such a situation, it seems that the only feasible thing to do is to make a finding in the nature of a jury verdict that the defendant’s delay . . . was responsible for one-third of the overall delay in the completion of the work under the contract and, hence, for one-third of the extra indirect expenses. . . .47

Cases like Raymond are rare, and most cases in the United States today decide delay in the situation of alleged concurrency using the allocation method, premised on the facts and a detailed forensic schedule delay analysis.

**Other Issues on Concurrency**

There are several additional peculiarities associated with United States law regarding concurrent delay, including the burden of proof, the standard of proof, constructive acceleration, the role of excusable delay, and the monetary approach or cost-based allocation of concurrency.

**Burden of Proof**

It is well understood that U.S. courts have established
that the contractor, when seeking relief, bears the responsibility of proving the extent of delays and of relating the delays to specific actions by the government. Furthermore, the contractor also bears the burden of separating and apportioning delays, and for determining the existence or nonexistence of concurrency. Thus, the standards of burden of proof for concurrency seemingly deviate from the traditional views of burden of proof. Under normal burden of proof rules, the contractor asserting a delay would have to establish that the owner was responsible for delay:

It is well established that in order to recover for alleged compensable delay a contractor must demonstrate that delay was caused by the Government and, with a reasonable degree of accuracy, the extent of such compensable delay.

Under typical burden of proof rules, the owner would then establish, as an affirmative defense, that the delay was concurrent with contractor delays. Nevertheless, at least within the confines of government contracting, the contractor must establish that the government was responsible for the delay and that the claimed government delay was not concurrent with any contractor delay.

Under typical rules, the government may meet its initial burden by showing the contract performance requirements were not substantially completed by the contract completion date and the period for which the assessment was made was proper. Once the government satisfies its initial burden, the burden of going forward shifts to the contractor to show that the delays were excusable and that [the contractor] should be relieved of all or part of the assessment.

The requirement that the contractor claiming a delay must show there was no concurrent delay by the owner to obtain a contract extension has now become black-letter law. As stated in Arntz Contracting Co., Beacon Construction Co., K.A. Construction Co., and Teaco, Inc., A Joint Venture:

[Even assuming a government caused delay, in order for [the contractor] to prevail on this issue, it must demonstrate that any such government caused delays were not concurrent (i.e., offsetting) or intertwined with other delays, for which the government was not responsible. Thus, a contractor asserting a delay claim against the government must prove not only that it incurred additional costs making up its claim, but also that such costs would not have been incurred but for some government action.]

Standard of Proof

U.S. courts seem to have a lower standard of proof for delay than for the quantum of proof for delay damages. This is a logical extension of the tradition of concurrent delay as applied in the United States. Thus, to establish entitlement to a time extension, the contractor need only prove that concurrent delays resulted in a specific delay to project completion. In order to recover delay damages, the contractor must also prove that the owner’s delays were not on the critical path; that is, not concurrent. In Uitley-James, Inc., the Board concluded that: “A delay for which the Government is responsible is excusable by definition, and it may also be compensable.”

Constructive Acceleration and Concurrency

There is some discussion as to how the rules of concurrency function when associated with constructive acceleration. In the case of Hempliff Contracting Co., the Board found “a contractor cannot recover acceleration costs [incurred subsequent to and] flowing from concurrent delay, unless the record supports clear apportionment of delay and expense attributable to each party.” The case, however, did not apportion delay, largely because there was little or no evidence of a schedule delay analysis so the court was left to guess the critical path, which it refused to do. As a result, the Board defaulted to the nonapportionment (inextricably intertwined) rule and found the government and contractor delays concurrent. Essentially, this decision, and another concerning the interaction of concurrent delay and constructive acceleration, have left the analysis of concurrent delay untouched. Courts, if provided with sufficient data in the form of events and schedule delay analysis, will identify which delays were on the critical path, which delays were not, and award time and delay damages accordingly.

The Role of Excusable Delay

Courts have addressed the issue of a contractor-caused delay concurrent with excusable delays that are neither the owner’s nor contractor’s responsibility. Early U.S. decisions found that such delays were nonexcusable. However, more recent court decisions as well as commentators have found that such situations are deserving of a time extension.

Monetary Approach to Concurrency Evaluation

Some commentators have supported the idea of cost-based concurrency evaluation. There have been proposals by commentators for cost-based allocation of concurrency, although whether that distribution would occur before or after a finding of “true” concurrency is unclear. Under a cost-based theory, it would be the relative cost of the delays that would be weighed, rather than the time. The daily value of the liquidated damages would be evaluated against the proved contractor damages. As seen in the following quote from U.S. for Use and Benefit of Heller Elec. Co., Inc. v. William F. Klingensmith, Inc., this theory has received judicial recognition, although the policy has not been adopted by subsequent courts considering concurrency:

There is no doubt that if only one party had delayed, that party would have been liable to the other for
damages. In a case like this, where each party delays the other, it follows that each should be able to recover to the extent of the injury caused by the other’s delay. Such a rule protects each party from losses due to the delay of the other throughout the period of performance. It also induces each party to avoid imposing such losses on the other at any time during the period of performance. In contrast, a rule precluding a party from recovering damages for delay, once the party itself delays, would leave the parties to a contract unnecessarily vulnerable to delay by the other. We see no wisdom in, nor authority for, such a rule of preclusion. Therefore, when both parties to a contract breach their contractual obligations by delaying performance, a court must assess the losses attributable to each party’s delay and apportion damages accordingly (internal citations omitted). 67

In summary, concurrent delay theory, as espoused by the courts and boards, mandates that when two delays of roughly equal importance occur at the same time, one of which is the responsibility of the contractor and the other the owner, and both of which delay the completion of the project, an extension of time is granted for the period of delay, but no monetary damages are assessed. However, U.S. courts seem willing to examine the allegedly concurrent events in detail and if possible, allocate the delays to the appropriate party, thus eliminating or diminishing the period of concurrency. The courts sometimes state that a detailed segregation based on the relative merits of the delays is appropriate, but seldom actually do so. U.S. courts generally, however, allocate delay based on detailed factual and CPM analysis. It thus appears that the deciding factor in U.S. law is the quality of the proof in the detailed factual analysis and supporting schedule delay analysis.

Endnotes
5. AACE Int’l Recommended Practice No. 29R-03, supra note 3. See also BARRY B. BRAMBLE & MICHAEL T. CALLAHAN, CONSTRUCTION DELAY CLAIMS ¶ 1.01(D) (3d ed. 2010); MARK NAGATA, ET AL., CONSTRUCTION DELAYS 31 (2009); ANTHONY F. CALETKA & P. JOHN KEANE, DELAY ANALYSIS IN CONSTRUCTION CONTRACTS 93 (2009).
7. BRUNER & O’CONNOR ON CONSTRUCTION LAW, supra note 4, § 15:66 (stating: “Concurrent delay is the delay to

the critical path caused concurrently by multiple events not exclusively within the control of one party.”); AACE Recommended Practice, supra note 3, § 4.2.A. See also JON WICKWIRE ET AL., CONSTRUCTION SCHEDULING: PREPARATION, LIABILITY AND CLAIMS, § 9.08(G)(2) (2010).
10. BRAMBLE & CALLAHAN, supra note 5, § 11.09(A).
12. For an example of a case where the court was able to apportion alleged concurrent delays that occurred sequentially, see Essex Electro Engineers v. Danzig, 224 F.3d 1283, 1295 (Fed. Cir. 2000).
13. While the quality of such presentations is beyond the scope of this discussion, the author believes that much of the seeming inconsistency in how U.S. courts consider concurrency flows from the technical schedule delay presentations made by experts.
15. AACE Recommended Practice, supra note 3 § 4.2.D.1; see also Richard J. Long, Analysis of Concurrent Delay on Construction Claims (2013).
17. SOC’y OF CONS’T. LAW, SCL DELAY AND DISRUPTION PROTOCOL § 10.10 (2017).
18. Id.
25. See generally Finke, supra note 8; Long, supra note 15.
29. See the extensive discussion of this issue in WICKWIRE ET AL., supra note 7. See also BRAMBLE & CALLAHAN, supra note
5, § 1.01[D].
30. Sauer Inc. v. Danzig, 244 F.3d 1340 (Fed. Cir. 2000).
31. The experts are wrong at least 50 percent of the time—every losing side. However, because the reasoning associated with the winning side is often muddy or flawed, at least a substantial portion of the winning sides got concurrency wrong too—not a favorable record for schedule delay experts.
32. 36 N.Y. 388 (1867).
34. Greenfield Tap & Die Corp. v. United States., 68 Ct. Cl. 61 (1929).
39. 167 Ct. Cl. 529.
44. PLC Constr. Serv., Inc. v. United States, 53 Fed. Cl. 429, 484 (2002) (internal citations omitted). The authors have used the word “allocation” instead of the actual text “apportionment” to keep the meaning clear.
45. ASBC A 14216, 71-1 BCA ¶ 8775 at 59244.
46. Bramble & Callahan, supra note 5, § 11.09[B]; Wickwire et al., supra note 7, § 9.08[G].
51. It is interesting to note that in the cases of concurrent delay, the contractor need not show he would have finished on time but for the government’s delays. Utley James, Inc., GSBC A No. 5370, 85-1 BCA ¶ 17,816 (1994).
56. See generally Finke, supra note 8.
57. Aratz Contracting Co., et al., EBC A No. 187-12-81, 84-3 BCA ¶ 17,604 at 87,704.
58. Wickwire et al., supra note 7, § 9.08[G] (stating: “Neither the contractor nor the owner must satisfy the same standard for the recovery of damages as the standard required to avoid the application of delay damages through the obtaining of time extensions . . . With respect to the avoidance of delay damages either the contractor [or owner] need only show that the other party [or some excusable delay] was responsible for a concurrent critical path delay.”)
61. ENGBC A No 5698, 94-1 BCA ¶ 26,491 (1994).
64. Titian Pacific Constr. Corp., 87-1 BCA ¶ 19,626.
65. AACE Recommended Practice, supra note 3, fig.12 at 100.
Millennium Tower San Francisco: Untangling the Litigation Web

By Gregory LaHood

The Millennium Tower in San Francisco opened in April, 2009. The building offers a 20,000 sq. ft. “amenity complex” that includes a large fitness center, an indoor pool, and a wine cellar, among other things, and in 2012, *Worth Magazine* included it on its list of the world’s ten best residential buildings.1 While the building was still under construction, units were sold for an average price of almost US$2 million.4 Unfortunately for the buyers of these units, and unbeknownst to them, the tower had settled into the ground more than anticipated before construction was even completed.5 Moreover, the settlement has not been even, which has resulted in the building being tilted.4 The settlement has not stopped, and the building has become notorious as a flawed project. While the building is still inhabitable, concerns remain about its stability.9

Property values throughout San Francisco have skyrocketed in the past decade. One chart published by the Paragon Real Estate Group that reflects Case-Shiller data for “Bay Area High-Price-Tier Houses” indicates that values within this category of homes increased by 80 percent between 2012 and 2017.10 Unfortunately, the buyers of residential units in Millennium Tower did not receive the enviable luxury home or prime real estate investment for which they bargained. As the building’s settlement problem remains unresolved, many residents have begun to sell for a loss.11 A web of litigation has ensued, with fingers being pointed by everyone involved.12 This paper aims to unravel the web of litigation and determine who might ultimately bear the brunt of the liability, with particular emphasis on what remedies might be available through a recovery by which they bargained. As the building’s settlement problem remains uncovered.

The Project

Concerns regarding the unusually intense settlement of the tower arose as early as 2009, before any residents had actually moved into the building.14 Residents only were informed of the unintended tilting and sinking in May of 2016.15 The amount of settlement that was planned for in the design and construction phase of the project was a lifetime total of between four and twelve inches.16 and as of January of 2018, it had sunk seventeen inches.17 In addition to the sinking and tilting, the Millennium Tower HOA alleges there are signs of numerous other construction defects.18

The causes of the building’s structural defects have not yet been pinpointed, but a number of possibilities have been presented. Millennium Partners and its affiliates (Millennium Partners) have attempted to blame the tower’s unexpected sinking on soil settlement related to the extraction of ground water for the construction of the neighboring Transbay Transit Center.19 However, the Transbay Joint Powers Authorities (TJPA) and many others have suggested that the developer’s cost-saving measures are to blame (most notably, the use of concrete instead of steel and the decision to use a slab foundation with piles driven eighty to ninety feet into sandy soil rather than 200 feet to bedrock).20 Additionally, the tower made use of a new technology known as “BauGrid.”21 This received a lot of attention during the design stage, but it has not been discussed extensively in the aftermath of the building’s settlement being uncovered.

While in hindsight it is easy to criticize the Millennium Partners’ construction decisions, their choices were not in contrast to the San Francisco Building Code then in place.22 Nor were they contrary to the norms within the construction industry,23 though evidence has been presented that the Millennium Tower’s weight relative to other buildings that have successfully used a similar foundation design in San Francisco (the City) limits the value of comparisons to such norms.24 In any case, the City of San Francisco did not have adequate procedures in place to consider how the Millennium Tower’s weight might alter the equation.25

In an October 27, 2016, letter to Angus McCarthy, the president of the San Francisco Building Inspection

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Commission, the director of the San Francisco Department of Building Inspection (DBI) wrote that “DBI did not have the authority to require the developer to retain a geotechnical engineer as prescriptive code requirements – the design submitted for this project – did not require it...”26 The letter proceeds to note that DBI nonetheless succeeded in persuading the developer and engineer of record to put together a peer review panel “to review and approve the addenda produced by the developer’s retained licensed experts,” but it acknowledges that the engineer of record for the project “rejected DBI’s explicit request to fund the addition of a geotechnical engineer to this peer-review panel.”27

Given the potential absence of a thorough geotechnical review in the first place,28 this cost-cutting measure at the peer review stage is troubling. Indeed, in 2017, one of the two experts who comprised the panel acknowledged that a geotechnical expert should have been included.29 That the applicable building code governing the development of the Millennium Tower did not give the DBI authority to mandate peer review by a geotechnical engineer is astounding. It is apparent in hindsight that the DBI did not have adequate tools to prevent the construction of an unsafe structure.

There is additional evidence that the peer review process was flawed in other ways beyond the absence of a geotechnical review. Professor Jack Moehle lent support to the design’s compliance with building codes and the City’s issuance of a foundation permit,30 yet he indicated later that his review did not extend to the foundation.31 It is difficult to comprehend how someone could draw a conclusion about the acceptability of a foundation without actually reviewing it. Moehle has insisted that his letter expressing approval only asserted that the foundation complied with the code, not that it would be functional.32 However, even his ability to affirm the foundation’s compliance with the code without actually examining it is questionable. Given the City’s apparent reliance on his report,33 and its potential misunderstanding of the scope of his review,34 his seal of approval is an important piece of the puzzle.

Another significant factor in this case is the neighboring Transbay Transit Center. A lawyer for the Millennium Tower homeowners has asserted to the media that the commencement of construction on the Transbay Transit Center jumpstarted the tower’s settlement, which at that point had slowed considerably.34 Though people affiliated with the Millennium Tower project have alleged that the developers of the Transbay Transit Center pumped out an unreasonably large amount of water from the soil,35 the veracity of this claim is unascertainable. Potential problems regarding ground water extraction were anticipated by the TJPA, which is evidenced by its construction of a $58 million subsurface wall intended to minimize the extent to which groundwater was pulled from the area surrounding the Millennium Tower.36 Unfortunately, this wall was faulty and lawyers involved in the Millennium Tower litigation have alleged that the TJPA took measures to hide a breach that the San Francisco Public Utilities Commission suggests to be the cause of roughly 500,000 gallons of water being pulled out of the soil surrounding the Millennium Tower.37 The summary of the initial geotechnical report for the Millennium Tower noted the risk posed to surrounding buildings by dewatering during the construction process,38 and the geotechnical report for the Transbay Transit Center likely contained a similar warning. However, there is evidence of “aggressive dewatering” during the construction of the Millennium Tower as well,39 which potentially lessens the culpability of the TJPA.

This paper assumes that there is not one root cause of the Millennium Tower’s faulty foundation, but rather that all of the above contributed to the problem. Therefore, the question is not who should bear the blame for the problem (and be held liable for any necessary repairs), but rather, how liability might be distributed across the various parties involved.

**Establishing Liability**

There are a number of different parties from which the Millennium Tower HOA might be able to recover. Significantly, there is not a uniform standard of care that applies across the board. The HOA filed a suit in March 2017.40 Many other lawsuits also have been filed.41 This section will address some of the claims made in the HOA’s suit, as well as other legal arguments that the HOA might have grounds to make as it attempts to hold someone financially accountable for the Millennium Tower’s structural shortcomings.

**The Architect: Handel Architects**

The Millennium Tower HOA’s inclusion of Handel Architects (Handel) in its lawsuit is not a surprise given the centrality of the architectural design to the entire construction process. Unfortunately for the HOA, however, there are a number of factors that will make it difficult to get a judgment against Handel.

For starters, the standard of care against which architects and other design professionals are judged is skewed in favor of the professional. In the 1954 case *Gagné v. Bertran*, the California Supreme Court concisely stated the legal standard that applies to design professionals.42 The court wrote that experts “have a duty to exercise the ordinary skill and competence of members of their profession, and a failure to discharge that duty will subject them to liability for negligence. Those who hire such persons are not justified in expecting infallibility, but can expect only reasonable care and competence.”43 This interpretation was reiterated by the Court of Appeals of California two decades later in *Swett v. Gribaldo, Jones & Associates*.44 In assessing the liability of a soil engineering firm for damage to a newly-developed home, the court held that the firm could only be held liable on a negligence claim if it failed to meet professional standards for soil engineers, and not on the basis of strict liability.45 The standard embraced by the California courts has become widely accepted, prompting one architect to posit in a December 2017 column that, generally, “architects and engineers who do not violate the standard of professional care will not be held financially responsible...
in the absence of negligence, recklessness, or intentional misconduct.”47 The California Civil Jury Instructions for 2017 adopt a version of this standard as well,48 and the AIA began including a similar standard in their model documents beginning in 2007.49

The “SF Architects” website that is devoted to San Francisco architecture included Handel Architects as number two on its list of “The Best Multi-Family Housing Architects in San Francisco,” touting Handel’s work on the Millennium Tower in the description.50 The list does not include a date, but even if it pre-dated the public’s knowledge of the Millennium Tower’s problems, it is significant because it suggests that the architectural community was generally impressed with Handel’s work on the Millennium Tower project. While it is certainly possible that the HOA could nonetheless uncover evidence that Handel breached the standard of care, absent a “smoking gun,” Handel likely will have the support of other local architects. Therefore, while Handel’s reputation has been blemished as a function of its association with the Millennium Tower project, it is likely to fare well in an eventual settlement negotiation or trial.

The Engineering Defendants
The HOAs March 2017 lawsuit classifies DeSimone Consulting, Treadwell & Rollo, T&R Consolidates, and Langan (the firm that acquired Treadwell & Rollo) as the “Engineering Defendants.”51 The emphasis with regards to the Engineering Defendants has been largely on problems with the Millennium Tower’s foundation, with particular emphasis on the absence of piles driven to bedrock. In addition, there is evidence of problems with the building’s outriggers, which could make it more vulnerable to substantial damage during an earthquake.52 A local news station in San Francisco reported that DeSimone Consulting (DeSimone) brushed off concerns over the adopted outrigger system that were raised by Middlebrook + Louie, the peer review firm.53 While this problem does not seem to be directly related to the building’s substantial settlement, the evidence of how DeSimone dealt with a concern about something as major as the outriggers might be used as evidence about its general approach to problems during the design and construction phases.

Nonetheless, the Engineering Defendants are likely protected by the applicable standard of care. Like with architects, the common law standard of care for engineers is compliance with industry norms.54 In other words, like the architects, if the respective Engineering Defendants in this case are able to find experts in their fields who will testify that their work did not deviate from what other similarly situated professionals would have done under the circumstances, then they will likely escape liability under common law.

The Engineering Defendants might be able to bolster their defense on the basis of their contracts with Millennium Partners assuming their terms mirrored the standard form documents published by the Engineers Joint Contract Documents Committee. Section 6.01 of the Committee’s “Standard Form of Agreement Between Owner and Engineer for Professional Services” provides that:

The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with Engineer’s services.55

The italicized portion of the quoted contract provision would prove especially relevant in this case because, while standards have been adopted in response to the Millennium Tower incident, the form contract explicitly provides that the Engineering Defendants will be judged against the standard that was in place at the time they performed their work.

In hindsight, it seems as though DeSimone erred by not giving in to the request for a geotechnical engineer to be added to the peer review team, or by not mandating that piles be driven to bedrock. However, DeSimone was in compliance with the applicable building code when it elected not to include a geotechnical engineer on the peer review team,56 and driving piles to bedrock was not the norm in the area pre-Millennium Tower.57 The Millennium Tower residents might be frustrated by this layer of protection afforded to the Engineering Defendants given the apparent inadequacy of the standards in place at the time the Millennium Tower was constructed. Yet, their frustration is meaningless in the legal context unless it is paired with testimony from one or multiple experts in the relevant fields of engineering who are willing to testify that the Engineering Defendants did not meet the applicable standard of care. Even then, the outcome will likely be uncertain because the respective Engineering Defendants will almost certainly have experts of their own testifying that they did meet or exceed the applicable standard of care. The judge, arbitrator, or jury might have the chance to assess the respective credibility of disagreeing experts, but convincing anyone that a professional standard of care was breached when other professionals are still willing to defend the work will likely be an uphill battle for the Millennium Tower residents and the HOA.

Perhaps the most uncertainty with regards to the Engineering Defendants surrounds the geotechnical review because it is difficult to determine whether any geotechnical review that occurred during the design phase of the Millennium Tower project was sufficiently comprehensive. In a June 21, 2005 letter to Gary Ho at the DBI, a civil engineer with Treadwell and Rollo noted that the company had made “geotechnical recommendations” in a January 2005 report.58 This report was presumably the product of a geotechnical study, but the extent of that original study is not clear. Even if the original geotechnical study was sufficient, the letter suggests that perhaps the follow-up analysis assessing compliance with the original report was not. The representative
for Treadwell and Rollo affirmed that “the geotechnical aspects of the design are in general conformance with the intent of the geotechnical recommendations presented in our 13 January 2005 report.” However, this assertion was based on a review of the “geotechnical aspects” of just a handful of listed design documents. It might prove difficult for Treadwell & Rollo (or its successor in interest) to argue that neither its original geotechnical report nor its review of the design documents’ compliance with that report was inadequate.

A summary of the initial geotechnical report for the property notes that “[b]ecause of the composition of the subsurface material at the site, it is recommended that the building structure proposed for the site be supported by deep (driven piles) foundations.” While this is not an explicit recommendation that piles be driven to bedrock, the HOA might be able to find an expert from this field who could testify that the Engineering Defendants should have known, based on the evidence available to them during the design and construction processes (including this geotechnical report), that driving piles to bedrock was a necessity given the environment surrounding the Millennium Tower site. Indeed, one San Francisco geotechnical engineer said very matter-of-factly in an interview on 60 Minutes that “[f]or a big, heavy building, a concrete building, those foundations have to go deeper. For a building like this, they have to go to bedrock.” However, as argued above, even testimony from an expert that the Engineering Defendants breached the applicable standard might not be enough to expose them to liability so long as the respective Engineering Defendants are able to find professional peers who testify in defense of their work.

While the apparent disconnect between Treadwell & Rollo’s recommendations and the ultimate course of action that Treadwell and Rollo approved could open the door to liability, recovery against the firm would be complicated. The HOA’s lawsuit acknowledges that Treadwell & Rollo sold its assets to Langan Engineering and Environmental Services, Inc. and then dissolved. While the HOA named Langan as a defendant, alleging that the “asset transfer was a failure to provide sufficient peer review services,” the amount of attorney hours that would be spent attempting to unravel Treadwell & Rollo’s asset sale might make emphasis on its liability ill advised.

The Builder: Webcor Builders
There is a scarcity of any evidence suggesting that Webcor Builders (Webcor) deviated from the design documents. This is significant because it makes protection highly likely on the basis of United States v. Spearin, in which the United States Supreme Court essentially determined that a contractor has an implied warranty from a governmental owner that the design documents were accurate. In Coleman Engineering Co. v. North American Aviation, Inc., the California Supreme Court implicitly extended the doctrine in the context of bids to include contracts between private parties. Assuming the California Supreme Court’s broader application of Spearin that was implied in Coleman extends beyond recovery for low bids based on faulty documents and reaches the allocation of liability for flawed results when a project was built to specification, Spearin would be a powerful tool for Webcor to use as a shield. Absent evidence that Webcor deviated from the specifications it was provided, Millennium Partners, on the basis of Spearin, will likely be on the hook for any damages assessed against Webcor. This would likely delay the HOA’s collection of any judgments won against Webcor. Moreover, if Millennium Partners is able to prove that Webcor did deviate materially from the design documents, then the HOA’s recovery efforts would likely be limited to the extent of Webcor’s assets and insurance coverage.

The Spearin doctrine issue is intriguing because one defense that is technically available to the Millennium Partners is practically off limits. Courts have interpreted the Spearin doctrine to not protect contractors when they fail to bring “reasonably discoverable” issues with the design documents to the developer’s attention. Therefore, Millennium Partners could argue that Webcor should have concluded on the basis of the documents provided by Millennium Partners that the designated design would potentially result in above-average levels of settlement and tilting. However, this argument would essentially be an admission by Millennium Partners that its decisions regarding design and materials were primarily to blame for the Millennium Tower’s problems rather than other potential external causes like the neighboring Transbay Transit Center. Because of the ripple effects that this argument would have on other aspects of the litigation, it is unlikely. Therefore, the likelihood of the Spearin doctrine not protecting Webcor in this case is slim absent new evidence of the builder’s noncompliance with design documents.

The Peer Review Team: MiddleBrook + Louie and Professor Jack Moehle
The failure of the peer review process does not necessarily constitute a failure to provide sufficient peer review services, and thus the peer review parties might not bear any legal liability for the tower’s problems. Public records suggest that the peer review team was comprised of two individuals, Professor Jack Moehle from UC Berkeley, and Hardip Pannu who works for Middlebrook + Louie as a structural engineer. Representatives from the City have suggested that the City relied on the work of the peer reviewers, though the practice at the time Millennium Tower was constructed was for the team to be selected and paid by the developer and its team rather than the City. As a result, questions have been raised about why these particular parties were chosen to conduct the peer review and the process by which they were hired.

The first avenue through which the HOA might be able to recover on the basis of the peer review process is against DeSimone. DeSimone made the decision not to include a geotechnical engineer on the peer review team. Additionally, as discussed above, there is evidence that DeSimone
did not heed warnings from Hardip Pannu about the outrigger system adopted in the tower. Moreover, Supervisor Peskin has suggested that the process by which the peer reviewers were selected and the characterization that they were given may have been part of an effort to satisfy peer review requirements without actually being subject to the potential costs and delays that might come from a thorough peer review. If Peskin’s speculations can be adequately supported by evidence, then the HOA might have a reasonably strong claim against DeSimone. However, at the end of the day, the HOA would need to contend with the fact that the DBI was actively involved throughout the construction and peer review processes. While Peskin has implicitly suggested that the City was deceived, he has not come forward with evidence supporting any claims of misconduct against the peer reviewers.

With respect to the actual peer review team, the exposure of Moehle and Pannu, or Middlebrook + Louie (as Pannu’s employer), are minimal. While the misinterpretation of the scope of their work may have been partially a result of the way they presented their findings, there is no evidence of Moehle or Pannu ignoring evidence of faulty designs or construction. Indeed, the record contains evidence of the peer review process functioning as intended. Also significant is that the American Society of Civil Engineers suggests that standard practice is that “the scope of the peer review is specified by the organization’s manager or project team member who commissions the review.” Therefore, while the HOA might successfully argue that Millennium Partners or DeSimone were negligent in defining too narrow of a scope for their peer review panel and failing to hire a geotechnical expert to join the panel, an attempt to blame the panel for a faulty scope likely would be unsuccessful.

The City’s Board of Supervisors focused in on the fact that Moehle and Pannu had knowledge about a similar project that was shut down by the City because of concerns about the strength of its foundation, and noted that Moehle does not have plausible deniability because he was the head of the peer review team for that project. However, the fact of the matter is that the DBI nonetheless approved the Millennium Tower project and did not mandate a thorough below-ground peer review of the tower’s foundation. What was different about the Millennium Tower from the City’s perspective that prompted it to approve this project despite refusing to permit something similar nearby? It seems as though the City, Millennium Partners, and DeSimone are trying to make the peer reviewers scapegoats. The DBI knew that its request for a geotechnical expert to be added to the peer review panel had been denied by the developer, yet the DBI nonetheless accepted the panel’s approval of the building’s structural soundness and compliance with building codes with respect to the foundation. The City has since changed its policies regarding how peer review panels are selected and compensated, which change might offer an extra layer of protection to Moehle and Pannu because it represents acknowledgement by the City that its processes were flawed.

The American Society of Civil Engineers posited that, “To succeed, a peer review requires adequate resources, including budget, time, and effort.” Here, Millennium Partners failed to provide an adequate budget, and thus the peer review did not extend to the below-ground components of the building’s foundation. While homeowners might try to hold the peer review team liable, doing so will be a challenge given the substantial role of the developer and Engineering Defendants in the inadequacy of the peer review process.

The City of San Francisco
The City of San Francisco’s most direct exposure to liability would be through its DBI. One potential source of liability is the failures of the DBI with respect to the peer review process for the project. In a December 15, 2016 letter from DBI director Tom Hui to Aaron Peskin, a member of the City’s Board of Supervisors, Hui shared responses to a series of questions that Peskin previously had asked about the project. In response to a request for an explanation as to “[w]hy is there no letter confirming DBI engineer Hanson Tom directed or requested peer review panels in 2005–2006 . . . to include the Transbay Project in their review and analysis?”, Hui provided that “[a]ccording to DBI Principal Engineer Hanson Tom, 301 Mission pre-dated the Transbay Project by approximately five years and thus there was no Transbay Project yet to include in any of the 301 Mission peer review and analysis.” While this explanation seems plausible on the surface, the minutes from a February 2006 meeting that included representatives from the DBI, DeSimone, Millennium Partners, and Middlebrook + Louie among others (such as peer reviewer Jack Moehle), reflect that, while construction for the Transbay Transit Center had not yet begun, the peer review team and the DBI were on notice about the impending construction of that project adjacent to the Millennium Tower. Indeed, the minutes reflect that Gary Ho from the DBI “asked about effects of Transbay Terminal on the project,” and then Derrick Roorda of DeSimone and Steve Patterson of Millennium Partners-San Francisco “explained the status of negotiations with the Transbay Joint Power Authority” before Hanson Tom from DBI “indicated that it is not the responsibility of the design team or the peer reviewers to review this information.” That a decision was made not to review the potential effect of the Transbay project on the Millennium Tower is further affirmed by a series of letters dated in 2005 and 2006. In other words, the problem was not a lack of awareness about the Transbay Transit Center that was yet to begin construction (as Tom Hui suggested in 2016), but rather a decision to put on blinders with respect to the effect that the construction of the large, partially underground, structure might have on the foundation of the neighboring Millennium Tower.

However, the City’s role in the flawed project is not limited to the DBI. Indeed, there is evidence of potential corruption in the trail of documents surrounding the Millennium Tower’s approval process. Supervisor Peskin has acknowledged...
that the City played a role in the Millennium Tower disaster, noting in particular that the City approved a certificate of occupancy for the building despite being on notice about the sinking problem. Additionally, Peskin has suggested that there is evidence of the DBI’s engineer’s concerns being ignored and ultimately silenced when the building was still under construction, despite the City’s refusal to give the greenlight to a similar project nearby due to concerns about its expected ten inches of settlement.

The City’s defense efforts also might be challenged by evidence of extensive involvement of “permit accelerators” in the Millennium Tower project. In a September 20, 2016 letter to the director of the DBI, Aaron Peskin asked “[h]ow many permit expediters were involved with the 301 Mission project over the course of its vetting and approval process?” Additionally, Peskin has questioned the rationale behind the acceleration of the process for issuing a temporary occupancy permit. One local architect shared criticisms of the City’s laissez faire approach towards permit expediters with the Government Audit and Oversight Committee, noting that “[f]amiliarity and other methods used by expediters, plying the unlicensed and inappropriate employees reviewing plans in order to get a favorable interpretation, further erodes application of the codes and standards that matter to all of us.”

Representatives for the Millennium Tower homeowners have commended Peskin and the Government Audit and Oversight Committee for “[t]heir concerns to establish whether there was political pressure, or corruption involved in the approvals . . .” Any credible evidence of quid pro quo exchanges of expedited approvals for political support could be disastrous for the City’s leadership and might even motivate City officials to accept liability to some extent and settle with the HOA to avoid a scandal.

The public duty doctrine complicates any suit against the government or any government employees. The public duty doctrine has been interpreted extensively by courts. For example, in a 1990 case, the Washington State Supreme Court refused to hold a city liable for failing to detect building code violations during its building code approval process. The Court of Appeals of North Carolina took a similar stance in a 1995 case with similar facts. While California courts would not be bound by the cited cases from North Carolina or Washington, there is ample evidence California has adopted a similar interpretation of the public duty doctrine and related sovereign immunity.

Cal. Gov. Code § 818.4 provides:

A public entity is not liable for an injury caused by the issuance, denial, suspension or revocation of, or by the failure or refusal to issue, deny, suspend or revoke, any permit, license, certificate, approval, order, or similar authorization where the public entity or an employee of the public entity is authorized by enactment to determine whether or not such authorization should be issued, denied, suspended or revoked.

California courts have liberally interpreted this concept of sovereign immunity in the context of permit issuance. For example, in Thompson v. City of Lake Elsinore, the Fourth District Court of Appeals interpreted the California Court of Appeals’ opinion in Burns v. City Council to mean in part that “[E]ven if the entity or building inspector was negligent or erred in failing to issue the building permit, the immunity applied.” The court in Thompson pointed to numerous other California cases that have been interpreted similarly. Furthermore, in 2013, the California Court of Appeals held that “public employees’ tort immunity for legislative decisionmaking applies even when that decisionmaking is also alleged to involve the making of misrepresentations motivated by ‘actual fraud, corruption or actual malice.’” Therefore, even if Supervisor Peskin’s corruption allegations are supported by evidence, their value to the HOA in a suit against the City or individuals within the DBI or City Hall might be limited. Proof of corruption might however be detrimental to other defendants who are not similarly protected, particularly Millennium Partners.

Transbay Joint Powers Authority

The TJPA is the group responsible for the construction of the Transbay Transit Center that is adjacent to the Millennium Tower. The project has been subject to a number of setbacks of its own, and it also has been implicated in the litigation surrounding the sinking of the Millennium Tower. The legal doctrine that is integral to an analysis of the TJPA’s potential liability in the Millennium Tower case is the “doctrine of lateral support.” “Lateral support” is defined in Black’s Law Dictionary, Ninth Edition, as “Support by the land that lies next to the land under consideration.”

The doctrine of lateral support has been interpreted extensively by the courts. For example, in the 1878 Supreme Court case Transportation Company v. Chicago, the Court stated the following:

 “[E]very land-owner has a right to have his land preserved unbroken, and that an adjoining owner excavating on his own land is subject to this restriction, that he must not remove the earth so near to the land of his neighbor that his neighbor’s soil will crumble away under its own weight and fall upon his land. But this right of lateral support extends only to the soil in its natural condition. It does not protect whatever is placed upon the soil increasing the downward and lateral pressure. If it did, it would put it in the power of a lot-owner, by erecting heavy buildings on his lot, to greatly abridge the right of his neighbor to use his lot.”

This interpretation of the doctrine is favorable to the TJPA, especially because the Millennium Tower was built with concrete rather than lighter steel. Though other applicable restrictive laws mean the lateral support doctrine does...
not give developers carte blanche authority to dig and dewater without regard, the Court’s interpretation of the doctrine implies that, if a developer does not breach set standards for excavation and dewatering, neighboring property owners do not have a claim against the developer on the basis of settlement that coincided with the developer’s lawful use of its property. Even so, if the aforementioned allegations regarding the TJPAs mishandling of a breach in the subterranean wall and subsequent dewatering are proven to be accurate, then the protection afforded by the lateral support doctrine might be limited. The difficulty for the HOA will be to prove that the acceleration in settlement was actually caused by the TJPAs rather than by some other factor.

Assuming the HOA and the TJPA do not settle, there are a number of factors that will work in the TJPAs favor in litigation. First, sovereign immunity might be available to the TJPA because of its status as a governmental entity. The aforementioned protections available to the City and its employees would presumably be afforded to the TJPA. Additionally, even if sovereign immunity does not afford the TJPA protection here, it is possible that it would have an advantage over the HOA in a jury trial. The local news media already has theorized that the HOA’s efforts to go after the TJPA is motivated in part by the fact that a victory against TJPA would result in the government financing the HOAs attorney and expert fees, which could easily be in the multi-million dollar range given the complexity of the case. The media also has noted that the HOA would have better luck collecting on any judgment against the TJPA than against the developer or any contractors. Therefore, a jury (and perhaps a judge) might be reluctant to allow a large recovery against the TJPA, despite any sympathy that they might feel towards the homeowners who did not receive the luxury home for which they bargained.

A major hurdle that the TJPA would need to overcome is that its board signed documents in 2008 accepting liability for subsequent sinking of the Millennium Tower building caused by the Transbay Transit Center development. The lawsuit filed by the HOA emphasizes that this acceptance of liability is “not dependent on the existence of fault or negligence on the TJPAs part.” While this does not put the TJPA on the hook for the sinking that occurred prior to the 2008 agreement (which already was greater than expected), it could be detrimental if the HOA is able to prove that the Transbay Transit Center development actually caused additional settlement.

The Developer: Millennium Partners (Operating as Mission Street Development)

Seeking recovery from Millennium Partners could prove challenging because a separate limited liability company, Mission Street Development, was established for purposes of building the Millennium Tower project. The issue of whether the HOA might be able to pierce the corporate veil is beyond the scope of this paper, but there is some evidence that a judge will not be quick to let a developer hide behind an elaborate corporate structure. This issue could become extremely relevant later if it becomes apparent that Mission Street Development is under-capitalized and/or under-insured.

The Millennium Partners’ greatest vulnerability is perhaps that they concealed evidence of the building’s problems from prospective buyers. The third cause of action in the HOA’s March 2017 lawsuit alleges that “[o]n information and belief, Millennium Defendants provided prospective buyers with a written statement disclaiming any knowledge of any substantial defects as required by California Civil Code § 1134(b) . . . This disclosure constituted an express warranty . . .” While the level of settlement experienced by the Millennium Tower to the present day has likely satisfied this substantiality standard, the real question is whether the settlement of which the Millennium Partners had knowledge when they signed the disclaimers rose to the level of “substantial defects.” In one case involving problems with water intrusion and other construction defects, the Sacramento County Superior Court reaffirmed the California legislature’s intent, evidenced by Section 4 of the Civil Code, that “Provisions of the Civil Code are to be liberally construed with a view to affect its objects and to promote justice.” Given that the intent of § 1134(b) was likely to prevent purchasers of homes and condominiums from being deceived by builders, a court likely would determine that Millennium Partners should have informed prospective buyers of the higher-than-expected rate of settlement, even if the extent of the problem was not yet entirely apparent. In a 2017 article about developers managing their liability when constructing “green” projects, two lawyers who specialize in development risk management wrote that “As with any other seller of real property, a builder may be liable for fraud if it misrepresents the character or condition of the property, or it conceals or fails to disclose defects of which it knew or should have known and which would have affected the buyer’s decision to purchase . . .” Millennium Partners failed to disclose such a defect here.

The HOA might use case law to bolster its argument. In Quaschnick v. Frost, the Superior Court of Pennsylvania held the sellers of a home liable for their failure to disclose a termite infestation to the buyers, despite the buyers’ failure to inquire about termites, because it “is manifestly a serious and dangerous condition and . . . its existence is not readily observable upon reasonable inspection.” The Millennium Tower HOA might argue that, despite still being in compliance with inhabitability standards, the building is dangerous relative to a comparative building that has not settled significantly more than expected. With regards to latency, there is little doubt that the building’s unexpected settlement was latent, as the scandal did not break until the homeowners were informed about the sinking and tilting in 2016, which was more than five years after the building’s opening. Though Frost would not be binding precedent outside of Pennsylvania, a judge in a case involving the Millennium Tower would be free to adapt the Superior Court of Pennsylvania’s analysis in the case to the situation at hand.
Related to the developer’s liability to the HOA is its liability to suits by the contractors. If the HOA is successful in acquiring a judgement against a contractor, that contractor’s strongest case would likely be against the developer rather than any of the design professionals. As noted above, the design professionals are largely judgment-proof, absent blatant disregard for professional standards, because their work is judged on the basis of the generally forgiving “professional standard of care.” In contrast, the developer might be liable to the contractor on the basis of Spearin.

Section 3: Proposed Solutions
Numerous potential fixes have been proposed for the Millennium Tower. In the summer of 2017, a team of engineers announced that the first attempt to fix the tower would consist of drilling between fifty and 100 piles through the building’s basement and down 200 feet to bedrock in an effort to provide much-needed additional support to the 900 pre-existing piles that do not extend to bedrock. This fix was initially estimated to cost between $100-150 million. As of April 14, 2018, the cost estimate for this corrective measure had increased to somewhere between $200 million and $500 million, and the number of additional piles necessary had increased to between 275 and 300. In addition to the cost of this potential fix, other potential downsides are that it is expected to take between two and five years to be implemented and, according to one lawyer representing Millennium Tower homeowners, this “fix” is not being warrantied. While the initial steps for implementing this fix have been taken, the continued absence of a settlement regarding the financing of the fix remains a hurdle.

Another issue that has not been discussed as extensively is that, while experts think the addition of these new piles will stop the building’s settlement, it is entirely possible that they will not have the intended result. While a court might order any parties required to contribute funds for the first attempted repair to contribute again for subsequent attempts, it also is plausible that a judge might refuse to order additional payments. Moreover, many of the defendants might be driven to bankruptcy by a second large financial obligation for repairs so soon after the first, which would add an additional layer of complication and almost certainly result in less than full recovery of the judgment amount. Therefore, while alternatives to the installation of new piles have been proposed, it is possible that there will only be one opportunity to make things right.

Despite the signs that contractors might be ready to move forward with the aforementioned fix, another alternative, and perhaps the most likely in reality, is that efforts to implement a fix are not undertaken. As recently as July 28, 2017, the safety of the Millennium Tower was affirmed by a group of technical experts hired by the City. Therefore, while the HOA might still be able to recover substantial damages for purchasers of units in the Millennium Tower to compensate them for value that was lost because of the building’s settlement, money for an actual fix might not be part of the deal, barring evidence of continued settlement to such an extent that the building is no longer structurally safe. This would be a relatively unappealing remedy for residents because, while damages might compensate them for value lost up to the point of the settlement, it is impossible to account for how much value might be lost in the future. While an actual fix that stopped the settlement would likely repair the Millennium Tower’s reputation to some extent and thus permanently improve resale values in the building, damages would be a temporary fix for a permanent problem.

Section 4: Conclusion and Positive Developments
The City has adapted its policies in response to the Millennium Tower debacle. For example, developers are no longer responsible for choosing the peer review teams for their projects. This is a positive development because it will minimize the risk of the peer review process being compromised by loyalty to a developer or a fear of payment being delayed in response to pushback. Though the issue with the peer review for the Millennium Tower seems to have been an issue of scope more than any malfeasance, the reality of the matter is that the scope of the review was driven by the developer through DeSimone. It remains unclear whether the City will require developers to reimburse it for the peer review process. If that is the case, then a lingering issue is whether developers will still be able to curb the scope of peer review to cut down on cost as they did for the Millennium Tower.

Like Sisyphus perpetually pushing the boulder up the hill in Greek mythology, unraveling the web of litigation stemming from the construction defects of San Francisco’s Millennium Tower is an endeavor without an end. An inability to pinpoint any individual cause of the building’s substantial settlement issues and the potential that initial attempts to stop the settlement will not be successful make it impossible to conclusively state how the litigation will unfold. This paper analyzed facts from the news media and the construction records and reached a series of conclusions about their significance in the face of various legal standards. However, a judge, jury, or arbitrator could focus on the same exact resources and reach an entirely different conclusion based on their interpretation of the total picture.

The HOAs strongest cases seem to be against the City of San Francisco, the Transbay Joint Powers Authority, and Millennium Partners and its affiliates. Within this group, the HOAs greatest chance of recovery likely is against the Transbay Joint Powers Authority (because its assumption of liability might override any sovereign immunity protections) and Millennium Partners. One Millennium Tower homeowner noted during an interview with 60 Minutes that “It takes a half hour just to take attendance of the lawyers in the courtroom. I mean, literally.” At the end of the day, the lawyers might be the only parties involved in the Millennium Tower litigation who come out ahead.

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Endnotes


5. Id. at 2–5.


12. J.K. Dineen, Sinking Millennium Tower’s Developer Built Strictly to Code, S.F. CHRON. (Sept. 25, 2016), https://www.sfchronicle.com/bayarea/article/Sinking-Millennium-Towers-developer-built-9278364.php (“The Transbay Joint Powers Authority...blames the building’s structural shortcomings on the developer not using what are called ‘end bearing piles,’ which would have reached down 200 feet into the bedrock...Millennium Partners, the developer, says the foundation is fine. It argues that the transbay authority caused the damage, pinning the blame on its dewatering.”).


15. Wertheim, supra note 1.


17. Wertheim, supra note 1.

18. Millennium Tower Ass’n, No. CGC-17-557839 at 20 (“The property also suffers from other defects, including inadequate garage construction and waterproofing, defective windows, curtain wall corrosion and water intrusion, inter-unit odor transmission, cracks, and alignment issues.”).

19. Littman, supra note 16.


22. Letter from Tom Hui, Dir., Dep’t of Bldg. Inspection, to Angus McCarthy, President, Bldg. Inspection Comm’n (Oct. 27, 2016); see GREGORY DEERLEIN ET AL., STRUCTURAL SAFETY REVIEW OF THE MILLENNIUM TOWER (July 28, 2017), http://sfsga.org/sites/default/files/Document/MillenniumTowerSafetyReviewReport.pdf (“A general review of the structural design drawings and the subsequent structural analysis studies described later indicate that the building generally conforms to the building code provisions and that the structure employs some features, which go beyond the minimum building code requirements in effect at the time.”).

23. Dineen, supra note 12 (“Before the Millennium project, no major building in downtown San Francisco had piles driven into bedrock. But since then, four projects under construction are being built with piles that reach bedrock...”).

24. Id.

25. See id. (noting that the city did not adequately examine
the tower’s proposed foundation despite blocking a nearby project in 2004 on the basis of concerns about its use of a similar foundation design.

26. Letter from Tom Hui to Angus McCarthy, supra note 22.
27. Id.
28. Letter from Christopher Ridley, Civil Eng’r, Treadwell & Rollo, to Gary Ho, Dep’t of Bldg. Inspection (June 21, 2005) (indicating that the original geotechnical review did not go beyond Treadwell and Rollo conducting an initial investigation and then confirming on the basis of a selection of documents “prepared by DeSimone Consulting Engineers” that the “geotechnical aspects of the design are in general conformance with the intent of the geotechnical recommendations” included in Treadwell and Rollo’s initial report. This disclosure suggests that a comprehensive geotechnical analysis was never conducted, and raises the question of whether DeSimone withheld documents from the review that may have prompted Treadwell and Rollo to reach a different conclusion).

30. Letter from Tom Hui to Angus McCarthy, supra note 22 (noting that Jack Moehle wrote DBI the following on Jan. 29, 2006: “On the basis of my review, it is my opinion that the foundation design is compliant with the principles and requirements of the building code, and that a foundation permit can be issued for this project.”).
32. Id.
33. Id.
34. Id.
35. Phil Matier, Millennium Tower Condo Owners Feel Good About Their Lawsuit, SAN FRANCISCO CHRON. (Sept. 24, 2017), https://www.sfchronicle.com/bayarea/article/Millennium-Tower-condo-owners-feel-good-about-12222253.php (“In fact, the Millennium had already sunk 10 inches by time the digging began for the $2.4 billion bus and rail hub in 2010. Casselman said ‘the bulk of that was expected building settlement’ and it had all but stopped before transit center construction began.”).
37. Id.
38. Id. (“According to the court filing, Transbay officials had learned that the shoring wall had been ‘breached’ but chose to cover that up and even turn off groundwater monitoring equipment.”).
39. 301 Mission Street Mixed Use Development Initial Study, S.F. PLANNING DEP’T (May 10, 2002), https://archive.org/stream/301missionstreet1020sanf/301missionstreet1020sanf_djvu.txt (“The preliminary geotechnical report indicates the potential for structural damage to surrounding structures and utilities due to temporary dewatering at the project site.”).
40. Letter from Aaron Peskin, Member, S.F. Bd. of Supervisors, to Tom Hui, Dir., Dep’t of Bldg. Inspection (Sept. 12, 2016).
42. See Julie Littman, Legal Headache Becoming Migraine for Millennium Tower’s Developers, Homeowners, FORBES (Nov. 28, 2017); Wertheim, supra note 1 (“There are 20 parties to various Millennium Tower lawsuits and counting.”).
44. Id.
46. Id. at 577. (“It is apparent from the brief as a whole that the real argument is that the soils engineer is strictly liable. As already pointed out, we cannot agree. The appellant is a professional, employed as were the engineers in Gagne, Allied Properties, and Crestview, to make tests and to give professional advice as to what they showed. Thus his duty was to conform to the standards of his profession.”).
49. See Ericksen, supra note 48.
53. Id.
56. Letter from Tom Hui to Angus McCarthy, supra note 22.
57. Dineen, supra note 12.
58. Letter from Christopher Ridley to Gary Ho, supra note 28.
59. Id.
60. Id.
61. 301 Mission Street Mixed Use Development Initial Study,
supra note 39.
62. Wertheim, supra note 1.
64. Id.
65. 248 U.S. 132 (1918); see Lorence H. Slutzky & Dennis J. Powers, The Owner’s Role, in CONSTRUCTION LAW 45 (2009) (“The Court also ruled that the government’s implied warranty superseded contract language that required the contractor to thoroughly check the drawings and examine the worksite, as those requirements do not require a contractor to verify that the improvements as designed by the government are adequate to accomplish their purpose.”).
67. See Slutzky & Powers, supra note 65, at 47 (“Thus, if the owner can establish that the contractor failed to follow the owner’s drawings and specifications even if they are defective, the owner is insulated from any claims brought by the contractor with respect to the sufficiency of the drawings and specifications.”).
68. Id. at 48.
71. Id.; S.F. Bd. of Supervisors, supra note 69.
72. Letter from Aaron Peskin, Member, S.F. Bd. of Supervisors, to Tom C. Hui, Dir., Dep’t of Bldg. Inspection (Nov. 16, 2016) (“I am curious as to why there is no documentation that DBI formally retained the services of either Mr. Pannu or Professor Moehle specifically as peer review panelists (as opposed to consultants) or any documentation delineating their anticipated scope of work.”).
73. Letter from Tom Hui to Angus McCarthy, supra note 22 (“The developer’s engineer of record rejected DBI’s explicit request to fund the addition of a geotechnical engineer to this peer-review panel.”).
74. See Van Derbeken, supra note 52.
75. Letter from Aaron Peskin to Tom C. Hui, supra note 72.
76. See Ramos, supra note 70.
77. See Derrick D. Roorda, 301 Mission Structural Design Services Meeting Minutes (Feb. 14, 2006) (noting that Professor Moehle’s recommendation about an aspect of the foundation was followed, and that “[i]t is beyond code, and insures extra capacity in the foundation.”); Letter from Derrick D. Roorda, Senior Assoc., DeSimone Consulting Eng’rs, to Hanson Tom, Principal Eng’r, Dep’t of Bldg. Inspection (Sept. 28, 2006) (describing an instance in which Professor Moehle challenged the conclusions reached by DeSimone).
79. S.F. Bd. of Supervisors, supra note 69.
80. Id.
81. See Ramos, supra note 70 (“Peskin says the City will pay for its own peer reviewers in the future . . . ”).
82. AM. SOC’Y OF CIVIL ENG’RS, supra note 78, at 214.
83. Letter from Tom C. Hui, Dir., Dep’t Bldg. Inspection, to Aaron Peskin, Member, S.F. Bd. of Supervisors (Dec. 15, 2016).
84. Roorda, supra note 77.
85. Id. (emphasis added).
86. Letter from Hardip S. Pannu, Principal, Middlebrook + Louie, to Steve Patterson (June 12, 2006) (“We were not asked to review the effects of the Transbay Terminal project on this project.”); Letter from Hardip S. Pannu, Principal, Middlebrook + Louie, to Hanson Tom (Aug. 30, 2005) (“We were not asked to review the effects of the Transbay Terminal project on this project.”).
90. Letter from Aaron Peskin, Member, Bd. of Supervisors, to Tom C. Hui, Dir., Dep’t of Bldg. Inspection (Sept. 20, 2016).
91. Id. (“On what basis did the city feel it should expedite the issuance of temporary occupancy permits?”).
103. Lateral Support, BLACK’S LAW DICTIONARY (9th ed. 2009).
105. Phil Matier, Millennium Tower Condo Owners Feel Good About Their Lawsuit, S.F. CHRON (Sept. 24, 2017), https://www.sfchronicle.com/bayarea/article/Millennium-Tower-condo-owners-feel-good-about-12222253.php ("If they win, they keep the entire judgment—with their attorney and expert witness fees charged separately to the transbay agency, under laws designed to protect private property owners from public excesses.").
106. Id. ("Not to mention that the transbay authority would have an easier time paying up—because, unlike the developer, it’s a public entity and can float a bond to pay for the judgment.").
107. Jaxon Van Derbeken, Millennium Tower Secrecy May Have Paid Off For Consultants, NBC BAY AREA (Oct. 14, 2016), https://www.nbcbayarea.com/news/local/Millennium-Tower-Secrecy-May-Have-Paid-Off-For-Consultants-397174711.html ("Ortiz says she did not realize that the Millennium project was even sinking. She also says she didn’t know about a provision of the agreement that made the Transbay Authority liable, should its project contribute to the problem.").
108. Millennium Tower Ass’n v. Mission St. Dev. LLC, supra note 4 at 20.
109. Cara Bayles, Millennium Tower Holding Co. Can’t Escape Sinking Suit, LAW 360, Oct. 25, 2017 (noting that the judge in a case filed by two individual homeowners suggested that he would enable Mission Street Holdings LLC to be brought into the suit because “the third amended complaint had sufficiently alleged MSH was created as a shell company to shield unit sale profits from future lawsuits.").
110. Millennium Tower Ass’n No. CGC-17-557830 at 27. See CAL. CIV. CODE § 1134.
114. Julie Littman, Solutions to Problematic Millennium Tower?, BisNow (Sept. 21, 2016), https://www.bisnow.com/san-francisco/news/multifamily/solutions-to-problematic-millennium-tower-65392 (noting that an architectural design professor posited that “the tower’s sinking could be at least slowed by building a larger, heavier structure immediately north of the tower that is connected to the building’s frame to balance out and support the other structure, similar to a fix used for the Fisher Building in 1907.”); Wertheim, supra note 1 (noting that two relatively impractical ideas that were floated were to “perpetually freeze the ground” beneath the building or remove the top 20 stories).
116. Id.
118. Id.
119. See Robinson, supra note 11 (noting that crews were conducting test drillings in January 2018, but not providing any update about progress in the subsequent months).
120. See Matier, supra note 117 (“Before the full repair job gets going, however, lawyers and insurance representatives for all the feuding parties . . . will try to hammer out a comprehensive agreement to pay for anchoring the building and settling the multitude of condo owner claims.").
121. See id., supra note 117 (noting that concrete and trees had been removed to clear a space for drilling test holes to bedrock).
123. See id. at 3 ("Further, the review is limited to evaluation of the current condition of the Tower and does not address the effects of future settlement or other changes that may occur to the Tower in the future. Nor does the report attempt to address the causes of the settlement or implications of the settlement on the serviceability of the building.").
124. See Ramos, supra note 70.
126. Wertheim, supra note 1.
Hard Hat Case Notes

By Lauren P. McLaughlin and Christopher M. Burke

Court Holds that Subcontractor Faulty Work Is Not Covered by Prime Contractor CGL Insurance

The issue of insurance coverage for construction projects is becoming increasingly litigated as more risk coverage products enter the marketplace. In a recent decision by the Ohio Supreme Court, the court analyzed whether faulty work of a contractor’s subcontractor could be considered an insured “occurrence” under the prime contractor’s commercial general liability (CGL) policy.

In 2008, Ohio Northern University (Owner) contracted with Charles Construction Services, Inc. (Prime Contractor) to build a new luxury hotel and conference center on the university campus. Among other contract requirements, the Prime Contractor was required to maintain a CGL policy that included a products-completed operations hazard (PCOH) clause, which covered damages arising out of completed operations and which specifically was to apply to not only the work of the Prime Contractor, but also the work of its subcontractors. The Prime Contractor obtained the required insurance through a policy issued by Cincinnati Insurance Company (the Insurer).

After the project was completed in 2011, the Owner discovered that extensive water damage had occurred in the hotel portion of the project; further investigation revealed other serious structural defects. The estimated repair costs for the remedial work exceeded $6 million (against an original project amount of only $8 million). In 2012, the Owner sued the Prime Contractor for breach of contract and related claims in Ohio state court, and the Prime Contractor filed third party complaints against several of its subcontractors. The Prime Contractor also filed a claim under its CGL policy and requested that the Insurer defend the Owner’s allegations in the state court action and indemnify the Prime Contractor for any resulting judgment.

The Insurer intervened in the state court action and sought a declaratory judgment that it did not have to defend or indemnify the Prime Contractor under the CGL Policy. The Insurer predicated its position on the Ohio Supreme Court’s holding in Westfield Ins. Co. v. Custom Agri Sys. Inc., 979 N.E.2d 269 (Ohio 2012), wherein the court ruled that “claims for defective workmanship are not claims for ‘property damage’ caused by an ‘occurrence’” and therefore were not covered events under the terms of a contractor’s CGL policy. Both the Owner and the Prime Contractor opposed the Insurer’s motion, arguing that the PCOH clause and the subcontractor-specific causation in the case of the hotel project distinguished the instant case from the Ohio Supreme Court’s holding in Custom Agri.

The trial court found in favor of the Insurer on the basis of the Custom Agri holding, and both the Owner and the Prime Contractor appealed to the Ohio Third District Court of Appeals. The Court of Appeals reversed the trial court’s holding, ruling that the CGL policy language was ambiguous as to whether subcontractor defective work could be considered an “occurrence” under the policy, and that any such ambiguity would be construed against the Insurer. The Insurer appealed to the Ohio Supreme Court.

The Ohio Supreme Court first addressed the purpose behind CGL policies, i.e., that such policies are not designed to protect business owners from “ordinary” business risks. The court further explained that such policies do not “insure an insured’s work itself; rather it insures consequential damages that stem from that work.” Relating back to the court’s Custom Agri holding, the court noted that the insurance policy defined an “occurrence” subject to coverage as an “accident, including continuous or repeated exposure to substantially the same general harmful conditions.” The court next stated that for something to be deemed an “accident,” there needed to be present the notion of “fortuity” outside one’s control. In the court’s Custom Agri decision, the court held “claims for faulty workmanship…are not fortuitous in the context of a CGL policy.”

Applying the logic behind the Custom Agri decision to the facts of the university hotel project, the court specifically addressed the Owner’s and Prime Contractor’s contentions that the subcontractor’s faulty workmanship and the PCOH clause distinguished the hotel from the facts of Custom Agri. The court disagreed with the Owner’s and Prime Contractor’s submissions.
The court focused its holding on the definition of an “occurrence” under the CGL policy: “unless there was an ‘occurrence,’ the PCOH and subcontractor language had no effect, despite the fact that Charles Construction had paid additional money for it.” The court found that the subcontractors’ faulty work was not a “fortuitous” event. Acknowledging that the court’s reasoning in *Custom Agri* and the instant case placed it at odds with decisions from other courts analyzing similar issues, the court stated that “under our precedent, faulty workmanship is not an occurrence as defined in CGL policies like the one before us.” The court relied on what it deemed to be the “plain meaning” of the policy language and held that a contractor’s obligation to repair or replace its subcontractor’s defective workmanship could not be deemed unexpected on the part of the contractor. Accordingly, there was no “occurrence” or event that would trigger coverage or indemnification responsibility on the part of the Insurer.

**Authors’ Comments:** The definition of an “occurrence” triggering coverage is often a matter of dispute between insured and insurers. In the context of commercial general liability policies, parties are encouraged to review the precise definitions contained in their policies. Courts have differing views as to whether “faulty workmanship” may trigger coverage, with at least the Supreme Court of Ohio finding that such faulty workmanship is not an “occurrence” covered by a CGL policy.


Prime Contractor Found to Have Wrongfully Terminated Subcontractor Following Claims of Material Breach

Termination cases are among the most hotly contested construction disputes. In a recent decision by the United States Court of Appeals for the Eighth Circuit, the court held that a subcontractor’s alleged failure to pay its suppliers was not a “material” breach of contract and that the subsequent termination of the subcontractor by the prime contractor was wrongful.

In 2010, the U.S. Army Corps of Engineers (the COE) awarded a contract to Randy Kinder Excavating, Inc. (Kinder) to serve as the general contractor for the construction of a pumping station that would manage water levels around portions of the White River in Arkansas. The contract had an original duration of 425 days and a price of approximately $9.5 million. Kinder subcontracted with JA Manning Construction Company, Inc. (Manning) for the engineering, furnishing, and installation of a mechanically stabilized earth wall, which would serve as a retaining wall component of the project.

Manning was unable to commence its work in accordance with the initial construction schedule because Kinder had not yet completed required predecessor works that would have released Manning to perform its scope. Moreover, the project was beset with considerable weather-caused delays in the summer of 2011 further delaying Kinder’s predecessor work and—with extension—Manning’s subcontract work. Kinder submitted several claims to the COE alleging that weather and other events outside of Kinder’s control were pushing the project completion date into late 2012.

Despite Kinder’s representations to the COE that weather and other events necessitated an extension of time to complete the project, Kinder took the position with Manning that Manning caused project delays almost immediately upon Manning’s commencement of work. By the time Manning could begin constructing the retaining wall, only six days remained in the original contract duration.

Even after Manning commenced work, Kinder and the COE complained about the placement of wall panels and the parties disputed industry standards associated with Manning’s efforts. Kinder ultimately demanded that Manning suspend work in March 2012, after Manning was approximately two-thirds complete with the retaining wall construction. Thereafter, Kinder completed the wall construction with a replacement contractor.

Following completion of construction, Kinder initiated a lawsuit against Manning for breach of contract, and Manning countersued alleging that Kinder wrongfully terminated Manning’s subcontract. In defense of the wrongful termination claim, Kinder stated that Manning was the first to materially breach the subcontract and as such, Kinder’s “alleged failure to perform...was legally excused by Manning’s to perform its express and implied obligations under the Subcontract.” The trial court ultimately found in favor of Manning, holding that Kinder materially breached the contract via wrongful termination of Manning, and that Manning had not materially breached prior to the termination.

The Eighth Circuit Court of Appeals reviewed the case following Kinder’s appeal and affirmed the trial court’s ruling. Specifically, the Court of Appeals reviewed the legal standard for “material” breach and noted that under Missouri law, there are five factors that determine to materiality of a breach. Most significant to the case at issue was review of “the extent to which the injured party will be deprived of the benefit to which he reasonably expects.” The court assessed Kinder’s argument that Manning had “materially” breached the subcontract through alleged failure to pay Manning’s own suppliers.
which Kinder claimed occurred prior to Kinder’s threats of and ultimate follow through with its termination. The court held that any such alleged failure to pay suppliers did not deprive Kinder of any benefit that Manning was to provide Kinder and therefore ruled that Manning could not be found to have materially breached the subcontract.

The court also addressed Kinder’s appeal that its termination of the subcontract was not wrongful. Kinder’s contention was that its termination was proper because Manning was not performing to the standards required under the Federal Acquisition Regulations and was not performing to the satisfaction of the COE. Accordingly, Kinder asserted that Manning “elected not to perform” thereby justifying the termination. The Court of Appeals rejected Kinder’s position, finding that Manning continued to perform through the date of termination.

Authors’ Comments: Termination cases are frequently fact-intensive disputes where parties’ actions or inactions will be closely scrutinized by the trier of fact. In a case where one party seeks to defend its decision to terminate on the grounds that the other party was the first to “materially breach” a contract, the terminating party must review the standard of material breach under the law applicable to the case. Further, review and adherence to a contract’s specific termination procedures and requirements should be undertaken by any party seeking to exercise its default termination rights.

Randy Kinder Excavating, Inc. v. JA Manning Constr. Co., Inc., 899 F.3d 511 (8th Cir. 2018)

Court of Appeals for Federal Circuit Rules that Bonding Requirements Are Incorporated into Government Contracts for Construction by Operation of Law

As most practitioners know, contractors that do work with the federal government must contend not only with general principles of construction common law, but also face the sometimes-exacting requirements set out in the Federal Acquisition Regulations (FAR). In a recent decision by the United States Court of Appeals for the Federal Circuit, the court held that via the Christian doctrine, the bonding requirements in federal government construction contracts were incorporated into a contractor’s contract by operation of law.

In 2013, the federal government awarded to K-Con, Inc. (K-Con) two task orders for the design and construction of a laundry facility and an equipment shelter at Camp Edwards, Massachusetts. The standard form used by the contracting officer for the award of both task orders did not include any express requirement that K-Con provide performance or payment bonds for the work, nor did the task orders include FAR clause 52.228-15, which contains the standard language for performance and payment bonds in federal government construction contracts. Despite the lack of these express requirements, the government required that K-Con procure bonds prior to issuing a notice to proceed. K-Con purchased the bonds but submitted a request for equitable adjustment for the price of the bonds.

The contracting officer denied the request for equitable adjustment stating that under the Christian doctrine, the bond requirements set out in FAR 58.228-15 were incorporated into the task orders at the time of award despite the absence of the clause in the task orders themselves; on appeal, the Armed Services Board of Contract Appeals agreed with the contracting officer’s denial. K-Con appealed the Board’s decision to the United States Court of Appeals for the Federal Circuit.

Before reviewing the Christian doctrine issue, the court first addressed a separate aspect of K-Con’s appeal that the contract in question was not a “construction” contract and therefore the bond requirements of FAR 52.228-15 would be inapplicable under any circumstance. K-Con submitted that the contracts in question were actually for commercial items and therefore would not require performance and payment bonds. The court disagreed with K-Con and held that the solicitations contained contract language that was “patently ambiguous” as to whether the contracts were specifically construction or commercial in nature. In such a circumstance, the burden fell to K-Con to contemporaneously seek clarification from the federal government as to the true nature of the contracts. K-Con had not done so and the court ruled that this failure prevented K-Con from now arguing that the contracts should be deemed as “commercial” in nature.

Turning to the issue of the performance and payment bond requirements, the court considered K-Con’s argument that even if the contracts were properly considered as “construction” contracts, they should not be considered to include the procurement of bonds. The court first summarized the requirements of FAR 52.228-15, which requires any contractor on a construction project valued at over $150,000 to furnish payment and performance bonds.

The court confirmed that neither the laundry room nor the equipment room task orders expressly incorporated FAR 52.228-15. But the court stated that under the Christian doctrine, “a court may insert a clause into a government contract by operation of law if that clause is required under applicable federal administrative regulations.” The court continued, “for a court to incorporate a clause into a contract under the Christian doctrine, it generally must find (1) that the clause is mandatory; and (2) that it expresses a significant or deeply ingrained strand of public procurement policy.”

Applying both prongs of the Christian doctrine analysis to the K-Con appeal, the court first held that bonding requirements are “mandatory” in government construction contracts. Per 40 U.S.C. §§ 3131–34 and FAR 28.102-1, “before any contract of more than $150,000 is awarded for the construction, alteration, or repair of any public building or public work of the federal government, a person must furnish to the government [performance and payment] bonds, which become binding when the

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CONSTRUCTION BILLS: RECENT CHANGES TO CONSTRUCTION LAWS

By Asha A. Echeverria and Brian R. Zimmerman

The Trump Tariff Effect
On March 8, 2018, President Trump issued two proclamations: Proclamation 9704, Adjusting Imports on Aluminum into the United States, and Proclamation 9705, Adjusting Imports on Steel into the United States. These proclamations imposed tariffs of 10 percent on imported aluminum and 25 percent on imported steel. Earlier this year, under Proclamation 5595, President Trump applied tariffs to Canadian soft wood lumber. Even though domestic steel and aluminum producers generally supported the protectionist tariffs, many expressed reservations regarding the tariffs’ expansive reach. The Aluminum Association expressed disappointment that the tariff extended beyond China to “additional vital trading partner countries.” The Steel Manufacturers Association similarly spoke out to support exemptions for key U.S. allies, like Mexico and Canada.2

The construction industry accounts for two-fifths of U.S. steel shipments and Canada provided 28% of the U.S. soft wood market in 2017. Therefore, experts have speculated on the effects that tariffs would have on a construction industry still rebounding from the economic downturn. Now, months later the effects of these tariffs are starting to emerge, but their full impact is yet to be seen.

What We Know: Construction Materials Cost More
According to an analysis by the Associated General Contractors of America, the cost of construction materials rose 7.4 percent over the past year due to double digit increases in commonly used construction materials. Steel and aluminum products were major contributors to the large increase. Specifically, from September 2017 to September 2018, steel pipe and tube’s producer price index increased 22.1 percent, fabricated structural steel metal increased by 11.7 percent, and aluminum mill shapes increased by 10.7 percent.

The tariff on Canadian lumber has had a more dramatic effect; prices rose 25 percent in the last year and lumber today costs 60 percent more than it did two years ago.4 Cost increases in lumber have had a significant impact on homebuilders who employ wood frame construction, even forcing some companies to import materials from Russia to meet project price and schedule terms.5 This result does not appear to support the purpose of the tariff, which was to spur domestic lumber sales.

The administration’s tariffs have also introduced uncertainty and volatility into the market and the industry. Previously, contractors could generally rely on pricing from known suppliers, foreign and domestic. But today, tariffs are affecting not only pricing, but also availability of materials as contractors attempt to shift to domestic suppliers to control costs. Domestic steel suppliers, however, cannot meet the needs of an industry which has been heavily reliant on foreign imports.

On-going projects are seeing increased cost and decreased availability of materials, which is stretching budgets and schedules, and could result in failed projects, bankrupt contractors, and calls on surety bonds. In Seattle, the Federal Way Link Extension light rail project is expected to cost $460 million more than expected and the Key Arena reconstruction project is looking at an increase of approximately $100 million due to the resulting increase in steel prices.

As to upcoming projects, uncertainty and price volatility of materials is already affecting bidding. For example, in 2018, Kansas City, voters approved an increase in sales and property taxes to fund a streetcar extension, which was in development for over a year and had previously been estimated to cost at least $250 million. But Kansas City is now rethinking the project; “We are anticipating our prices to increase because of the tariffs,” said Donna Mandelbaum, communications director for the Kansas City Streetcar Authority. The uncertainty and price volatility has resulted in contractors either taking the risk of material pricing in their bids or more often, adding contingency to their bids to cover the price risk. This may result in some contractors losing money on projects (or making slim margins) and others being out bid, but it will most certainly result in owners paying more for projects, as expected by Kansas City.

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What We Should Expect
Higher material costs could cause construction slowdowns, reduce construction spending, and increase construction disputes as costs and schedules extend beyond parties expectations. The National Association of Home Builders has raised concerns that the tariffs will affect affordable housing, even though steel and aluminum make up only half a percent to one percent of the final price of projects. For departments of transportation around the country the effect on planned projects will be more noticeable as steel related products account for about 10 percent of the cost of highway and bridge projects, according to Alison Black, chief economist at the American Road & Transportation Builders Association.

Seattle and Kansas City may be harbinger of the results of higher construction costs derailing the president’s goal to rebuild the nation’s transportation infrastructure. As prices and domestic demand for American steel rise, the cost for the reconstruction of bridges, reinforced concrete highways, and railroads may become commercially unreasonable. Infrastructure projects may have to be further postponed or reduced in scope to meet funding availability.

According to a study by the Trade Partnership Worldwide, an international trade and economic consulting firm in Washington, D.C., jobs in industries that make steel will see a boom, growing more than 25,000 positions in the next three years to meet the needs of U.S. industries. This effect is already being seen as companies have announced expansions and the opening of dormant mills, like the one in Mingo Junction, Ohio. At the same time, Trade Partnership Worldwide has forecasted that the U.S. will lose more than 400,000 jobs overall due to the tariffs, with 28,000 of those in construction trades. The majority of jobs will be lost from manufacturing industries, which are heavily affected by higher steel and aluminum prices. Overall, factoring in the estimated impact of retaliation by U.S. trading partners, these experts estimate that the overall cost to the U.S. economy could be as much as $37 billion.

Endnotes
2. Id.
6. Id.
7. Id.
8. Turner, supra note 3.
9. Id.
12. Id.
14. Lieb, supra note 11.
15. Mayes, supra note 1.
16. Id.
17. Tryon, supra note 4.
18. Mayes, supra note 1.

Hard Hat Case Notes
(Continued from page 47)

contract is awarded.” The court rejected K-Con’s argument that the contracting officer in this case “waived” the bonding requirements by not expressly including FAR 52.228-15 in the task orders at issue.

The court then turned to the second prong of the Christian doctrine, namely whether the payment and performance bond requirement “express a significant or deeply ingrained strand of public procurement policy.” Relying on the long history of the Miller Act and the needs to protect both suppliers and the government from default, the court found that the bond requirements met the Christian standard. In so doing, the court rejected K-Con’s submission that if the bonding requirements were deeply ingrained into procurement policies, then the government should have rejected K-Con’s bids as nonresponsive.

Authors’ Comments: Contracting with the federal government presents multiple unique considerations not found in typical private construction contracting. Among them is the government’s ability to “read into” construction contracts clauses that are deemed mandatory and important but which may not be expressly contained in the contract itself. Contractors are encouraged to review government requests for proposals carefully and submit any questions regarding the nature and requirements of the job during the tender phase to hopefully avoid disputes over what is and is not required for performance.

K-Con, Inc. v. Secretary of the Army, 2018 WL 5780251 (Fed. Cir. 2018)
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