ISSUE FOUR • 2023

ENGINEERING INC.

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AWARD-WINNING BUSINESS MAGAZINE • PUBLISHED BY AMERICAN COUNCIL OF ENGINEERING COMPANIES

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"Hybrid work should be part of a broader strategy that revolves around ways to find and retain talent and differentiate your firm."

Chandra Storrusten
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ACEC's award-winning quarterly magazine *Engineering Inc.* provides expert analysis on all issues affecting the overall business of engineering. Other highlights include in-depth interviews with major policy makers whose decisions impact bottom lines; updates on critical advocacy issues and industry news, best practice management trends and marketplace projections, along with member firm innovations and announcements.

ACEC Seeks to Prevent Policy Threat to Bottom Lines, Industry Innovation

As most may know, there is a major policy threat looming on Capitol Hill that is already causing significant cash flow problems for engineering firms and creating a disincentive for investment in innovation.

As part of the Tax Cuts and Jobs Act of 2017, Congress changed how taxpayers write off research and development (R&D) expenses. As of January 1, 2022, firms can no longer write off R&D expenses in the year they were incurred and now must amortize those expenses over five years in most cases.

Section 174 of the federal tax code allowed businesses to deduct qualified research expenses in the year those costs were incurred. Congress created the related R&D tax credit in 1981. The amortization of R&D expenses will place the U.S. at a competitive disadvantage to other nations that provide greater incentives for R&D.

An important ACEC Member Action Alert has been distributed to members to urge their representatives and senators to support legislation that would repeal the R&D amortization requirement (H.R. 2673 and S. 866). ACEC also is working with a coalition of business allies to build support to move this repeal legislation forward *(see page 8)*.

In September, our latest Engineering & Public Works Roadshow celebrated the ACEC Grand Award-winning Able Pump Station in downtown Dallas. The project helps protect residents and businesses from flooding of the Trinity River. The Roadshow highlighted how infrastructure investment can improve the resilience of a community, protect residents, and encourage economic growth *(see page 34)*.

The cover story of *Engineering Inc.* presents an analysis of the ongoing nationwide workplace debate and the pros and cons of remote versus in-office work *(see page 12)*.

This issue also features a breakdown of how climate change is affecting legal standards of care interpretations during contracting *(see page 24)*. In addition, we profile critical emergency projects that required immediate engineering responses and explain how member firms resourcefully met those challenges.

Jay Wolverton
ACEC Chair

Linda Bauer Darr
ACEC President & CEO

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The ACEC Research Institute provides the engineering industry with cutting edge research, trend data, and economic analysis to help firm owners make decisions and delivers thought leadership that advances engineering's essential value to society.

The ACEC Research Institute wishes to extend its sincere appreciation to its generous contributors.

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ACEC Research Institute Reports: Continued Widespread Industry Optimism, Growth, Tempered by External Concerns

The ACEC Research Institute recently released two reports—the *2023 Economic Assessment of the Engineering & Design Services Industry* and the *Engineering Business Sentiment 2023 Q4*—both of which point to continued optimism for the industry and its firms, albeit somewhat softened compared to previous quarters.

2023 ECONOMIC ASSESSMENT OF THE ENGINEERING & DESIGN SERVICES INDUSTRY

Now in its fourth annual release, the report focuses on the key economic drivers of the engineering and design services industry. As in its three previous iterations, it seeks to describe, measure, and analyze the economic significance of the industry, and to highlight its inextricable link to the overall health of the U.S. economy.

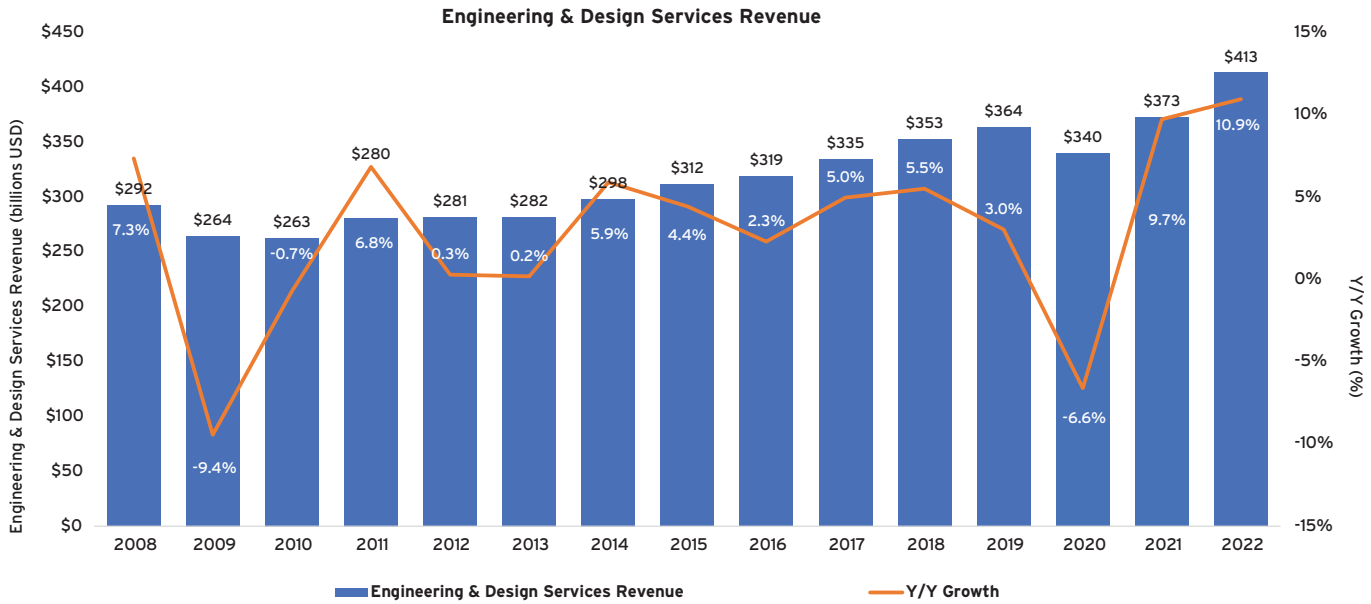
Overall, the report found that the engineering and design services industry has continued to build on its outsized post-COVID gains, growing nearly 11 percent in 2022—marking the second consecutive year of record-breaking growth. Although inflation eroded some of these gains, real growth was still relatively strong at 7.5 percent. Contributing to these gains were continued post-COVID stimulus spending, namely as a result of the passage of the Infrastructure Investment and Jobs Act (IIJA) and its associated investment in infrastructure.

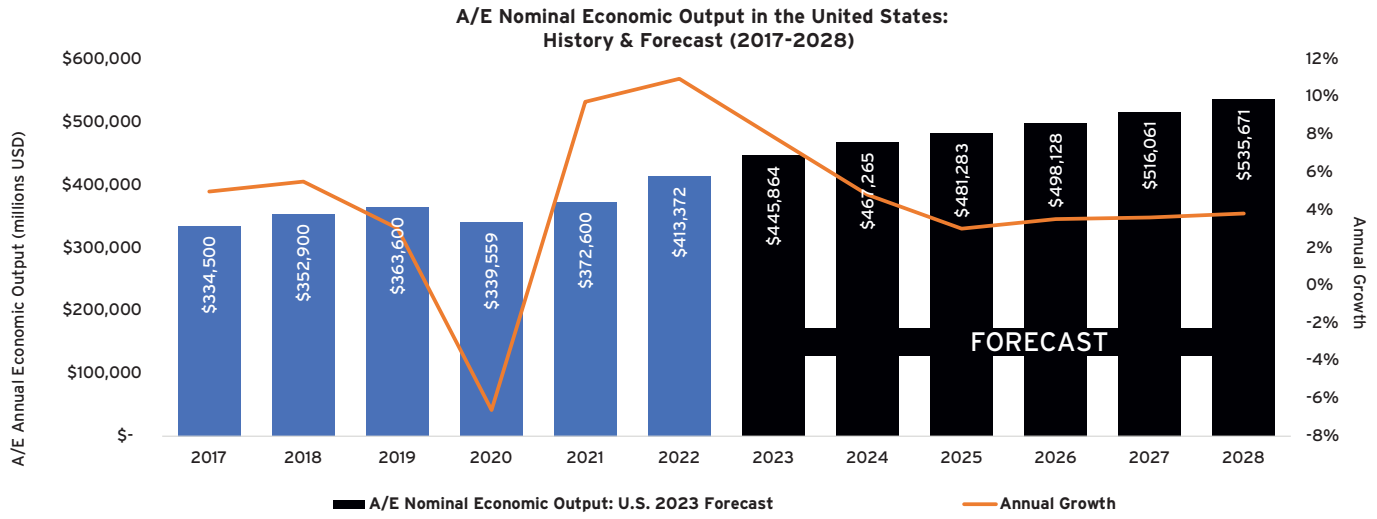
Other key end markets fueled the recovery as well, with manufacturing, data center, residential, and commercial construction all outperforming. In terms of geography, the Sun Belt continues to see outperformance, with key markets like Texas, North Carolina, and Georgia leading the pack.

Firms continue to contend with workforce shortages, with total industry employment not pacing the growth in real output, advancing only 4.7 percent over 2021 levels.

FORECAST FOR 2024 AND BEYOND

Economic output growth will slow in 2023, but it will remain well above historical averages, growing 7.9 percent to $446 billion. All told, the future looks bright for the A/E industry, even as revenues return to Earth after hitting stratospheric heights post-pandemic. Growth will moderate over the forecast horizon as the IIJA's impact diminishes and headwinds like interest rates, more restrictive lending, and labor constraints lead to a more challenging environment for A/E firms. The growth in public A/E activity will help to offset weakness in both residential and nonresidential construction in 2024 and 2025, with IIJA-supported A/E spend expected to peak in 2024. Other private-sector end markets, including office, commercial, retail, and residential, will likely see declines. That said, the overall forecast shows continued performance well above historical norms even amid these predicted declines. (See chart below.)





ENGINEERING BUSINESS SENTIMENT 2023 Q4

"Our findings show that 72 percent of firms predict an increase in hiring at their firms over the next 12 months, even with output returning to pre-pandemic levels," says ACEC Research Institute's Senior Research Consultant Joe Bates. "The work is there. What remains uncertain is finding qualified workers to fill those roles."

While workforce concerns are a recurring theme in the *Engineering Business Sentiment 2023 Q4* study, those concerns are overtaken by anxiety about new tax policies affecting research and development (R&D) amortization. Fifty-eight percent of firms report conducting R&D in 2023, with 45 percent of firms reporting spending at least $1 million. Of those firms, 87 percent report that the change in the R&D tax amortization requirements will affect their firms negatively, forcing them to either delay or pause growth plans (29 percent), or to invest less in R&D altogether (29 percent). (See chart below.)

Still, overall sentiment remains extremely positive for firms and for the overall industry. For this report, member firm leaders from around the country and from firms of all sizes were asked to weigh in on the current state of the industry and its direction. The survey uses a Net Rating methodology, which is calculated by subtracting the negative ratings from the positive ones. Therefore, a positive Net Rating indicates that overall sentiment is optimistic, while a negative Net Rating indicates an overall pessimistic sentiment. The higher the number, the stronger the sentiment.

The Net Rating for the industry is +82; for firm finances, the Net Rating is +81. Both numbers are down slightly (two points each) from the previous quarter, with small firms driving that decline. Optimism about the U.S. economy overall (+28) decreased four points, but it is still well off its low of -15 seen in 2022 Q3.

Among market sectors, current sentiment remains very optimistic; however, two-thirds saw declines in 2023 Q4.

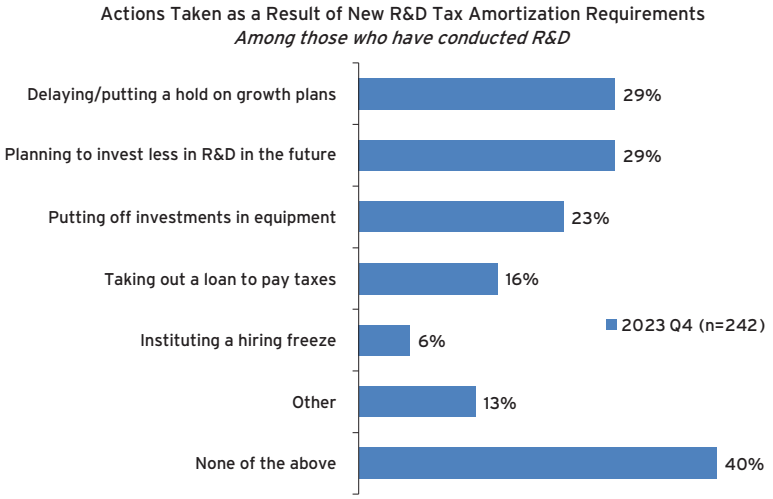
Looking ahead, the report found that future sentiment remains solid for firms' overall finances (+40), while future sentiment for the industry is only slightly positive (+16). That blunted optimism can likely be attributed to deepening concerns about the overall U.S. economy, for which sentiment remained negative at -16. That represents a drop of 14 points compared to the previous quarter.

Rising concerns over inflation (84 percent), political uncertainty (77 percent), and increasing interest rates (72 percent) are driving negative sentiment. As these numbers reflect, firms are particularly concerned about inflation, with concerns once again returning to levels seen in the first two quarters of the year.

"Taken together, these two reports provide a full and detailed view of the state of our industry, with the *Economic Assessment* giving the broad strokes, and the *Sentiment* study providing the fine lines," says ACEC Research Institute Chair Mike Carragher. "As the marketplace continues to change and evolve, it becomes more and more important for firms to see the big picture. These reports reveal an industry in robust health, but they also serve as a reminder that we are far from immune to external turmoil."

Learn more about the ACEC Research Institute at ACECResearchInstitute.org. ■

Twenty-nine percent of firms say they will delay/put a hold on growth plans, and another 29 percent indicate they will invest less in additional R&D.



ACEC Presses Congress on R&D Amortization

ACEC ramped up its advocacy on R&D amortization in the fall to stress to Congress the urgency of a fix before the end of 2023. Member firms interacted with their members of Congress through grassroots engagement and Member Organization visits to the ACEC residence in Washington, D.C.

The Council also launched an unprecedented public relations campaign that included cable and radio ads, as well as a grassroots component. ACEC members provided testimonials about the impacts on their firms due to this tax policy, and those stories were shared on the ACEC website and social channels.

DEEPBLUE4YOU/GETTY IMAGES

Discussions continue between the House and Senate tax-writing committees over a compromise tax package to address R&D amortization and two other business tax provisions, as well as tax relief for families in the form of an expanded child tax credit and earned income tax credit. House and Senate tax writers appear to favor addressing the amortization problem by moving the January 1, 2022, implementation date to January 1, 2026—giving industry and Congress more time to address a long-term fix.

It is expected that, if an agreement can be reached, the tax package would move forward with the Federal Aviation Administration (FAA) reauthorization or an appropriations bill. Congress temporarily extended FAA programs until December 31, 2023, and needs to act again on the FAA—with either full reauthorization or another extension—before the end of the year.

ACEC Provides Feedback on Proposed NEPA Regulations

ACEC supported critical reforms to the implementing regulations for the National Environmental Policy Act (NEPA), but it expressed concerns about other changes proposed by the White House Council on Environmental Quality (CEQ).

The proposed rule was triggered by the statutory changes to NEPA enacted by Congress earlier in the year, which ACEC strongly supported. Those provisions included expanded use of categorical exclusions, deadlines for environmental assessments and environmental impact statements, use of private resources to accelerate reviews, and utilizing digital technologies to facilitate efficient collaboration.

The Council expressed support for innovative approaches to NEPA reviews aligned with stakeholder engagement and risk management frameworks, highlighting best practices, such as the Envision system developed by the Council-backed Institute for Sustainable Infrastructure.

ACEC also urged CEQ to foster a continuous focus on information technology applications and data management to create efficiencies in the permitting process. E-NEPA provisions have the potential to create an online unified permitting portal, allowing applicants to submit required documents and track the application progress, and enhancing agency coordination by centralizing data and streamlining communications among agencies and the applicant.

However, the proposed changes from CEQ also included rolling back many of the reforms advanced under the previous administration. The Council expressed concern that removal or modification of many of the elements of the 2020 rule will likely cause permitting delays and frustrate implementation of the Infrastructure Investment and Jobs Act and the Inflation Reduction Act. "NEPA rulemakings that oscillate from one administration to the next will likely obstruct critical infrastructure investment, increase costs, and delay necessary enhancements to protect public health and safety," ACEC wrote.

The Council urged CEQ to follow congressional intent for narrowing agency considerations to reasonably foreseeable environmental impacts, a reasonable range of alternatives to the proposed action that is technically and economically feasible, and options that meet the purpose and need of the proposed action.

Council Urges Reforms at National Guard Bureau

ACEC is challenging the National Guard Bureau (NGB) relating to the agency's contracting practices and its use of sole-source authority.

The Council's outreach to the NGB is in response to the agency's cancellation of project solicitations in most regions of the country. The industry had anticipated opportunities to compete for these projects, but late in the process the NGB chose to withdraw the solicitations and carry out the work on a sole-source basis.

ACEC has raised concerns that the NGB had several opportunities to replace its expiring contracts, as well as engage with other agencies, such as the U.S. Army Corps of Engineers or Naval Facilities Engineering Systems Command.

Going forward, ACEC is urging the NGB to work within allowable rules to overcome its short-term needs and take action to establish multiregional A/E indefinite delivery, indefinite quantity contracts for future needs, which will provide full and open competition in a fair and transparent manner.

Council Notches Pair of QBS Wins

ACEC was successful in a pair of challenges to state and federal agencies that violated federal procurement laws and did not apply Qualifications-Based Selection (QBS) in selecting A/E services.

The Council recently challenged an RFP requesting offerors to provide a cost proposal representing 20 percent of the evaluation for a Park and Ride Design and Construction Engineering & Inspection in Charleston, S.C. ACEC notified the city that both the federal government and the state of South Carolina require the use of QBS for the procurement of engineering services. The project included federal transit funds, and the Council was successful in arguing that the agency must evaluate an offeror's qualifications to determine the award of the contract, and that price must be excluded as an evaluation factor.

In another challenge, the Federal Emergency Management Agency (FEMA) recently issued an RFP for architecture services to study, design, and replace generators using a reverse auction, where bidders compete online to identify the lowest bidder. ACEC notified FEMA's contracting officers that they were in violation of the Brooks Act and requested changes to the RFP. The RFP was modified to comply with federal rules.

PFAS Drinking Water Limits Raise Concern Over Cost and Science

The U.S. Environmental Protection Agency (EPA) has proposed a strict limit on per- and polyfluoroalkyl substances (PFAS) in drinking water of 4 parts per trillion, prompting concerns raised by ACEC and many water utilities.

ASIAVISION/GETTY IMAGES

The proposed limit is among the lowest levels that can be reliably detected and is tighter than any proposed by states. The water utilities have serious concerns about the cost of the rulemaking, particularly as those costs will potentially fall to ratepayers. The EPA's estimated costs for water utilities to comply with its proposal range from $772 million to $1.2 billion, while its estimated benefits range from $908 million to $1.2 billion.

However, a study requested by the American Water Works Association (AWWA) estimated that the national cost for water systems to install treatment to remove PFAS to levels required by the EPA's proposal exceeds $3.8 billion annually. According to AWWA, more than 5,000 water systems will have to develop new water sources or install and operate advanced treatment; another 2,500 water systems in states with existing standards will need to adjust existing PFAS treatment systems.

Recently, ACEC joined with associations of cities and counties to advocate that Congress direct an additional U.S. Government Accountability Office study of the EPA's cost estimates in the FY 2024 appropriations. ACEC will continue to engage Congress and the EPA to ensure water utilities and industries are subject to PFAS regulation based on the best science and rigorous cost-benefit analysis.

For More News

For legislative news, visit ACEC's *Last Word* blog online at www.acec.org.

Office-to-Residential Conversions: Are They Worth It?

BY DIANA ALEXANDER

RANK	MARKET	TOTAL OFFICE VACANCY
1	Houston	23.4%
2	San Francisco	21.1%
3	Denver	20.4%
4	Seattle	20.1%
5	Austin	19.9%
6	Atlanta	19.4%
7	Chicago	18.9%
8	Phoenix	18.8%
9	Nashville	17.5%
9	Twin Cities	17.5%
9	Dallas	17.5%
10	New Jersey	17.3%

RANK	MARKET	AFFORDABLE HOUSING DEFICIT
1	New York City	805,452
2	Los Angeles	605,547
3	Miami	224,625
4	Chicago	211,737
5	Houston	195,301
6	Dallas	185,864
7	Washington, D.C.	151,864
8	San Francisco	146,660
9	Atlanta	142,741
10	Philadelphia	142,102

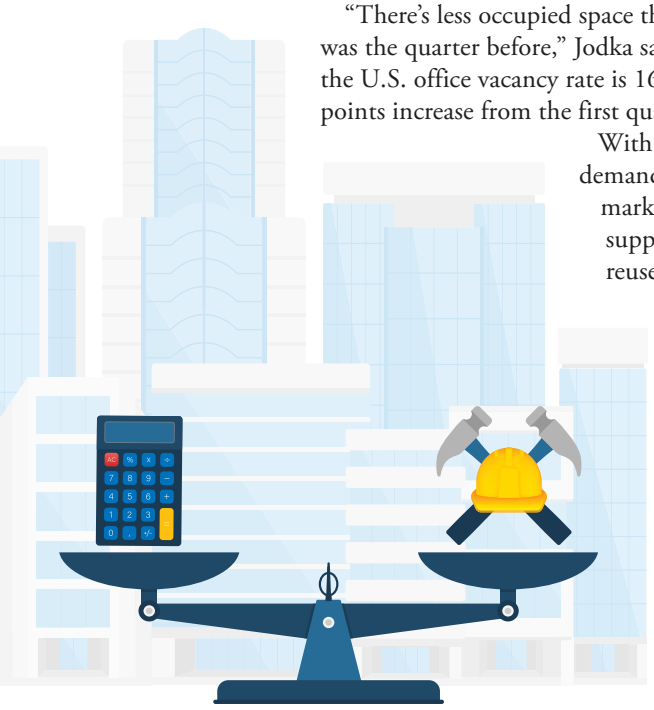
Cities with both high office vacancies and affordable housing shortages.

Sources: United Way, Commercial Edge

Housing market leader Freddie Mac estimates that the U.S. is approximately 3.4 million units short of for-sale and for-rent units. According to the U.S. Census Bureau and Reuters, single-family housing starts were down 7 percent, from 1,005,000 to 935,000, from May to June, its lowest rate in two years. Multifamily starts also fell 11.6 percent.

When Aaron Jodka, director of national capital markets research for Colliers, joined the *Engineering Influence* podcast, he reported that office vacancies were escalating to "an all-time high," leading to "softness in the office market." Newer Class A property types are in high demand, therefore, "90 percent of tenants are looking for 10 percent of the space.

"There's less occupied space this quarter than there was the quarter before," Jodka said. He noted that the U.S. office vacancy rate is 16.4 percent, a 30 basis points increase from the first quarter.



With softening office demand and a residential market experiencing a supply shortage, adaptive reuse becomes a potential solution for both markets. (See charts for markets with the highest office vacancy rates and the highest affordable housing shortages for conversion opportunities.)

When looking at the adaptive reuse of office space into multifamily residential units, Jodka said, "It's a great idea, and it's a really interesting concept. It will work in certain pockets, but it won't in others." Office conversions come with their own design challenges and price tag. From a design standpoint, engineers and architects will have to consider structural requirements, ceiling heights, permitting, windows/daylight, floor plate sizing, and potential "coring" out the building.

Jodka outlined what the process would entail for potential investors: "You need to acquire the building, then you need to rehab it, and repurpose it. That could be anywhere from $450 to $650 per square foot, potentially more."

This becomes a capital discussion. Developers want to know if the asset is lucrative and if they can sell it in the future. Overall, office to multifamily residential units seems like a promising concept, but it's not without its challenges.

OLEKSANDR HRUTS/GETTY IMAGES; RODESIGN/GETTY IMAGES

Founders Hall at the University of Washington's Foster School of Business was built using mass timber.

TIM GRIFFITH, COURTESY OF LMN ARCHITECTS

Mass Timber Benefits Schools and the Environment

Mass timber is the latest structural design trend setting its sights on the education market. When we last covered mass timber in fall 2019, it was trending in mid- to high-rise buildings in the commercial real estate sector. There were a reported 221 mass timber buildings under construction with an additional 378 in the design phase. As of today, 1,860 projects in the U.S. have used mass timber. There is currently a project in design or a project that has been constructed in each of the 50 states.

Developers and designers are choosing mass timber over steel and concrete because of these benefits:

- Increases the speed of project delivery time by up to 25 percent;
- Offers sustainable solutions through embodied carbon reduction;
- Less materials, less labor, and less waste;
- Quieter than steel and concrete;
- Cost savings.

Educational institutions are also turning to mass timber because of these benefits:

- Improved math and reading learning rates due to increased daylighting;
- Higher test scores due to biophilic design elements;
- Lower stress levels and improved well-being for students;
- Reduced construction schedules for schools;
- Cost competitive with concrete and steel;
- Lower vibration levels.

As of 2021, the mass timber market was worth $857 million, and it is expected to reach $1.5 billion by 2031. Mass timber buildings are expected to double every two years through 2034. According to the World Green Building Council, buildings account for 40 percent of carbon emissions. A popular solution called cross-laminated timber is a prefabricated and engineered wood that captures and stores carbon dioxide instead of emitting it like traditional building materials, including steel and concrete. If this growth keeps pace, the construction industry could store more carbon than it emits.

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Economic Outlook

Education

The Private Side column in *Engineering Inc.* focuses on the private-sector markets listed above, and information and insights on economic data relevant to the industry. For more on these topics, subscribe to ACEC's bimonthly *Private Industry Briefs*: **https://www.acec.org/resources/private-market-resources/#newsletter.**

***Diana Alexander**, CPSM, is ACEC's director of private market resources. She can be reached at **dalexander@acec.org**.*

HOW THE ENGINEERING

PIRANKA/GETTY IMAGES

WORKPLACE IS EVOLVING

ENGINEERING FIRMS ARE EMBRACING NEW WORK MODELS THAT EMPOWER EMPLOYEES AND FUEL COMPANY GROWTH

BY SAMUEL GREENGARD

Few events in modern history have changed the workplace—and the way people work—more than the COVID-19 pandemic. Within days of its onset, companies large and small were forced to find ways to pivot to remote work. Over the next couple of years, amid social isolation, lockdowns, and general chaos, many workers connected to the office from their homes. Somehow, everyone muddled through.

It has become painfully clear, however, that remote work is a blessing for some and a curse for others. Today's technology—including cloud computing—delivers remarkable benefits for both individuals and companies. Yet these systems can't replicate an office setting where groups of people gather in cubicles, in conference rooms, and at watercoolers to exchange ideas and solve problems.

Now, with the pandemic fading into history, A/E/C firms are attempting to find the right balance. On one hand, many professionals have grown accustomed to working at home and aren't keen on going back to the office full time. They often desire the work-life balance and flexibility that remote arrangements provide.

On the other hand, some of the best outcomes occur when people meet and collaborate in a physical space. Preserving a cohesive corporate culture can also prove daunting with people scattered across offices, states, or even countries. "Remote work situations present both opportunities and challenges," says Chandra Storrusten, CEO of Visible Value, an organizational strategy and growth consulting firm that works with A/E/C firms.

To be sure, morale, productivity, and the ability to attract and retain talent all hang in the balance. "In remote work environments, spontaneous interactions change," says Aimee Nalle, human resources director at San Francisco-based Degenkolb Engineers. "It takes conscious action from at least one person to reach out via phone or email or chat because the random hallway gatherings no longer happen."

OUT OF THE OFFICE

The pandemic clearly accelerated a trend toward remote work that had been inching forward for years. Polling organization Gallup reports that only 2 in 10 remote-capable employees are currently working entirely on-site—down from 6 in 10 in 2019. More telling: 97 percent of respondents want to work remotely at least some of the time, according to the 2023 *State of Remote Work* survey conducted by content creation platform Buffer. Overall, 98 percent view remote work somewhat to very positively—and 0 percent think about it in negative terms.

The reasons for desiring to work remotely vary, of course. But the most common factors for employees include reduced commute times, scheduling flexibility, and a general desire to balance work and life more organically. Employers often find flexible work arrangements attractive because they can decrease the need for pricey office space, and they introduce the possibility of hiring top talent without regard for geography.

Hybrid work has become the norm at Hanson Professional Services, a Springfield, Illinois, firm with more than 600

PEKIC/GETTY IMAGES

EMPLOYEE ATTITUDES ABOUT THE WORKPLACE

98 percent
of workers say they would recommend remote work to others.

22 percent
cite a flexible schedule as the primary benefit of working remotely.

19 percent
identify flexibility in where they live as the top benefit.

22 percent
say staying home and being unable to unplug are the biggest challenges, followed by loneliness.

Only 6 percent
want to work exclusively in an office.

One-third
say they were 100 percent as efficient working remotely, while nearly an equal number (31 percent) reported that they cannot do their job from home.

Hybrid work arrangements rose from 32 percent in 2019 to **55 percent** by the end of 2022.

6 in 10
exclusively remote employees are "extremely likely to change companies" if not offered remote flexibility.

3 in 10
hybrid employees are "extremely likely to change companies" if not offered remote flexibility.

Sources: Buffer, Gallup, Great Place To Work, Stanford Institute for Economic Policy Research

employees spread across 28 offices. "It had become clear that employees wanted a more flexible framework," explains Chief People Officer Mina Biggs. Like most firms, Hanson shifted almost entirely to remote work as the pandemic emerged. "But we also made it clear that 100 percent remote work was a temporary arrangement, and at some point, people would be coming back to the office."

In September 2020, Hanson released a set of policies to guide managers and employees through the remote work labyrinth. Senior executives opted against creating any restrictions around days or hours. "We decided that it was up to managers to make the decision based on what makes sense for a particular team, role, and employee," Biggs says.

As a result, Hanson established a framework built around trust and accountability. An employee must fill out a request for hybrid work, and a manager reviews it. After the two come to an agreement about how to structure the remote work arrangement, HR receives the approved work arrangement, and the employee's schedule is posted in a Workday platform that is accessible to all staff.

Productivity never took a hit, and annual turnover hovers in the single digits. "Our philosophy was to move forward with a hybrid work program and deal with any speed bumps that appeared," Biggs says.

Today, about two-thirds of Hanson's workforce works remotely some of the time, and about one-third works entirely in the office. "Different people have different preferences and needs. As long as we're meeting our goals as a company, it's really just a question of how to design and operate the program," Biggs says.

"In remote work environments, spontaneous interactions change."

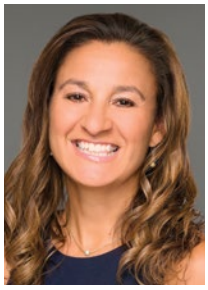
AIMEE NALLE
HUMAN RESOURCES DIRECTOR
DEGENKOLB ENGINEERS

"Hybrid work should be part of a broader strategy that revolves around ways to find and retain talent and differentiate your firm."

CHANDRA STORRUSTEN
CEO
VISIBLE VALUE

"Flexibility has become a key factor for attracting and retaining talent, but also for how work takes place in a digital economy."

BRIAN BARTON
CEO
JONES & DEMILLE ENGINEERING



"We decided that it was up to managers to make the decision based on what makes sense for a particular team, role, and employee."

MINA BIGGS
CHIEF PEOPLE OFFICER
HANSON PROFESSIONAL SERVICES

LABOR PAINS

Make no mistake: Fundamental changes to the workplace are underway. The Stanford Institute for Economic Policy Research has declared the U.S. a "working from home" economy. It reports that over 60 percent of U.S. economic activity derives from remote work. A 2021 survey conducted by the Centre for Economic Policy Research reported that 42 percent of U.S. employees would start looking for other work or quit their job if they weren't allowed some flexibility in the way they work.

"Flexibility has become a key factor for attracting and retaining talent, but also for how work takes place in a digital economy," says Brian Barton, CEO of the Richfield, Utah, firm Jones & DeMille Engineering, which has about 175 employees scattered across 11 offices. While he and the executive team prefer that employees come into the office as often as possible, employees are allowed to make their own decisions. "We take the position that individuals are 100 percent responsible for their own success," Barton says. "That means that things are going to look very different for each person."

Storrusten points out that no two companies, roles, or employees are the same—and it's unwise to impose a rigid framework that doesn't address how a business operates and how individuals work. Instead, adapt potential processes to talent and desired outcomes. "Some people have roles that are better suited to remote work. Some people thrive remotely, while others are more productive and happier in an office," she says. "The burden is on a company and its leaders to figure out what works best for teams and be intentional about building connections and implementation."

Balancing structure with flexibility is a key consideration at Degenkolb. With eight offices in the U.S. and Mexico, it also has established a formal written policy for hybrid work. The firm encourages employees to come into the office three days per week.

According to the Stanford Institute for Economic Policy Research, it's prudent to focus on three critical pillars when establishing a remote work program. First, it found that one to three days out of the office per week is optimal. This gives employees a break from the stress of commuting and offers greater flexibility in their day. Second, working from home should always be an optional choice; 20 percent of workers don't want to exit the office on a regular basis. Third, working from home should be framed as a privilege, not an entitlement.

What if a remote situation doesn't work out? "There may be a need to reassign or redeploy individuals who are valuable but are unable to work or lead well in a hybrid or remote environment either because they are lonely, not supported properly by their manager, or productivity drops off," Storrusten explains. "It isn't something for everyone."

CULTURE MATTERS

The challenges surrounding hybrid work arrangements aren't based in technology. Tools such as Windows 365, Dropbox, Google Drive, Slack, Zoom, and Teams make it incredibly easy for people to connect and collaborate online. Cloud computing connects people and data seamlessly. The problem is that these tools remap personal connections. Instances such as mentoring in the moment and impromptu gatherings that generate new ideas and even breakthroughs aren't possible when large swaths of a workforce work remotely. Relationships with clients can take a hit.

Jones & DeMille Engineering addresses these risks through a series of formal and informal policies, Barton says. For example, the firm asks that client meetings take place in person whenever possible, though it imposes no expectations about regular team meetings. In addition, about twice a month it holds large-scale meetings on Zoom, where people share news, information, and updates. "We have found that this approach helps reduce feelings of isolation and some of the anxiety that's associated with working remotely," Barton says.

At Hanson, soft skills are also in the spotlight—particularly in areas such as communication, collaboration, and leadership. The company constantly examines attitudes, methods, and tools that are crucial for hybrid work. It reviews what is working, what isn't, and what processes need to change. In addition, it sends emails, newsletters, and other content with ideas and tips for navigating a changing workplace. Finally, "Every January, man-

PEKIC/GETTY IMAGES

agers review the remote work relationship with the employee before recertifying it." Biggs says. "We ask, 'What's working, what's not working, and what needs to change?'"

Degenkolb's Nalle says that the firm has had to find creative ways to connect people so that mentoring, knowledge sharing, social connections, and other organic conversations can take place online. This has led to specialized online events such as their "DegChef" cooking class; "DegCreatives" art show; annual Rock Paper Scissors tournament; and small discussion groups called coffee chats. The approach helps people meet and get to know each other—which often leads to further interactions. "We have had occasions where people say, 'Hey, I haven't chatted with you before, and you're doing some interesting work. Let's get to know each other better,'" she says.

It's important to approach hybrid work arrangements with the goals of making a firm a great place to work and providing growth opportunities, Storrusten says. Hybrid work frequently intersects with other programs and benefits, such as PTO, job sharing, nontraditional working hours, and similar alternative work arrangements. "Business leaders should focus on how they can optimize staffing and overcome talent shortages," she says.

To be sure, hybrid work arrangements aren't going away. Technology and an array of social factors are profoundly reshaping the workplace and the broader economy. Understanding the nature of work—and how employees now approach work-life balance—is vital to designing an effective program. Says Storrusten, "Hybrid work should be part of a broader strategy that revolves around ways to find and retain talent and differentiate your firm." ■

***Samuel Greengard** is a technology and business writer based in West Linn, Oregon.*

7 WAYS TO CREATE SUCCESSFUL HYBRID WORK ARRANGEMENTS

1. **Understand your company and business.** No two firms are the same. Understand what works best at your organization and for your workers.
2. **Establish a policy.** Formalize how the program works—including who, what, when, where, and how.
3. **Focus on flexibility.** Experts say the best plans give managers and employees some latitude to do what works best for them.
4. **Use technology effectively.** The IT framework is the glue that holds everything together. The hardware and software your organization uses can make or break an initiative.
5. **Emphasize communication.** It's easy for people to connect online. It's more difficult to ensure that the level of interaction is meaningful. Organizations must often rethink workflows and processes. Also, from a cultural standpoint, it's vital to use communication apps like Slack to keep people informed and connected.
6. **Monitor performance.** Use metrics and KPIs to gauge results and track employee performance at home and in the office.
7. **Make periodic adjustments.** Companies change, and the business environment changes. Use data and employee feedback to make tweaks to your firm's policies.

Attendees enjoy more than 50 exhibitors at the Fall Conference.

2023 FALL CONFERENCE WRAP-UP

NEW ATTENDANCE AND FUNDRAISING RECORDS SET

The recently concluded 2023 Fall Conference in Austin, Texas, provided two triumphant firsts for ACEC. As ACEC Chair Jay Wolverton announced, more than 1,000 members attended the Fall Conference, the most in conference history.

Additionally, ACEC/PAC reached a $1 million fundraising milestone during the conference, a record pace for this early in the year.

In her remarks to the Board of Directors, ACEC President and CEO Linda Bauer Darr shared thoughts on the future of the industry and the need for members to focus on advancing technology and better position themselves to "compete—and win—in a marketplace that is more and more driven by technology."

"Technology is not something to fear," Darr said. "It's something to be embraced and to be leveraged. The world has changed. We risk nothing by being prepared for that change. We risk everything if we aren't."

The conference also featured noted national speakers and a bottom line-focused lineup of management education sessions, along with entertaining networking activities.

More conference highlights follow.

U.S. CHAMBER'S NEIL BRADLEY WARNS OF GOVERNMENT'S PRO-BUSINESS DISCONNECT

The 2023 Fall Conference kicked off with remarks from U.S. Chamber of Commerce Executive Vice President and Chief Policy Officer Neil Bradley, during which he shared his impressions of the current political state of play. He also offered thoughts on how ideological extremists on both ends of the spectrum are jeopardizing hard-won progress.

Bradley began his remarks with a history lesson, asking attendees to imagine themselves at a conference in the early 1970s, when government regulation would have impacted much of the journey—from the cost of the flight to the price of a phone call home.

A half-century of deregulation has given consumers choices, lowering prices and setting the stage for free enterprise to flourish. "For the entire professional life of everyone in this room, the consensus on both the left and right has been that free enterprise is good," he said.

It is only within the last several years, Bradley argued, that fringe elements on both the left and right have gained ground in reverting to rules and regulations empowered to "bring business to heel."

ACEC President and CEO Linda Bauer Darr discusses technology's impact on the future of the industry.

Neil Bradley (right), U.S. Chamber of Commerce executive vice president and chief policy officer, participates in a panel discussion moderated by ACEC Chair Jay Wolverton (left).

ACEC Chair Jay Wolverton announces the attendance and fundraising records.

Polar explorer Ben Saunders shares insights on teamwork, innovation, and accountability.

There has been a breakdown in the long-standing pro-business consensus and policies, Bradley said. "The era of deference to free markets is over."

And this, he continued, is where the fight for the future will be waged—and it's a fight that organizations such as ACEC and the Chamber must win.

BEN SAUNDERS STRIKES CHORDS ON INNOVATION, TEAMWORK, INDIVIDUAL ACCOUNTABILITY

The power of translating human potential and wisdom across industries emerged as an overarching Fall Conference theme. Ben Saunders is living proof of how this multidisciplinary collaboration is already moving the engineering world forward.

Saunders is the world-renowned polar explorer and was the first person to lead an expedition to the South Pole—and survive. He explained how his experiences make clear that while we often think about technology as microchips and digital devices, the word applies across all contributions of human knowledge.

Saunders' expedition to the South Pole took years to plan and four months to complete. To make this dream a reality, he had to overcome three main types of challenges. Along with commercial challenges (i.e., fundraising, equipment, and leading a team), he faced physical challenges (such as fitness, nutrition, and clothing), and cognitive challenges relating to the physical and mental stress of the journey.

When looking back on the mental preparations, Saunders said he "realized pretty quickly that that was the most important piece, because when you're out there, you can never really recover fully from one day to the next," he said. "You're always getting more and more tired. Every day you wake up, and you're just more tired, more tired, more tired, in a sort of downward spiral." The statement aligned perfectly with the realities so many professionals face in today's fast-paced and stressful work environment.

Now, after spending almost two decades traversing terrains that are arguably some of the most unforgiving on Earth, he has made a "weird pivot" to sustainable innovation, which seems a perfect fit for his skills and expertise.

"I'm enjoying being a kind of catalyst. Like, I'm not a scientist. I don't have mounds of money. But I can raise money, [and] I can point it in the right direction and find extraordinary talent and intellect and IP [intellectual property]," Saunders said.

"We need to push the limits of sustainable technologies, so that's where I'll be."

(Top right) Legendary marathon swimmer Diana Nyad delivers an entertaining and inspirational presentation on her life and accomplishments.

(Top left) ACEC Research Institute Chair Mike Carragher; ACEC Research Institute Consultant Joe Bates; and Jon Gray, principal, Rockport Analytics and the ACEC Research Institute chief economist, unveil the results of the *4th Annual Economic Assessment and Industry Forecast.*

SWIMMING LEGEND DIANA NYAD CAPTIVATES CONFERENCE AUDIENCE

Swimmer, author, and journalist Diana Nyad treated attendees to an inspirational and spirited presentation where she shared her journey of becoming the first person ever to swim from Havana to Key West, Florida, without a shark cage—a mind-boggling 110 miles.

Equal parts entertaining and inspiring, Nyad set the tone of her remarks early, coming onstage with a trumpet and playing "Reveille"—a military bugle call that means "wake up" in French. She told the audience that the tune is a metaphor for how she has lived her life: "Onward. Get up. Don't miss the dawn. Don't miss a moment of your life."

Nyad shared a story from her childhood that shaped both her worldview and her future. She spoke of her "very dramatic" Greek father, who one day woke Diana in tears to take in the beauty of the ocean. Her father pointed out to her a definition in the dictionary: "*Nyad* means girl or woman champion swimmer. This is your destiny."

Kal Penn, actor and former associate director of the White House Office of Public Engagement, tells attendees that we're more aligned on climate change than we realize.

After the Cuban revolution, when thousands of refugees flooded into Nyad's hometown of Miami, a 9-year-old Diana asked her mother how far away Cuba was from Florida. "So close that a strong swimmer like you, you could swim there," she replied.

At age 64, Nyad embarked on her fifth and final—and successful—attempt. With a team of 40, including navigators, medical experts, and personal handlers, Nyad began the more than 100-mile open ocean swim, battling marine life, sensory deprivation, and the powerful Gulf Stream. Fifty-two hours and 54 minutes later, she emerged triumphant.

"Cuba was about potential, to drill down to every last thread of physical and mental potential," she concluded. "I am now 74 years old. I have no regrets."

KAL PENN OFFERS A MESSAGE OF OPTIMISM

While Kal Penn is an actor, he has also served as an associate director in the White House under President Barack Obama in 2009, as a climate change activist, and as a liaison to Asian Americans and Pacific Islanders and arts communities.

Drawing from this nontraditional resume, Penn impressed upon attendees that we're more aligned on climate change and "doing the right thing" than we realize.

Penn shared a 2008 statistic revealing that conservative- and liberal-minded young adults at that time cited a similar set of top five concerns for the future, including poverty, human rights, and climate change.

He also recalled overseeing an executive order while serving as a White House staff member for former President Obama, who signed Executive Order 13515 "Increasing Participation of Asian Americans and Pacific Islanders in Federal Programs" into law.

Penn concluded his talk by reminding attendees that the most powerful stakeholders in our society, including incoming generations, government actors, and major corporations, are more aligned than we sometimes appreciate, especially when it comes to "doing the right thing."

ACEC RESEARCH INSTITUTE DISCUSSES DEI&B LINK TO ATTRACTING AND RETAINING TALENT

When considering the engineering workforce shortage, it is critical that ACEC member firms prioritize making their workplaces attractive to prospective employees. It is equally important that

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COALITIONS DISTINGUISHED SERVICE AWARD

- **John E. Burns**, Burns Engineering, Philadelphia

COMMUNITY SERVICE AWARDS

- **C.K. Satyapriya**, CTL Engineering Inc., Columbus, Ohio
- **Rizwan Siddiqi**, EBA Engineering, Laurel, Maryland

NEW COLLEGE OF FELLOWS INDUCTEES

- **Derek L. Clyburn**, ECS Southeast LLP, Raleigh, North Carolina
- **Gary D. Hartong**, The Wooten Company, Raleigh, North Carolina
- **Matt Hirst**, CRS Engineers, Salt Lake City
- **Andrew McCune**, Wade Trim, Taylor, Michigan
- **Gary W. Raba**, Raba Kistner Inc., San Antonio
- **Rizwan Siddiqi**, EBA Engineering Inc., Laurel, Maryland

2023 SCHOLARSHIP WINNERS

- ACEC College of Fellows — Scholar of the Year: **Michael Drummond**, University of Cincinnati
- ACEC Life/Health Trust Scholarship: **Jayci Tsuhako**, University of California–San Diego
- a/e ProNet Scholarship: **Jillian Dlouhy**, University of Nebraska–Lincoln
- J.A. Watts Inc. Diversity in Engineering Scholarship: **Madison Allen**, University of Tennessee–Knoxville
- Kimley-Horn Diversity in STEM Scholarship: **Alex Chau**, San Diego State University
- Kimley-Horn Diversity in STEM Scholarship: **Angel Randall**, Prairie View A&M University
- Lee Rice (LRE) Water Scholarship: **Kyle Van Horn**, Ohio Northern University
- Morrissey Goodale Diversity in STEM Scholarship: **Grace Whisler Lipford**, Kansas State University
- Morrissey Goodale Helping Hands Scholarship: **Isabella Bernard**, The Catholic University of America
- Small Firm Coalition Scholarship: **Jaclyn Bashore**, University of Cincinnati
- Stanley Consultants Inc. Diversity in Engineering: **Morgan Trechter**, The Catholic University of America
- Stanley Consultants Inc. Helping Hand Scholarship: **Katlynn Vicuna**, University of Hawaii at Manoa

John Carrato, former CEO and chair of Benesch and immediate past chair of the ACEC Research Institute, speaks after receiving the 2023 Chair Emeritus Award for outstanding service and support to the Council.

YOUNG PROFESSIONAL OF THE YEAR AWARDS

- **Ryan Delves**: Stanley Consultants Inc., Chicago
- **Jonathan Markt**: HDR, Omaha, Nebraska
- **Jessica Ross**: Watts Architecture & Engineering, Buffalo, New York
- **Jessica Splittgerber**: EMCS Inc., Wausau, Wisconsin
- **Erik Walega (named Young Professional of the Year)**: RESPEC Company LLC, Rapid City, South Dakota

QBS SPECIAL RECOGNITION AWARD

- **Senator Clyde Chambliss**, Alabama State Senate, Montgomery, Alabama

ACEC/PAC FALL CONFERENCE SWEEPSTAKES WINNERS

The winners of this year's PAC Sweepstakes: **David Wantman**, **WGI**, West Palm Beach, Florida, won the $10,000 Grand Prize. **Elizabeth Stolfus**, **Stolfus & Associates**, Greenwood Village, Colorado, won the $7,500 prize. **Laury Hodges**, **VHB**, Atlanta; **Peter Latta**, Jones & Henry Engineers, Toledo, Ohio; and **Fabricio Ponce**, **VHB**, Atlanta, each won $5,000. **Paul Korn**, **Sayre Associates**, Sioux Falls, South Dakota; **Paul Wasser**, **Schnabel Engineering**, Boise, Idaho; and **Jason Webber**, **Kimley-Horn and Associates**, Delray Beach, Florida, each won $2,500.

Ten people won $1,000 prizes: **Robin Greenleaf**, **Architectural Engineers,** now **IMEG**, Boston; **Gary Grigsby**, **ACEC-Wyoming**, Cheyenne, Wyoming; **Gary Hartong**, **The Wooten Company**, Raleigh, North Carolina; **Jason Kelly**, **DOWL**, Lake Oswego, Oregon; **Maria King**, **Lochmueller Group**, St. Louis; **Alan Marteney**, **Century Engineering**, Dover, Delaware; **Brian Parker**, **Kimley-Horn and Associates**, Fort Worth, Texas; **Scott Rathfon**, **Century Engineering, a Kleinfelder Company**, Dover, Delaware; **Matthew Richards**, **Strand Associates**, Madison, Wisconsin; and **Kenneth Smith**, **T. Baker Smith**, Houma, Louisiana.

Attendees cheer on the racers at the ACEC/PAC Pinewood Rally.

2023 Pinewood Rally winner Nathan Junius, Linfield, Hunter & Junius (left), with last year's winner, Elizabeth Stolfus of Stolfus and Associates. This year's second place winner was Jason Matson, Kimley-Horn, and the third place winner was Mitch Simpler, JB&B.

those environments foster a sense of inclusion and belonging to retain talent.

A benchmarking study by the ACEC Research Institute on diversity, equity, inclusion, and belonging (DEI&B) provides insights for ACEC member firms. The institute was able to share several preliminary data points for Fall Conference attendees ahead of the study's release.

Of the responses in the study up to this point, 36 percent of member firms have a DEI&B strategy in place and 35 percent are working to develop a strategy, but 28 percent do not have a strategy and are not currently working to develop one. That means that 71 percent of firms that have responded so far either have or are developing a strategy.

By checking out the benchmarking resource, readers can see what it takes to move from one stage to the next. The tool is now reopened for firms that want to participate. Reach out to the ACEC Research Institute for login information, or email questions to institute@acec.org.

EXCITEMENT SURROUNDS NEW ACEC TECHNOLOGY COMMITTEE

The 7 a.m. meeting start time did not diminish the enthusiasm for ACEC's new Technology Committee, which drew a standing room-only crowd.

With the Fall Conference being noted for its tech-heavy curriculum, the attendance at the committee meeting confirmed the growing importance for firms to adopt advancing technology and learn new strategies for navigating an evolving business environment.

Raj Arora, Technology Committee chairman and CEO of Jensen Hughes, began the session with a brief overview of the committee's evolution over the last year. A day-long session this past spring in Washington, D.C., established a charter and created three subcommittees: Listening and Engagement, Education, and Advocacy.

From those initial conversations, a slate of challenges and priorities emerged regarding securing talent, managing demand for services, navigating a changing workplace, and the need to maintain competitiveness.

With firms of all sizes needing to fill open positions, the impact of tech on the workforce is a significant topic. "We're all street fighting all day long for talent," said Arora. "I think tech is going to help us both attract and retain workers."

This was echoed by Javier Baldor, CEO of BST Global. "Don't just think through the next move. Think beyond to the full set of moves," he said. ■

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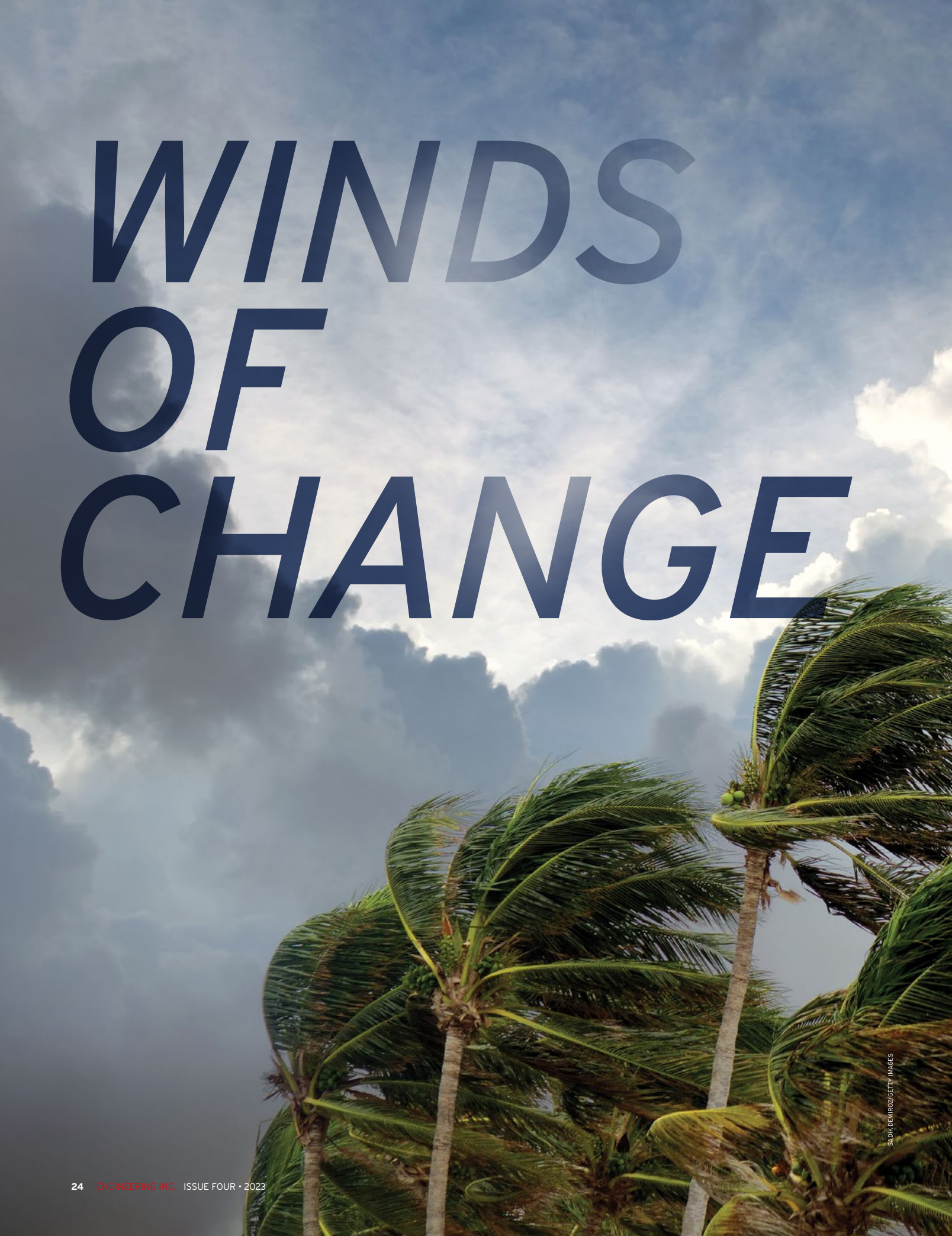
WINDS OF CHANGE



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HOW CLIMATE CHANGE IS IMPACTING LEGAL STANDARD OF CARE

BY SCOTT BURNHAM

REMINDERS ARE NOT NEEDED about the devastating impacts of climate change. The daily news takes care of that.

Yet, as claims alleging engineering firm accountability for climate change impact increasingly occur, design professionals should be reminded of their own responsibilities to factor for a changing climate—and the potential consequences if they fail to do so.

"Extreme weather events are becoming more common and more costly, which suggests that we might see an increasing number of claims that design professionals had a legal duty to design their projects to withstand such events," says Karen Erger, senior vice president and director of practice risk management for Lockton Companies, and a member of the ACEC Risk Management Committee.

According to the National Oceanic and Atmospheric Administration's National Centers for Environmental Information, in 2022 the U.S. experienced 18 separate weather and

NAVIGATING UNCERTAINTY IN A CHANGING CLIMATE

Clients and communities are increasingly looking at design professionals to create resilient structures that can better withstand future climate impacts, even when the nature of the impact—and the impact of nature itself—is uncertain. Faced with such a challenge, there are three ways to remain agile and effective amid constantly changing environmental conditions.

1. Learn constantly. Scientific understanding of climate change and impact projections are continually evolving. Engineering and design professionals should keep up with these changes and available technologies and design alternatives. Governments may revise building codes and regulations as the impacts of climate change increase. Staying informed and demonstrating awareness of changes can help avoid potential legal repercussions.

2. Communicate. No firm or professional can address the numerous challenges of climate change single-handedly. Climate experts can provide insight into how climate change may impact certain regions. Firms can use their expertise to ensure designs are tailored to client design objectives in the local environment. While ultimately clients decide a project's scope and budget, they can benefit by being informed of climate risks and potential mitigants. Such two-way communication can inform the design process to ensure results are both climate-responsive and in alignment with client and community needs.

3. Acknowledge uncertainty. Not all future climate impacts can be anticipated. Firms should be honest with clients about the inherent unknowns of climate-adaptive design. Uncertainty is not a weakness—it is understanding the complexities involved. Including contract clauses that recognize uncertainties can safeguard firms from unforeseen challenges and potential liability as the climate changes.

climate disasters that exceeded $1 billion dollars of damage, with a total cost exceeding $178 billion. In 2021, there were 20 billion-dollar damage events; 2020 had 22. For comparison, the early 2000s saw an average of about six climate events per year that caused at least $1 billion dollars of damage.

AT-RISK POPULATIONS ON THE RISE

The increasing instances of major climate events is a concerning trend made more so by the fact that large numbers of people are moving to areas vulnerable to the impacts of climate change. As New America's *The Future of the Coasts* article states, "Over 100 million Americans live on the U.S. coasts, and people are moving there at a faster pace than ever before." That's despite a steady increase in the frequency and severity of coastal flooding and storms. According to research from the University of Wisconsin-Madison and the United States Forest Service, as of 2020, more than 16 million homes were in fire-prone areas in the American West—an increase from roughly 10 million homes in 1990.

Growing populations in at-risk regions present a distinct challenge for engineering and design firms serving those areas. Yet, climate-related challenges suddenly seem to be everywhere. Even the mountainous eco-leading state of Vermont suffered from $3 billion dollars to $5 billion dollars of damage and economic loss from torrential rain and flash flooding in July 2023.

Most engineers proactively design for a 100-year storm (a storm of such intensity it has a 1 in 100 chance of occurring in any given year), yet such efforts may fall short given the frequency and devastation of recent climate events. The previous 100-year storm to hit Vermont came just 10 years earlier during Tropical Storm Irene, downgraded from hurricane status by the time it reached New England. Even 500-year storm measures are proving more frequent. During Hurricane Harvey in 2017, *The Washington Post* noted that Houston was "experiencing its third 500-year flood in three years."

STANDARD OF CARE

Design professionals are required to perform their services in accordance with the professional standard of care. Erger explains: "The standard of care requires the design professional to perform their services with the skill, care, and judgment ordinarily exercised by reasonable design professionals of the same discipline providing similar services at the same time and place."

What that standard requires is always evolving, and as our knowledge of climate change impacts grows, it may come to require design professionals to consider climate adaptation measures in their designs—or at least advise their clients of their availability.

A design professional can be found liable for negligence if they failed to meet the standard of care, which varies by loca-

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"Extreme weather events are becoming more common and more costly, which suggests that we might see an increasing number of claims that design professionals had a legal duty to design their projects to withstand such events."

KAREN ERGER
SENIOR VICE PRESIDENT AND DIRECTOR OF PRACTICE RISK MANAGEMENT
LOCKTON COMPANIES
ACEC RISK MANAGEMENT COMMITTEE

tion. In coastal cities, for example, the standard of care relies heavily on designing for rising sea levels and increased flooding. In the West, designs may need to account for extreme heat, drought, or wildfires.

THE LIMITATIONS OF CODES

Traditionally, the standard of care has been measured in part by whether a design meets the local code. It is a measure that hasn't held up to legal scrutiny. For example, in the case of *Henry Tang v. NBBJ, LP,* the court was asked to address liability for a child's death caused by a fall from the third floor of the Staples Center in Los Angeles. Even though the designs of the banister and the barrier were code-compliant, the designers were still found liable.

In its decision, the court explained: "Courts have generally not looked with favor upon the use of statutory compliance as a defense to tort liability." A code, the court stated, establishes only the "minimum standard of conduct," but does not preclude the finding that "a reasonable person would have taken additional precautions under the circumstances."

Code compliance issues are compounded further by the fact that many local codes that design firms rely on are based on historical data, and in some cases may be insufficient as design guidelines for future severe weather events given the rapid increase of climate change.

"A lot of things are in flux currently regarding this situation," says Andrew Ratzkin, general counsel for POWER Engineers and co-chair of the ACEC Legal Counsel Forum. "Building codes don't update evenly and vary across jurisdictions."

A survey done by the Federal Emergency Management Agency (FEMA) in 2020 discovered that 65 percent of municipalities across the country have not adopted modern building codes or design standards that adequately guard against the future impacts of climate change. Some of FEMA's own flood maps have been found to rely on historical conditions and do not account for projected sea level rise and extreme precipitation.

MITIGATE RISKS

Building codes and flood plain maps may not reflect future risks; in some cases, engineering and design firms may be advised to look further.

"They will want to understand the proposed project's vulnerability to climate and weather impacts and the potential need to respond to these in the design," Erger says. "They may need to research available weather data and projections and climate models and might also retain (or have the client retain) a climate consultant to further define the risks and test the accuracy, limitations, and applicability of any publicly available data. Good documentation of these investigations can help the design professional demonstrate that they exercised reasonable care in designing the project."

"While it will be smart for engineers to bring awareness of climate resilience considerations to a project and the client, engineers should not bear this burden alone."

ANDREW RATZKIN
GENERAL COUNSEL, POWER ENGINEERS
CO-CHAIR
ACEC LEGAL COUNSEL FORUM

BILLION-DOLLAR DISASTERS ON THE RISE

From 1980–2022, the U.S. experienced an annual average of 8.1 major climate events that caused at least $1 billion in damage. However, the annual average for the last five years (2018–2022) is 18 events, indicating an increase in disastrous weather events.

Select Time Period Comparisons of United States Billion-Dollar Disaster Statistics (CPI-Adjusted)

Time Period	Billion-Dollar Disasters	Events/Year	Cost	Percent of Total Cost	Cost/Year	Deaths	Deaths/Year
1980s (1980-1989)	33	3.3	$212.7B	8.1%	$21.3B	2,994	299
1990s (1990-1999)	57	5.7	$324.6B	12.4%	$32.5B	3,075	308
2000s (2000-2009)	67	6.7	$602.5B	23.0%	$60.3B	3,102	310
2010s (2010-2019)	131	13.1	$964.4B	36.9%	$96.4B	5,227	523
Last 5 Years (2018-2022)	90	18.0	$620.6B	23.7%	$124.1B	1,751	350
Last 3 Years (2020-2022)	60	20.0	$454.3B	17.4%	$151.4B	1,460	487
Last Year (2022)	18	18.0	$177.6B	6.8%	$177.6B	474	474
All Years (1980-2023)*	**371**	**8.4**	**$2,616.1B‡**	**100.0%‡**	**$59.5B‡**	**16,111**	**366**

Source: The National Oceanic and Atmospheric Administration's National Centers for Environmental Information

‡Cost statistics not included for Hurricane Idalia (August 2023)
*Statistics valid as of September 11, 2023

In Ratzkin's opinion, "While it will be smart for engineers to bring awareness of climate resilience considerations to a project and the client, engineers should not bear this burden alone.

"Engineers are a crucial part of the solution to adaptation challenges," Ratzkin says. "They shouldn't be penalized for attempting to reckon with future climate impacts on a project, or for decisions beyond their control. Otherwise, we risk promoting counterproductive behaviors and driving away the most capable firms—the 'best athletes'—who we need to be fully engaged in addressing these challenges, from critical and difficult projects."

For Erger, client communication and education can serve the client and firm equally well, offering both proactive and protective benefits.

"The design professional should educate the client about the potential impact of weather and climate events on the project and explain its proposed design solutions," she says. "Careful documentation of the design firm's recommendations and the client's decisions will avoid misunderstandings and also serve as evidence of the fact that the risks and potential solutions were discussed with the client."

MIND THE CONTRACT

For all the risks, responsibilities, and standard of care expectations placed on design professionals, the client—who ultimately controls a project's design objectives, scope, and budget—brings an additional set of concerns and responsibilities to the table. Tenants or partners can ramp up expectations for climate resilience in a project; local governments could introduce more stringent regulations and codes for climate-adaptive design and increase fines or liabilities for noncompliance. So clients may seek their own protections for future liability through contracts. It is something that needs to be on the radar of every design professional, says Erger.

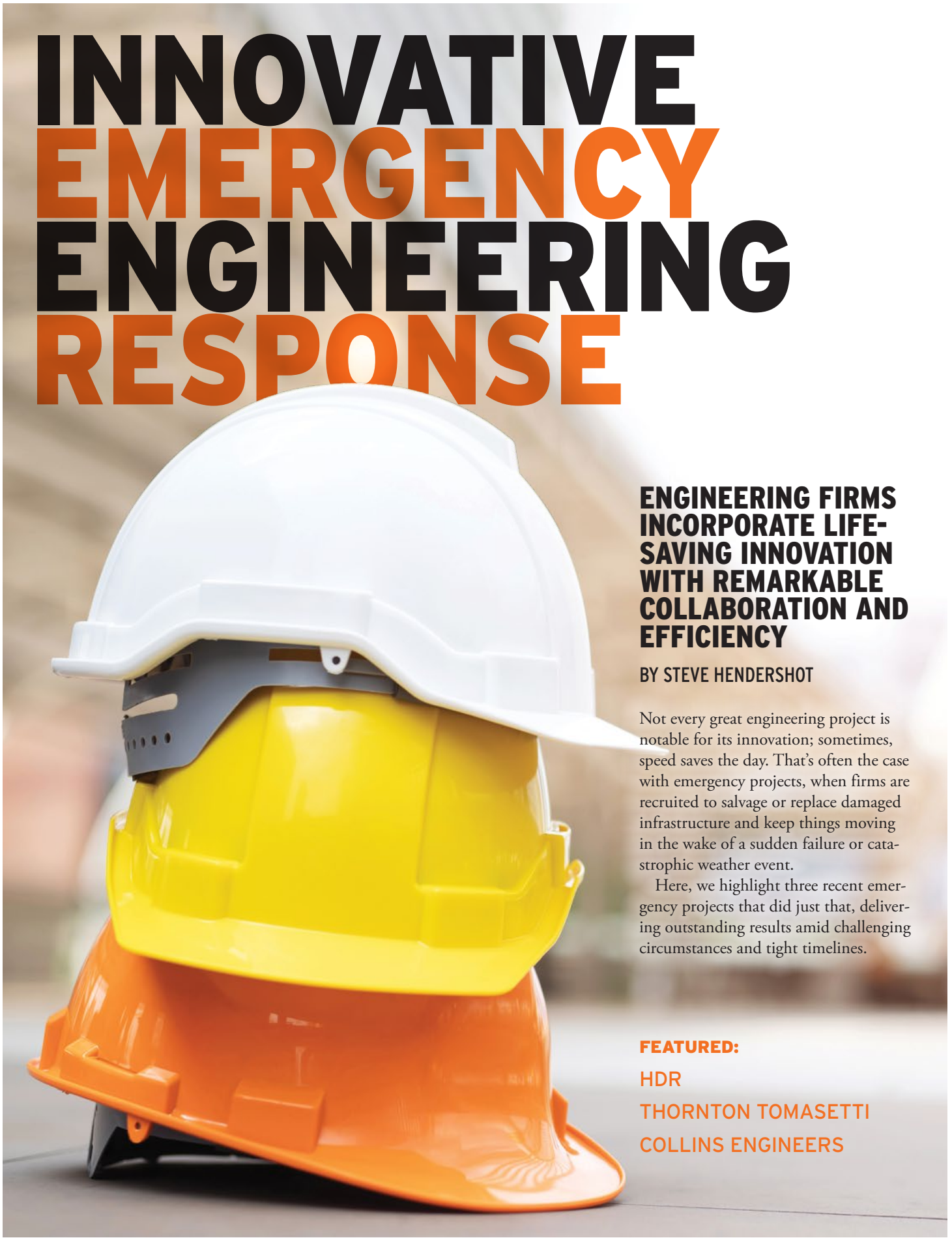
"Clients' contracts sometimes call for the design professional to warrant or guarantee their design, or to meet an elevated standard of performance, e.g., 'defect-free design'," she says. "Agreeing to contract terms like these creates real problems for design professionals, not just because these standards are unattainable but also because their professional liability insurance generally will not provide coverage for guarantees or warranties, or for the design professional's failure to achieve these standards beyond the normal standard of care.

"For this reason," Erger adds, "it's important for design firms to carefully review client-drafted contracts and do their best to negotiate such terms out of their agreements." ■

Scott Burnham *is a writer based in Waltham, Massachusetts. He has written for* Architizer, Metropolis, *Skanska, and* The Guardian.

BY CHAKARIN WATTANAMONGKOL/GETTY IMAGES

INNOVATIVE EMERGENCY ENGINEERING RESPONSE



ENGINEERING FIRMS INCORPORATE LIFE-SAVING INNOVATION WITH REMARKABLE COLLABORATION AND EFFICIENCY

BY STEVE HENDERSHOT

Not every great engineering project is notable for its innovation; sometimes, speed saves the day. That's often the case with emergency projects, when firms are recruited to salvage or replace damaged infrastructure and keep things moving in the wake of a sudden failure or catastrophic weather event.

Here, we highlight three recent emergency projects that did just that, delivering outstanding results amid challenging circumstances and tight timelines.

FEATURED:

HDR

THORNTON TOMASETTI

COLLINS ENGINEERS

RATTANKUN THONGBUN/GETTY IMAGES

A NEW BRIDGE FOR A HISTORIC PARK

The Fern Hollow Bridge was reconstructed in 18 months.

Pittsburgh's Fern Hollow Bridge connects three historic neighborhoods by stretching across the steep ravines of Frick Park, a picturesque natural reserve that belonged to a steel baron before opening to the public in 1927. The area surrounding the bridge is so densely wooded that it's easy to forget that it's also a thoroughfare accommodating 21,000 vehicles per day.

When the bridge collapsed early on a January morning in 2022, it fell more than 100 feet onto a recreational trail. The good news was that no one was killed. The bad news was both the damage to the park and the loss of a crucial and unique artery, causing substantial disruptions and delays to Pittsburgh commuters.

City officials quickly turned to their counterparts at the Pennsylvania Department of Transportation (PennDOT) to coordinate a bridge replacement project. Within a week, PennDOT turned to two companies, HDR and contractor Swank Construction Company, to expedite the design and construction of a replacement bridge.

From the beginning, the primary constraint was time: trying to get a new bridge constructed as quickly as possible. When HDR's project team mapped out a potential project timeline, it quickly identified that traditional methods wouldn't work. "If we tried to do everything in series, it would take four to five years," says Jason Fuller, an HDR vice president.

So instead, HDR and Swank created a plan to pursue elements of the project concurrently, reducing the projected completion time to about 18 months. (It took them 11 months to partially reopen the bridge.)

But the new plan required intensive coordination. The Swank and HDR teams met weekly, and "everybody on the project dropped everything to be on that weekly call," says Fuller. "We needed everybody there, and everybody did it."

HDR worked quickly to complete the geotechnical engineering by examining original borings from the collapsed bridge and new borings from the foundation site. Fuller's team also investigated the potential to build a larger bridge but ran into issues related to right-of-way and potential destruction or displacement of historical buildings. Another benefit of using the existing footprint was the ability to reuse some existing bridge walls and abutments, which weren't damaged because the previous bridge collapsed inward. While HDR's design for a new three-span bridge hewed to the same width as the old bridge, it also managed to better accommodate multimodal traffic by adding a 10-foot-wide shared-use path that's separated from car traffic.

Jason Fuller
Vice President
HDR

PROJECT: REBUILDING THE FERN HOLLOW BRIDGE AFTER A SUDDEN COLLAPSE

FIRM: HDR PITTSBURGH

"We did most of our hard work in those first three months to get the deep foundations and then the piers and then the abutments—to get that stuff up, and then we knew the beams were coming," says Fuller.

Yes, the beams. Getting the collection of 152-foot-long, precast concrete beams to the construction site proved to be nearly as much of a challenge as the bridge design. The HDR team paraded through the campuses of Carnegie Mellon University and the University of Pittsburgh with a police escort while residents watched on lawn chairs.

But it worked, and the project was successfully completed with astonishing speed: City and state officials gathered at the new bridge for a ribbon-cutting ceremony in December to reopen the bridge to traffic, less than 11 months after the old bridge's collapse.

DRY SCIENCE

A flood barrier holds back waters during heavy rainfall.

The New York Hall of Science (NYSCI) learned a lesson in physics the hard way in the wake of Hurricane Ida, which hit New York as a post-tropical cyclone in late 2021: Water flows downhill. The museum is located at the very lowest point of the watershed in its community in Queens, and it lost about half of its exhibits after extensive flooding.

Rainfall in the area "literally all flows down towards the main entrance of the building," says Aditya Bhagath, a senior associate at Thornton Tomasetti.

NYSCI hired Thornton Tomasetti to perform a climate risk and resilience assessment after the heavy rainfall and stormwater flooding caused by Ida, with the goal of ensuring the museum would be better protected against future weather events. As the Thornton Tomasetti team conducted a hydrologic analysis to predict the building's future vulnerability, one thing that became clear is that "not all storms are the same," says Julie Pietrzak, a principal at Thornton Tomasetti and leader of the firm's resilience practice.

Some hurricanes allow for days of preparation and are notable for destructive winds. Others—such as Ida—intensify quickly and dump high volumes of water into an affected area in a short time. NYSCI remains especially vulnerable to the latter kind of weather event, which means its facility needs passive countermeasures that remain indefinitely in place—and thus perpetually ready for action.

At Thornton Tomasetti's urging, NYSCI adopted a series of flood-mitigation measures that ranged from cleaning existing storm drains to ensure better performance to installing a system that prevents water backflow during a flood. The intervention most obvious to museum visitors is a custom-designed perimeter storm wall using a product called Muscle Wall—a series of water-filled barriers covered with an impervious membrane that surrounds the building and helps slow the spread of floodwaters.

The museum also agreed to change its main entrance, because the previous one was especially vulnerable to flooding. And although the museum reopened in February 2022, Thornton Tomasetti's work with NYSCI continues; next up is a project to floodproof individual rooms inside the museum that house critical systems.

Aditya Bhagath
Senior Associate
Thornton Tomasetti

Julie Pietrzak
Principal
Thornton Tomasetti

PROJECT: FLOODPROOFING THE NEW YORK HALL OF SCIENCE

FIRM: THORNTON TOMASETTI NEW YORK CITY

Collins Engineers was able to keep a bridge over the Yellowstone River open as it repaired a perforation in the structure.

PERFECT PATCH

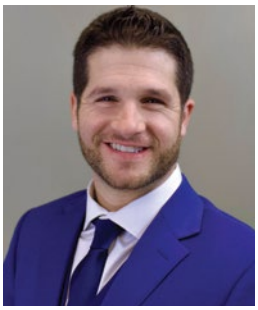
Severe flooding of Montana's Yellowstone River in June 2022 destroyed homes and washed away roadways and bridges throughout a region that includes Yellowstone National Park. As Montana Department of Transportation (MDT) officials scrambled to respond, they identified a damaged out-of-service railway bridge near the city of Livingston that ran parallel to a popular highway bridge on U.S. 89 and decided to remove it before it posed an additional safety hazard.

During the railway bridge demolition in August, shrapnel from the explosion punched a hole in the webbing of the automotive bridge's exterior girder nearly a foot wide—and suddenly MDT had yet another piece of damaged infrastructure to address.

MDT responded by calling in a team from the Denver office of Collins Engineers, expediting the process by repurposing an existing Collins contract. MDT was "able to mobilize us pretty quickly in an emergency scenario," says Michael Banasiak, regional manager of Collins' Denver office.

The Collins team was on site within a week and conducted a thorough analysis of the site, which included a magnetic particle examination and a drone-captured, three-dimensional model of the bridge and surrounding area. The bridge also was quickly reopened to accommodate one lane of traffic—a key consideration given its crucial role in supporting regional trucking.

"We determined that due to the location of the perforation—close to the bearing on the extra girder of a four-girder bridge—we were able to keep the bridge open during the design and repair process," Banasiak says.



Mike Banasiak
Regional Manager
Collins Engineers

PROJECT: REPAIRING A DAMAGED BRIDGE OVER THE YELLOWSTONE RIVER

FIRM: COLLINS ENGINEERS DENVER

The Collins team also concluded that while debris had struck several areas of the U.S. 89 bridge, the damage was limited to the hole. In about a month, Collins proposed a plan to fix the bridge by adding fill and splice plates to the affected area. MDT approved the plan and also tapped Collins to manage the on-site construction—both the repair to the U.S. 89 bridge and the cleanup of the demolished rail bridge. Banasiak supervised the work throughout the repair process, while also navigating supply chain challenges to ensure that the construction team had access to steel components.

The bridge reopened in January. ■

Steve Hendershot *is a journalist based in Chicago. He has contributed to* Crain's Chicago Business, Chicago *magazine, Chicago's NPR affiliate WBEZ, and the Project Management Institute's* Projectified *podcast.*

ACEC President and CEO Linda Bauer Darr and ACEC EVP Steve Hall listen during a tour of the Able Pump Station in Dallas.

Roadshow Makes Successful Stop in Dallas

THE EVENT RECOGNIZES THE CONTRIBUTIONS OF ENGINEERING FIRMS AND PUBLIC WORKS PROFESSIONALS

Making its third stop since being launched, the Engineering and Public Works Roadshow visited Dallas in September to celebrate the city's new Able Pump Station.

A product of the partnership between ACEC, the American Public Works Association (APWA), and the American Society of Civil Engineers (ASCE) and established in 2021, the Roadshow highlights the meaningful, transformational work of engineers and public works professionals throughout the U.S.

The Able Pump Station is a top award winner for excellence in both ACEC and ASCE state and national competitions. The station is designed to provide 100-year flood protection to approximately 3 square miles of highly desirable land. It's a stellar example of how engineering firms can adapt the built environment to rapid changes in weather and climate.

The event featured leaders of ACEC, APWA, and ASCE, along with federal, state, and local officials. HDR, which designed the facility, was also spotlighted.

"Projects such as the Able Pump Station and the engineers at HDR who brought it to fruition are the success stories we are highlighting around the country as our Roadshow inspires the next generation of engineers and public works professionals to join us in combating climate change and preparing for the future," said ACEC President and CEO Linda Bauer Darr.

Attendees at the Roadshow event.

The Able Pump Station was the latest stop on the Engineering and Public Works Roadshow (exterior shown).

The audience looks on during Congressman Marc Veasey's remarks at the Able Pump Station.

PULLING TOGETHER

COLLABORATION IS KEY AS ACEC WASHINGTON TACKLES CRITICAL INDUSTRY ISSUES AMID AN INCREASED DEMAND FOR ENGINEERING SERVICES

BY STACEY FREED

An aerial view of Diablo Lake, a reservoir in the North Cascade mountains of northern Washington.

FRANCK REPORTER/GETTY IMAGES

For many years, the Washington State Department of Transportation (WSDOT) built culverts under roadways to direct streams. That effort may have been great for vehicle traffic, but it turned out it was harmful to native salmon, which see the dark tunnels as places where predators might lurk. Consequently, salmon were being cut off from their spawning spots, and their population was in decline.

Indigenous tribes, which held the fishing rights, sued Washington State. The case went all the way to the U.S. Supreme Court, which ruled in favor of the tribes. Washington State had to open access to the fish habitats. Since then, the state has incorporated a major program to replace the culverts. ACEC Washington member firm GeoEngineers answered the call to help. (In fact, GeoEngineers' projects were national finalists in ACEC Washington's Engineering Excellence Awards in 2020.)

The efforts emphasize the importance of engineers, says Van Collins, president and CEO of ACEC Washington. "But for engineers, we would have no civilization," he says. "It sounds over the top, but it's not. Who can live without water, heat, a sewer system?"

It's Collins' job, along with Meetings and Membership Manager Claire Inslee and a 10-member board, to make sure that the state's engineering professionals can do their part to keep the world spinning, and do so profitably and smartly—through legislative efforts, education, and/or collaboration with other organizations.

CARING CULTURE

ACEC Washington is a big tent that includes three membership categories. Regular members hold a professional engineer license; affiliates support the industry and have access to key decision-makers; and associates work on engineering projects that don't require a license, such as environmental or scientific work. Connections between members are all part of the cohesive and caring nature that runs through the entire organization.

Ask Sherry Harris, director of ACEC Washington and CEO of Ergosync Engineering, about the culture of the Washington Member Organization. "If everybody wins, then I win, and I want to create a business climate where we all get to win," Harris says. "ACEC is an organization built to embrace the interests of all engineering companies."

Ben Upsall, director of ACEC Washington and principal geotechnical engineer with GeoEngineers, emphasizes the spirit of collaboration among ACEC Washington members. "We'll have competitors go at each other's throats for a project, but they will share how they deal with a client with arduous contract terms," Upsall says. "The leadership and the board have worked hard for decades to build this in, and it's effective for members."

In addition, Collins has made a point to collaborate with outside groups to work on government affairs and lobbying efforts. "We have a natural affinity with a lot of others in the A/E/C community," he says.

This attitude funnels into the Member Organization's purpose, which is to promote the value the engineering profession brings to society and to advance the business interests of ACEC Washington members.

ACEC WASHINGTON AT A GLANCE

Begun in 1966, ACEC Washington now has a total of 145 firms that perform professional engineering and scientific services. Those companies bring over 8,500 employees to participate in the organization's 25 different committees, subcommittees, task forces, and business practice forums and in myriad networking and educational opportunities. At the helm are Board Chair Crystal Donner, Board Chair-Elect Vince Loftus, and President and CEO Van Collins.

"If everybody wins, then I win, and I want to create a business climate where we all get to win. ACEC is an organization built to embrace the interests of all engineering companies."

SHERRY HARRIS
DIRECTOR
ACEC WASHINGTON


SeaTac North Satellite Modernization


Sound Transit Northgate Link Extension


Climate Pledge Arena

MAKING THE DREAM WORK

ACEC Washington achieved a big win in 2021, successfully lobbying the state government to raise additional revenues through the gas tax to fund transportation improvements—even as the state already had one of the highest gas tax rates in the nation, Collins says. The Member Organization partnered with other trade groups, including the American Institute of Architects, Associated General Contractors, the American Trucking Associations, and the Association of Washington Business, to push for the provision in the state's Climate Commitment Act.

While state law limits gas tax revenue to use for the highways and ferry service, ACEC Washington's history as a force at the capital propelled it along to address multimodal transportation solutions. "We had consistent, coherent talking points and the support of the transportation chairs. We didn't do anything flashy," says Collins, whose background as an engineer and as a lawyer helped him lay out the plan's vision.

He knew the issue wasn't just about commuters. "Alfalfa growers in Eastern Washington have to get their products to the ports to ship to Asia, one of their largest markets," Collins says. "There's a lot of money tied up in that kind of economic development. At the same time, concerns of the environmental community needed to be addressed by providing incentives and monies for transit and buses. We had a full-dimensional transportation solution."

These considerations influenced a "vision of what we were trying to accomplish in terms of the build-out, in terms of the maintenance and the economic development, and how transportation helps that while maintaining a robust quality of life," Collins says.

In more recent times, the Member Organization has been working on various contract issues such as Qualifications-Based Selection (QBS) and indemnity clauses.

ACEC Washington is providing QBS education for owners and agencies in the state. Operating on a QBS basis is not a state requirement, so agencies must choose to adopt the standards. "Van Collins has gotten through to several clients, public and private, to explain the virtues of the process," Upsall says.

"Contractors are being choosy. Engineers are having to say 'no go,' sometimes for the first time in their lives."

BEN UPSALL
DIRECTOR
ACEC WASHINGTON

"But for engineers, we would have no civilization. It sounds over the top, but it's not. Who can live without water, heat, a sewer system?"

VAN COLLINS
PRESIDENT AND CEO
ACEC WASHINGTON

U.S. 101 Siebert Creek Fish Passage Barrier Removal

Padden Creek before and after (below)

To tackle the anti-indemnification statute, ACEC Washington created a task force to push forward the effort to standardize and clarify it. The goal is to amend the current statute to eliminate ambiguous language and to replace it with a standard indemnification provision that all public entities will be required to use.

"This is similar to what has already been accomplished in Arizona through ACEC's leadership in that state," Collins says. "It will be a two- to three-year effort of getting our members to engage with their local districts and legislators to convey the message on how projects are procured and delivered. We're researching real-world examples that show why the anti-indemnification statute as it stands is a problem."

There are several other issues ACEC Washington is researching and educating its members about:

1. **Insurance costs.** "These can be so great that contractors and engineering companies are opting out," Harris says.
2. **Alternative delivery.** "Design-build is fraught with risk management perils for the consulting industry," says Vince Loftus, chair-elect of ACEC Washington and vice president of J-U-B Engineers.
3. **Artificial intelligence (AI).** ACEC Washington's Fall Conference focused on how AI will impact the engineering industry. This included discussions on the implications of its use, liability, how to create internal policies around its use, and how firms can protect themselves.

GROWING PAINS

With many new and large projects being funded by the Infrastructure Investment and Jobs Act, ACEC Washington's efforts may be more important than ever as the marketplace for engineers continues to grow. The most daunting challenge for members and for the state may be managing growth.

"Be careful what you wish for," Upsall says. "It's a great time for the A/E/C industry, particularly in the transportation market, but WSDOT is seeing issues in the reduction in competitive bidding."

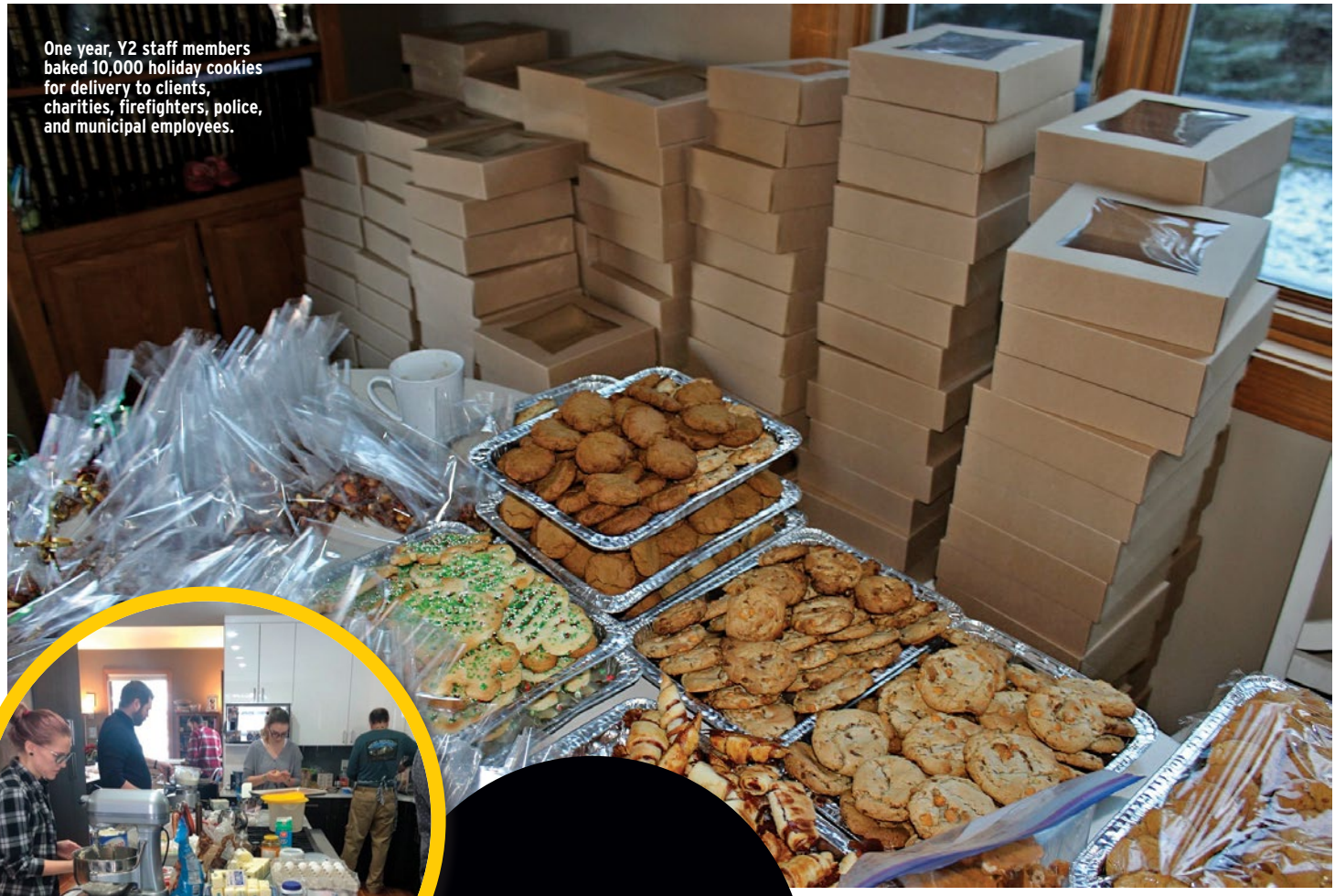
He cites some examples: Some nearly billion-dollar projects have only two bidders instead of the traditional three. There's a large project that has only one bidder because there's a contractor who is well aligned for it, and other firms don't want to waste their time chasing a project they won't win.

"Contractors are being choosy," Upsall says. "Engineers are having to say 'no go,' sometimes for the first time in their lives."

Combine the increasing project load in the Pacific Northwest with the labor shortage, and ACEC Washington has its work cut out for it. To address these issues, the Member Organization is building up the industry's bench through a variety of initiatives, such as the ACE Mentor Program for high schoolers and a young professionals' program. It's also addressing barriers that exist for engineering companies in the design-build delivery model through initiatives to bring more small companies onto the playing field through the diversity, equity, inclusion, and belonging committee chaired by Harris. There's also a class in core competencies for professionals each month.

Says Collins: "The thing about the membership of ACEC is that the quality of the people involved is incredibly high. They're delightful to work with." ■

Stacey Freed *is a writer based in Pittsford, New York, who has contributed to* This Old House, Professional Builder, *and* USA Today.



One year, Y2 staff members baked 10,000 holiday cookies for delivery to clients, charities, firefighters, police, and municipal employees.

SMALL BUT MIGH

Wyoming's Y2 Consultants makes an outsized impact on its community

BY MICHELE MEYER

For once, Zia Yasrobi was speechless. He'd received the Melvin Jones Fellowship Award, a humanitarian honor named for the Lions Clubs International's founder. Yasrobi was recognized for his efforts to support the organization for 34 years.

"A big, strong guy—and he was in tears," recalls former Jackson Hole Lions Club President Michael Schrotz.

That's because humanitarian causes touch Yasrobi's heart—and that of his wife, Brenda Younkin. The couple, co-owners of Y2 Consultants in Jackson, Wyoming, place corporate social responsibility efforts at the center of their firm's company culture.

In America's least populated state and wealthiest county (Teton), Y2 has built a reputation not only for civil and structural engineering, planning, land surveying, and natural resource management, but also for volunteerism and generosity.

"We make our living from the community and the region, so we feel it's important to give back and leave it better than we found it," Yasrobi says. "The more you put into a community, the more you get out of it."

HUGE FOOTPRINT

Philanthropy was a high priority when Y2 opened in 2010. Now, even with only 36 full-time staffers, the firm's altruism footprint is huge.

TY

Two-thirds of employees give a combined 1,000 PTO hours annually to their communities, with many serving on boards of organizations. And from the firm's yearly profits, 15 percent—or $30,000 to $50,000—is donated to charities across the state.

Yasrobi and Younkin don't broadcast such largesse—or keep score. But news travels fast in a state known as "a medium-size town with really long streets," as former Gov. Edward Herschler once said.

Y2's Jackson headquarters is located near Grand Teton National Park. Its offices in Cheyenne and Pinedale also are located amid natural beauty. The firm attracts engineers, planners, surveyors, and range scientists who are passionate about the land and wildlife around them—and want to give back to their communities. "So much of Y2 is built around a culture of giving," Younkin says. "You get like-minded people."

You also get a tight-knit community. One year, 25 staff members gathered in the couple's kitchen to bake 10,000 holiday cookies for delivery to clients, charities, firefighters, police, and municipal employees. "They don't always get a lot of thanks, so we want to show our appreciation," Younkin says.

Similarly, paying staffers for their time—in whole or in part, depending on the time commitment—when they volunteer elsewhere "is investing in the community, which is where our business comes from," she says. "The bottom line has to work, but supporting your staff is how you keep your staff. Our dedicated and enthusiastic employees are our most valuable asset."

Given its size, Y2 doesn't have a need for a community service steering committee. Workers choose passions to follow, requesting paid time off or financial grants.

"Our firm has a whole different way of doing things," Younkin says. "One of our strengths is we're flexible. Zia and I have a very open-door policy about everything."

Y2 staff's time and money have helped the Elks Club, Boy Scouts, Wildlife Society, Habitat for Humanity, and various food banks and 4-H programs.

"We're very big supporters of 4-H, which teaches kids business and life skills—and helps pay for their education,"

5 WAYS FIRMS CAN INSPIRE A SPIRIT OF GENEROSITY

No matter how tiny your company is, you can serve your community in big ways. Here's how Y2 Consultants galvanizes giving among its small team:

1. **Say yes.** Empower your employees to choose where they give time and money.
2. **Be an example.** Employees will follow your lead.
3. **Share the spotlight.** When Yasrobi was named a fellow of the Wyoming Society of Professional Engineers in 2022, he credited co-workers by name.
4. **Honor your workers.** Recognize their giving efforts, and ask affiliated associations to do the same.
5. **Actively listen.** Consider your employees' and clients' ideas—and take action on what you hear.

says Yasrobi, who's known for frying 3,600 eggs each year at an annual Lions Club fundraiser—while also putting many people's meals on his tab.

Y2 is also a majority female-owned business (by Younkin) and hires many women for its technical and engineering roles, so it's no surprise the company also supports budding young leaders. The firm annually sponsors $500 science, technology, engineering, and math scholarships for two young women entering college. "Those are historically male-dominated careers," Younkin says. "Anytime we can support women, we do."

"So much of Y2 is built around a culture of giving. You get like-minded people."

BRENDA YOUNKIN
OWNER
Y2 CONSULTANTS

"We make our living from the community and the region, so we feel it's important to give back and leave it better than we found it. The more you put into a community, the more you get out of it."

ZIA YASROBI
OWNER
Y2 CONSULTANTS

FACING CHALLENGES

Born in Iran, Yasrobi moved to the U.S. on his own at age 17 in the mid-'70s. Named Zia—Persian for "light"—he was fluent in English, thanks to an American tutor in childhood.

Life wasn't always easy, but he'd rather not offer details. "You get what you put into it," he says. "I chose my country and am proud I did. I have found nothing but love and support here. They've taken care of me when I needed it."

Life wasn't always easy for Younkin, either. She was raised on a working ranch in rural Nebraska and, from an early age, fixed tractors and cooked for large groups.

Y2 began as Zia's one-man operation, while his wife worked full time as research science director at Teton Science Schools and did Y2's books on weekends.

"Zia said he was going to do it all on his own," says Younkin, with a chuckle. "That lasted six weeks. He's an amazing engineer. But day-to-day management is not his jam."

Fortunately, it is hers. As the firm's majority owner, COO, and CFO, Younkin has a background in range science and environmental policy. She now runs Y2's daily operations and natural resources department.

She joined Y2 full time in 2013. In 2017, Y2 acquired Pierson Land Works, a 37-year-old survey and planning firm literally next door to Y2. Then in 2020, Y2 acquired Western Research & Development, a 41-year-old civil design, surveying, permitting, water rights, and planning firm in Cheyenne. That created a multidisciplinary team with offices in Jackson, Cheyenne, and Pinedale to serve clients across the country.

The couple is grateful they can pay back the generosity they've experienced in their lives. Among causes dearest to Younkin's heart is the Community Safety Network, a domestic violence shelter in Jackson.

"We have resort communities that are pressure cookers for domestic violence," she says. "It's amazing and terrifying how prevalent domestic violence is. And telling women to 'just leave' is not a solution. It's not that simple. You need the financial ability to leave, and a two-bedroom rental apartment can be more than $4,000 a month. It's brutal."

Being able to help families in bad situations "is important, and it's healing," Younkin says.

She adds: "I'm a firm believer that if you do good things, good things will come to you." ■

***Michele Meyer** is a management and marketing writer based in Houston. She has written for* Forbes, Entrepreneur, *and the International Association of Business Communicators.*

In 2023, Y2 bought two pigs in Teton County, one of which was donated to the Senior Center. Y2 also bought a steer in Sublette County, born and raised on a local ranch that runs cattle in the Upper Green.

A Y2 staff member with Jennie Gordon (right), First Lady of Wyoming, at a Salvation Army fundraiser.

Y2'S GIVING BY THE NUMBERS

Each year, Y2 Consultants gives a significant amount to charities and local organizations. Here's the breakdown for the past year:

15 percent of profits to philanthropy

$25,000 to Old Bill's Fun Run, a fundraiser for 4-H and other nonprofit organizations

$10,000 to other charities

40-50 turkeys donated to the Elks Club's community Thanksgiving meal

3,600 eggs donated and cooked at Lions Club breakfasts

1,000 hours of PTO put toward volunteering

Zia Yasrobi (left) poses with Michael Schrotz (right) at an annual Lions Club fundraiser.

2023 YOUNG PROFESSIONALS SHINE IN FALL CONFERENCE SPOTLIGHT

RECIPIENTS ARE AWARDED FOR OUTSTANDING CONTRIBUTIONS TO THE ENGINEERING PROFESSION

AT THIS YEAR'S 2023 FALL CONFERENCE at the JW Marriott Austin in Austin, Texas, ACEC presented five engineers with the prestigious Young Professional of the Year Awards. From these five finalists, Erik Walega, staff engineer at RESPEC Company in Rapid City, South Dakota, was named the ACEC 2023 Young Professional of the Year.

Employed by ACEC member firms, award recipients were selected by the ACEC College of Fellows for demonstrating outstanding contributions to the engineering profession despite being in the early stages of their careers. Nominations are made through ACEC's 51 state and regional Member Organizations. Here, we spotlight the 2023 Young Professionals of the Year.

Jessica Ross (right) is on the Fredonia High School Women in STEM Scholarship Committee, which gives an annual scholarship to one graduating young woman.

JESSICA ROSS
WATTS ARCHITECTS & ENGINEERS
BUFFALO, NEW YORK

In her 14-year career, Jessica Ross has evolved from a college intern to senior associate at Watts Architects & Engineers. She's also an engineering leader in the ACEC New York Western Region.

She has developed a niche in complete streets design, and in the last five years has transitioned from lead design to managing millions of dollars' worth of award-winning projects.

This includes working with area transit agencies to optimize public transportation in heavily utilized city corridors and collaborating with bicycle and pedestrian safety advocates to deliver safe Americans with Disabilities Act-compliant access and effectively bridge gaps for surrounding neighborhoods.

Many of Ross' projects have included her involvement in the grant funding application to promote smart growth and sustainability. Those efforts include helping secure millions of dollars in grant funding for the City of Buffalo's Niagara Street project, which features stormwater capture and green infrastructure filtration.

Most recently, she has given PDH presentations on complete streets projects for the American Public Works Association and the Institute of Transportation Engineers.

The mother of three daughters says she hopes her efforts set an example that girls can "run the world!"

RYAN DELVES
STANLEY CONSULTANTS
CHICAGO

During a high school trip to Australia, Ryan Delves climbed to the summit of the Sydney Harbour Bridge. This feat fueled his passion for transportation infrastructure and for designing complex projects that leave a lasting impact on society.

As transportation department manager at Stanley Consultants, Delves' focus for the last decade has been completing work on the Illinois Tollway's massive $3.4 billion Elgin O'Hare Western Access Project, designated a Project of National and Regional Significance by federal transportation legislation. In Delves' role as transportation department manager, he focuses on the $350 million Elgin O'Hare/Western Access Interchange.

Delves also holds several roles on the Design Corridor Management Team, including project manager for the York Road Reconstruction Project as well as the Western Landside Reserve Area Earthwork Project.

Once completed, the massive tollway project is projected to enhance economic development within the 19 communities and townships along the project corridor, while dramatically improving mobility and freight connectivity throughout the region.

Ryan Delves stands at the north abutment of Bridge Number 1678, a 426-foot steel-beam bridge that provides local access to the west side of O'Hare International Airport.

Erik Walega collects groundwater samples for environmental remediation efforts.

ACEC 2023 YOUNG PROFESSIONAL OF THE YEAR

ERIK WALEGA

RESPEC COMPANY

RAPID CITY, SOUTH DAKOTA

Erik Walega is a licensed Professional Engineer in two states and a licensed Professional Geologist in another state, and is actively in the process of earning Professional Engineering licensure in Saskatchewan, Canada.

His background is in hydrogeological engineering, and he has been involved in several hydrogeological projects, including modeling of mine inflows and dynamic multiphase gas field systems. He also contributed to the design of a first-of-its-kind mine shaft plug, as well as other projects spanning multiple engineering and geoscience disciplines.

Since joining RESPEC Company in 2021, Walega has worked on more than 25 projects, including the Mosaic K1/K2 Shaft Decommissioning Project, which was awarded the 2023 Exceptional Engineering/Geoscience Project Award by the Association of Professional Engineers & Geoscientists of Saskatchewan.

Walega also led research projects for the Solution Mining Research Institute on properties of domal and bedded salt, and procedural recommendations for a gas field that utilizes pressurized water injection wells to contain gas seasonally.

JON MARKT

HDR

OMAHA, NEBRASKA

Since joining HDR, Jon Markt has become a leader in transportation planning and analysis, including developing and refining transportation operations, safety, and planning models.

He is a regional and national expert in dynamic traffic assignment models, predictive safety analysis models, planning for autonomous and connected vehicles, and Transportation Systems Management and Operations.

As these are all relatively new transportation industry tools, Markt has been taking the lead both regionally and nationally. He has become a go-to resource within HDR on connected disciplines.

One example is the Interstate 80 Automated Corridors Study, where he led a multidisciplinary team in developing two innovative analysis methods that have since been adopted by four additional DOT agencies.

Another notable project was the Lincoln CityWide Crash Study, including an innovative web application to provide a detailed analysis of over 40,000 crashes resulting in $1.5 billion in societal costs. The analysis was critical in identifying 25 intersections and three corridors for safety improvements.

Jon Markt speaks on the Interstate 80 Automated Corridors Study, which was an ACEC Honor Award Winner, at the ITS Heartland Conference in Lincoln, Nebraska.

Jessica Splittgerber leads a roundtable discussion prior to the Transportation Improvement Conference. The roundtable was the first stand-alone event put on by the ACEC Wisconsin Emerging Professionals Committee.

JESSICA SPLITTGERBER

EMCS

WAUSAU, WISCONSIN

A career in engineering has allowed Jessica Splittgerber to combine her technical focus with a passion for learning, collaboration, and teaching. After demonstrating transportation expertise in diverse projects such as airport pavement management and roadway design, she found a way to further expand her industry impact.

A 2022 graduate of ACEC Wisconsin's Leadership Institute, she suggested the creation of a young professionals' group within the Member Organization. The group is designed to expose more young engineers to the ACEC umbrella during the early stages of their careers.

The association board unanimously approved the idea, and Splittgerber is now chair of the ACEC Wisconsin Emerging Professionals Committee. The new group has already taken an active role in the Member Organization's Legislative Day program by hosting a pre-event to help orient those making their first legislative visits.

Although still early in her career, her employer EMCS, the engineering profession, and her community have already benefited from her passion to get involved. ■

Bigger Buyers, Smaller Sellers—M&A Persists Amid Rising Interest Rates

BY NICK BELITZ

Propelled by burgeoning backlogs, a resilient economy, and a federal funding windfall, A/E industry deal-making remained red-hot in the first half of 2023. Morrissey Goodale tracked 226 U.S. mergers and acquisitions in the first six months of 2023, a figure only surpassed by the blistering pace of 263 deals announced over the same time period in 2022.

The interstate deal activity index—the percentage of transactions that take place across state lines—is an excellent indicator of how confident buyers are feeling about their businesses. An index near 50 percent reflects risk-averse buyers and an industry in recession. Figures above 60 percent indicate a thriving industry with buyers willing to invest beyond their home states. For the first half of 2023, the interstate deal activity index reached a record 70.8 percent, a sign that buyers are feeling remarkably optimistic.

The outlook is especially bullish for engineering firms serving infrastructure markets as buyers follow the money to sectors that are expected to receive massive public-sector funding infusions. One-third of all domestic deals in the first half of 2023 involved sellers providing water and wastewater services, an increase of 27 percent from the first six months of 2022 and the largest year-over-year growth of any market sector. Sellers serving transportation markets accounted for one-quarter of transactions, while sellers providing services to the power market represented one-eighth of deals.

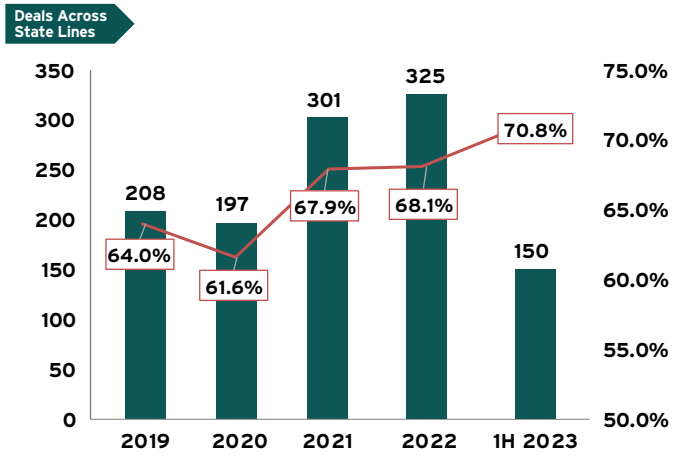
Larger, more capitalized firms that have the financial strength to weather economic storms have become more aggressive in the current M&A environment. The median acquirer through the first six months of the year had revenues of $91 million—up over 50 percent from the median size of $60 million for the same period last year.

With deeper pockets, bigger buyers are better positioned to take calculated risks to diversify and expand their businesses, gaining a significant advantage over their smaller counterparts. In fact, nearly half (45 percent) of all domestic deals in the first half of 2023 involved an *Engineering News-Record (ENR)* Top 500 buyer, compared to 35 percent last year.

The most active *ENR* 500 buyer in the first half of 2023 was **Bowman Consulting Group** (Reston, Va.), which undertook six acquisitions and continued its buying spree in June with the acquisitions of **Infrastructure Engineering** (Brea, Calif.) and MTX Surveying (Marshall, Texas). The firm added more than 200 employees in the first six months of the year through acquisitions.

Recapitalized by Peak Rock Capital in 2021, **SAM Companies** (Austin, Texas) has also been prolific. It added over 90 employees through its five acquisitions in the first half of the year, which included MTPLS Surveying & Mapping (Baltimore) in May and AXIS GeoSpatial and AXIS GeoAviation (Easton, Md.) in June.

Interstate M&A Activity



Other *ENR* 500 engineering firms particularly active in the first half of 2023 were **NV5** (Hollywood, Fla.), **Universal Engineering Sciences** (Orlando, Fla.), **Salas O'Brien** (Irvine, Calif.), **IMEG** (Rock Island, Ill.), and **RMA Companies** (Rancho Cucamonga, Calif.), each of which announced four deals through June.

While buyers may be bigger this year, conversely, sellers have gotten smaller. The median-sized seller for the first six months of this year had revenues of $3 million and 19 employees, down from $3.2 million and 21 employees for the same period last year.

We believe this data indicates private equity-backed, publicly traded, and employee-owned acquirers alike are reevaluating and fine-tuning their M&A strategies, opting for smaller acquisitions that offer gateways into untapped markets that may be otherwise elusive due to intense competition, scarcity, and eye-popping valuations for acquisitions of scale. Although undeterred by higher interest rates, many buyers are responding by pursuing smaller deals because they require less leverage. While headline-making transactions involving *ENR* 500 firms necessitate significant borrowing, larger firms can close smaller deals without relying on the debt markets. Moreover, the ongoing demand for engineering professionals in a tight labor market supports the "acqui-hire" approach to talent acquisition, especially among the industry's leading firms.

The median acquisition size by private equity-backed acquirers dropped 17 percent through June 2023, compared to 2022. Even the publics, which have historically eyed more transformative strategic acquisitions, completed twice as many acquisitions of firms with under $5 million in revenue in the first half of 2023 as they completed of firms with more than $25 million revenue.

Historically, consolidation increases in the second half of the year, positioning the A/E industry for more than 450 transactions in 2023. Although the likelihood of witnessing a third consecutive record year for domestic M&A activity seems ambitious, the signals from industry buyers, sellers, and investors are unambiguous. Expect dealmakers to continue to pursue deals in 2023 and beyond.

Following is a list of recent transactions, with ACEC members highlighted in **bold**.

AUGUST 2023

Gannett Fleming (Camp Hill, Pa.) (*ENR* #26) made a game-changing move in the national power and utility markets through the acquisition of 120-person power delivery solutions provider DiGioia Gray (Monroeville, Pa.).

AEG and strategic consulting firm **Woolpert** (Dayton, Ohio) (*ENR* #56) acquired Cooperative Strategies (Irvine, Calif.), a firm that specializes in school facility management, assessments, educational program planning, demographic analyses and enrollment projections, capital planning, and community engagement.

JULY 2023

Civil, structural, land surveying, and geospatial services firm **TWM** (Swansea, Ill.) acquired land planning and surveying firm Medders Surveying (Athens, Tenn.).

A2H (Memphis, Tenn.), an architecture, engineering, and planning firm, acquired **King Engineering Consultants** (Memphis, Tenn.). The acquisition expands A2H's services in the public sector, particularly for municipal clients in waste and wastewater improvement projects.

Architecture, engineering, energy efficiency, and CM firm **Wendel** (Williamsville, N.Y.) (*ENR* #492) acquired Mitchell Associates Architects (Albany, N.Y.), a firm that works exclusively on public service facilities, including fire stations, EMS, police, and shared facilities.

Sustainable infrastructure engineering, planning, and environmental science services firm **Verdantas** (Dublin, Ohio) (*ENR* #149) acquired Clemson Engineering Hydraulics (Anderson, S.C.), a physical hydraulic modeling services firm with experience in water and wastewater, power generation, flood control, and industrial/manufacturing cooling applications.

To view the most up-to-date and "live" versions of the M&A heat maps, and to see who are the buyers and sellers in each state, go to www.morrisseygoodale.com.

Nick Belitz is a principal with Morrissey Goodale LLC, a management consulting firm that specializes in the A/E and environmental industry and provides strategic business planning, merger and acquisition, valuation, ownership transition, executive coaching, and leadership development services. He can be reached at nbelitz@morrisseygoodale.com.

Fast-growing engineering and consulting firm Universal Engineering Services (UES) (Orlando, Fla.) (*ENR* #36) acquired **GEO Solutions** (Huntsville, Ala.), a full-service geotechnical engineering, environmental consulting, and materials testing firm.

Multidisciplinary firm **MSA Professional Services** (Baraboo, Wis.) (*ENR* #312) acquired Fredericksen Engineering (Mequon, Wis.), a firm that offers HVAC engineering design to architects, municipalities, county governments, school districts, and public and private business owners.

Planning and architectural design firm BHH Architecture (Perham, Minn.) merged with architecture, engineering, environmental, and surveying firm **Widseth** (Baxter, Minn.).

Dunaway (Fort Worth, Texas), a civil and structural engineering, planning, landscape architecture, and environmental firm, acquired civil and structural engineering firm BEC Engineers and Consultants (Houston).

Employee-owned industry leader **Terracon** (Olathe, Kan.) (*ENR* #20) acquired engineering and environmental services firm **Pollution Management** (Little Rock, Ark.).

AKS Engineering & Forestry (Tualatin, Ore.), a civil engineering, water resources, surveying, and land use planning firm, merged with **Tenneson Engineering Corporation** (The Dalles, Ore.), a firm that offers civil engineering, land surveying, structural engineering, land use planning, water rights, and construction support services.

Western States Reclamation (Frederick, Colo.), an environmental, stormwater management, land reclamation and restoration, and heavy civil services firm, acquired engineering and ecological science firm **Ecological Resource Consultants** (Lakewood, Colo.).

Fibersmith (Blooming Prairie, Minn.), an engineering, fiber network design, and software services firm serving the telecommunications market, acquired civil and structural engineering firm **Ahneman Kirby** (Riverside, Conn.).

Sunrise Engineering (Fillmore, Utah) (*ENR* #348) expanded its presence in Idaho with the acquisition of engineering and surveying firm Rocky Mountain Engineering and Survey (Pocatello, Idaho).

Structural engineering firms **Bennett & Pless** (Atlanta) and Hees & Associates (Sarasota, Fla.) merged. The merger allows both teams to offer a larger structural consulting strength with broader experience in complex structures.

JUNE 2023

Industry-leading firm **Westwood Professional Services** (Minnetonka, Minn.) (*ENR* #79) acquired Peloton Land Solutions (Fort Worth, Texas), a firm that provides engineering, surveying, landscape architecture, hydraulics, hydrology, and environmental solutions.

Engineering, planning, and environmental firm **GAI Consultants** (Homestead, Pa.) (*ENR* #173) acquired **Eland Engineering** (Fort Lauderdale, Fla.), a firm that offers engineering consulting and field maintenance services for Intelligent Transportation Systems and traffic signal systems.

Global digital, cloud, and security services firm Accenture (New York City) entered into an agreement to acquire *ENR*'s #20 ranked construction management-for-fee firm, **Anser Advisory** (Santa Ana, Calif.).

Ferguson Risk Management (Palm Coast, Fla.), an environmental risk control services firm, joined employee-owned industry leader **Terracon** (Olathe, Kan.) (*ENR* #20).

Byce & Associates (Kalamazoo, Mich.), an architecture, engineering, and project management services firm, joined civil engineering firm **Abonmarche** (Benton Harbor, Mich.). The firm will be renamed Abonmarche Byce and will be staffed by existing team members of both firms.

Transportation consulting firm **TranSystems** (Kansas City, Mo.) (*ENR* #65) acquired **Whitney Bailey Cox & Magnani** (Baltimore) (*ENR* #433), a transportation and infrastructure engineering consulting firm.

Geospatial and inspection solutions firm **SAM Companies** (Austin, Texas) (*ENR* #88) acquired AXIS GeoSpatial and AXIS GeoAviation (Easton, Md.), which collectively operate as a national geospatial solutions firm.

Multidisciplinary infrastructure, environmental, energy, and real estate consulting firm **Bowman Consulting Group** (Reston, Va.) (*ENR* #87) acquired **Infrastructure Engineering** (Brea, Calif.), a firm that offers engineering, planning, environmental, geospatial, and municipal infrastructure services.

Industry leader **Huitt-Zollars** (Dallas) (*ENR* #188) expanded its public works practice with the acquisition of Gavan & Barker (Phoenix), a design group with expertise in civil engineering and landscape architecture.

Industry leader **STV** (New York City) (*ENR* #37) acquired American Engineers, Inc. (Glasgow, Ky.), a full-service civil engineering firm with a staff of more than 120 professionals in Kentucky and Georgia servicing clients throughout the southeast U.S.

ENR's #11 ranked global design firm, **Stantec** (Edmonton, Canada), acquired Environmental Systems Design (Chicago), a mechanical, electrical, plumbing, and structural engineering firm that specializes in mission-critical facilities and data center design.

Schneider Geospatial (Indianapolis), a portfolio company of Align Capital Partners (Dallas), acquired PeopleGIS (Woburn, Mass.), an asset management SaaS solutions firm focused on public works and permitting/licensing.

Infrastructure consulting firm **TYLin** (San Francisco) (*ENR* #32) acquired Tunnelconsult Engineering (Barcelona, Spain), a consulting and engineering firm specializing in underground works.

TRC Companies (Windsor, Conn.) (*ENR* #16) acquired Gladstein, Neandross, & Associates (GNA) (Santa Monica, Calif.), a consulting firm that specializes in low-and zero-emission transportation technologies, infrastructure, and ultra-low carbon fuels for commercial transportation.

Acoustical consulting firm RGD Acoustics (Larkspur, Calif.) executed a letter of intent to join multidisciplined engineering firm **Coffman Engineers** (Seattle) (*ENR* #161). The companies plan to finalize the asset purchase agreement in July 2023.

Aspect Consulting (Bainbridge Island, Wash.), an earth science and engineering consulting firm, joined **Geosyntec** (Boca Raton, Fla.) (*ENR* #40).

Bowman Consulting Group (Reston, Va.) (*ENR* #87), a multidisciplinary infrastructure, environmental, energy, and real estate consulting firm, acquired geospatial, land surveying, and project management firm MTX Surveying (Marshall, Texas). ■

On the Move

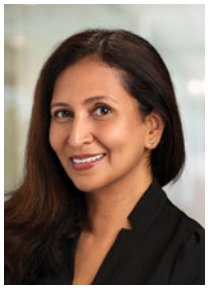
Jacksonville, Florida-based **RS&H** announced the following appointments: **Tara Wineinger** has joined the firm as executive vice president, chief people officer, working as part of the executive team to support the firm's strategic vision and growth objectives. She will also collaborate across the organization and help drive initiatives to further advance RS&H's culture and diversity, equity, and inclusion and safety programs. Wineinger is based in Houston. **Madhuri Rao** has joined the firm as senior vice president and corporate controller. Rao developed a deep technical knowledge serving entrepreneurial audit clients at PwC and EY and held roles at global public companies, including Fluor, Celanese, and Nortel. **Igor Dabik** and **Valentin Villalbi** have joined the firm as senior vice presidents of corporate investment strategy. Both Dabik and Villalbi previously spent the last six years at Deloitte, where they co-led the infrastructure investment advisory business as part of the firm's valuation and modeling practice.

Jennifer Prescott has joined Boston-based **CDM Smith** as senior vice president and incoming chief digital and information officer. She succeeds chief information officer **Dave Neitz**, who is retiring. Prescott formerly served as senior vice president, chief information officer, and innovation lead at Kleinfelder. Prescott is based in CDM Smith's Denver office.

New York City-based **Thornton Tomasetti** announced the following appointments: **Alan Matuszak** joined the structural engineering practice as vice president in the firm's Houston office. He formerly served as a principal with Matrix Structural Engineers. **Lisa MacKay** joined the firm's New York transportation team as vice president. She formerly served as an associate vice president at AECOM. **Prudence Ferreira** joined the firm's sustainability practice as a vice president. Based in the Portland, Maine, office, Ferreira will head up the firm's passive buildings consulting team. She joins the company from BR+A Consulting Engineers.

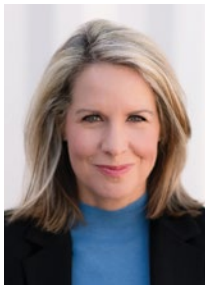
Rockville, Maryland-based **AMT** announced the following vice president promotions: **Billy Badger** serves as the director of construction services and manages AMT's construction engineering and inspection business unit. **Matt Ernest** serves as a director of the firm's site civil business unit with oversight of federal, state, and utility clients. **Jeff McKay** has assumed the role of director of transportation and leads the transportation business unit with a focus on client service and continued growth and expansion. He is active with ACEC Virginia. **Aaron Smith** serves as a director of AMT's site civil business unit with oversight of municipal and private clients. Smith serves on the ACEC/MW Board.

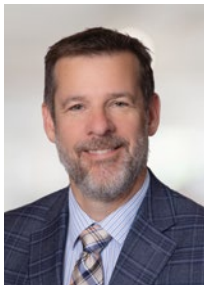

Tara Wineinger

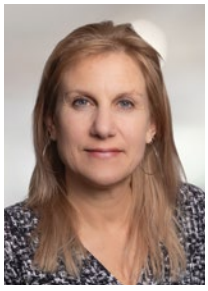

Madhuri Rao


Igor Dabik


Valentin Villalbi


Jennifer Prescott


Alan Matuszak


Lisa MacKay


Prudence Ferreira


Billy Badger


Matt Ernest


Jeff McKay


Aaron Smith

Jeffrey Bross

Jeffrey Bross, age 76, a professional engineer who had a 50-year career dedicated to the civil engineering profession, passed away on August 16, 2023.

Bross' early career began with Edward H. Richardson Associates in Newark, Delaware. He later moved to Omaha, Nebraska, where he became the City Engineer for the City of Omaha. In 1980, he returned to Delaware to join Duffield Associates, where he was a partner, named president in 1996, and later was chairman of the board. Bross continued to serve his clients and community as a senior consultant at Verdantas after Duffield Associates' merger in 2021.

Bross received numerous achievements, including the distinguished Samuel S. Baxter Memorial Award in 2010 from the Water Resource Association of the Delaware River Basin. He was honored as Delaware's Engineer of the Year in 2006 by the Delaware Council of Engineering Societies.

Welcome New Member Firms

ACEC Alabama
Sain Engineering Associates Inc.
Birmingham

ACEC Arizona
H2Q Engineering and Technology Solutions LLC
Glendale
Hazen and Sawyer, P.C.
Tempe
Sama Construction Services
Scottsdale

ACEC California
Pacific Engineering & Consulting Inc.
Fresno
RockSol Consulting Group Inc.
San Diego
Wescom Solutions
Yorba Linda

ACEC Colorado
Avant Civil Group
Fort Collins
DB Structural Design
Glenwood Springs

ACEC-CT
Baslee Engineering Solutions Inc.
Rocky Hill

ACEC/Delaware
Traffic Planning and Design Inc.
Newark

ACEC-FL
Bentley Group Inc.
Longwood
Fischer Forensic Engineering LLC
Punta Gorda
HPBS of Florida
Cocoa
Hunter Design and Consulting
St. Petersburg
Schwartz, Maylone and Associates LLC
De Leon Springs
SEP
Winter Springs

ACEC Georgia
C&H Planners LLC
Tucker
Hill Foley Rossi & Associates LLC
Duluth
Pont Engineering Inc.
Marietta

ACECHawaii
Earth Engineers Inc.
Aiea
Oceanit Laboratories Inc.
Honolulu

ACEC of Idaho
Ciani & Hatch Engineering PLLC
Boise
Peterson Engineers
Burley
TJW Engineering Inc.
Nampa

ACEC Illinois
Accurate Group Inc.
Lincolnshire

ACEC Indiana
Collins Engineers Inc.
Chesterton

ACEC Kansas
Merge Midwest Engineering LLC
Olathe

ACEC/MA
Orion Engineers & Associates
Burlington

ACEC/MD
BVF Engineering Inc.
Columbia

ACEC/Michigan
Jacobs Engineering Group Inc.
Bingham Farms

ACEC/Missouri
Four Points Land Surveying & Engineering Inc.
Hannibal
Hutchison Engineering
Hannibal
The Haskell Company (formerly Benham Design LLC)
St. Louis
Zanevan Engineering LLC
Carthage

ACEC/MS
ECS Southeast LLC
Long Beach
Rummel, Klepper & Kahl LLP
Nashville, Tennessee
Wages Civil LLC
Canton

Welcome New National Affiliate Members

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EPSA USA
FORVIS

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Berkshire Hathaway Specialty Insurance Company
RT Specialty

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For further information on national affiliate members, go to: https://bit.ly/ACEC-Natl-Affiliate-Members or contact Erin Wander at 440-281-0464 or ewander@acec.org.

ACEC/MW
BVF Engineering Inc.
Columbia, Maryland

ACEC/NC
Aulick Engineering, LLC
Durham
Boyle Consulting Engineers
Charlotte
Carolina Transportation Engineers & Associates PC
Charlotte
Goins-Sweitzer Engineers and Consultants
Wake Forest

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Iconic Consulting Group Inc.
Omaha
Project Control, a Raba Kistner Company
Lincoln
TREKK Design Group LLC
Omaha

ACEC/NJ
AI Engineers Inc.
Trenton
CP Engineers LLC
Sparta
SAM Companies
Moorestown

ACEC New York
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New York City
IVY Engineering Group PLLC
New York City
Matrix New World Engineering, Land Surveying and Landscape Architecture PC
New York City
Milhouse Engineering and Construction Inc.
New York City
Wright-Pierce
Halfmoon
YOR Engineering PLLC
Astoria

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Hill International Inc.
Columbus

ACEC OKLAHOMA
Mbroh Engineering Inc.
Oklahoma City

ACEC Oregon
ABD Engineering & Design Inc.
Portland
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Portland

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Kimley-Horn and Associates Inc.
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ACEC Texas
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Cogent Commissioning
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GEICS Engineering
Dallas
JRB Engineering LLC
Dallas
Seahorse Energy
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Texas Transportation Solutions Inc.
Austin
The Transtec Group Inc.
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Collins Engineers Inc.
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Henrico

ACEC Washington
RS&H
Seattle
Strata Inc.
Spokane

ACEC Wisconsin
GZA GeoEnvironmental Inc.
Brookfield
REI Engineering Inc.
Wausau

ACECWV
Infrastructure Consulting & Engineering PLLC
Columbia, South Carolina
Kimley-Horn and Associates Inc.
Reston, Virginia
SAM Companies
Austin, Texas
Volkert Inc.
Mobile, Alabama

CALENDAROFEVENTS

JANUARY 2024

11 Ownership Transition: Make Way for the Next Generation (online class)

16 The Digital Future is Now – Get Ahead of What's Next (online class)

24 Navigating a Multi-State Business (online class)

30–March 26 Project Management 101: Laying the Foundation for Superior Project Managers (virtual)

FEBRUARY

6 When Everyone is Talking... About You (online class)

MARCH

12 How to Keep Clients Coming Back (online class)

12–14 Business of Design Consulting, Chicago

APRIL

2 The Waterfall Effect of Hiring and Having Remote Employees (online class)

MAY

13–16 ACEC Annual Convention and Legislative Summit, Washington, D.C.

To sign up for ACEC online seminars, go to **www.acec.org/education.**

Additional information on all ACEC activities is available at www.acec.org.

Statement of Ownership, Management, and Circulation

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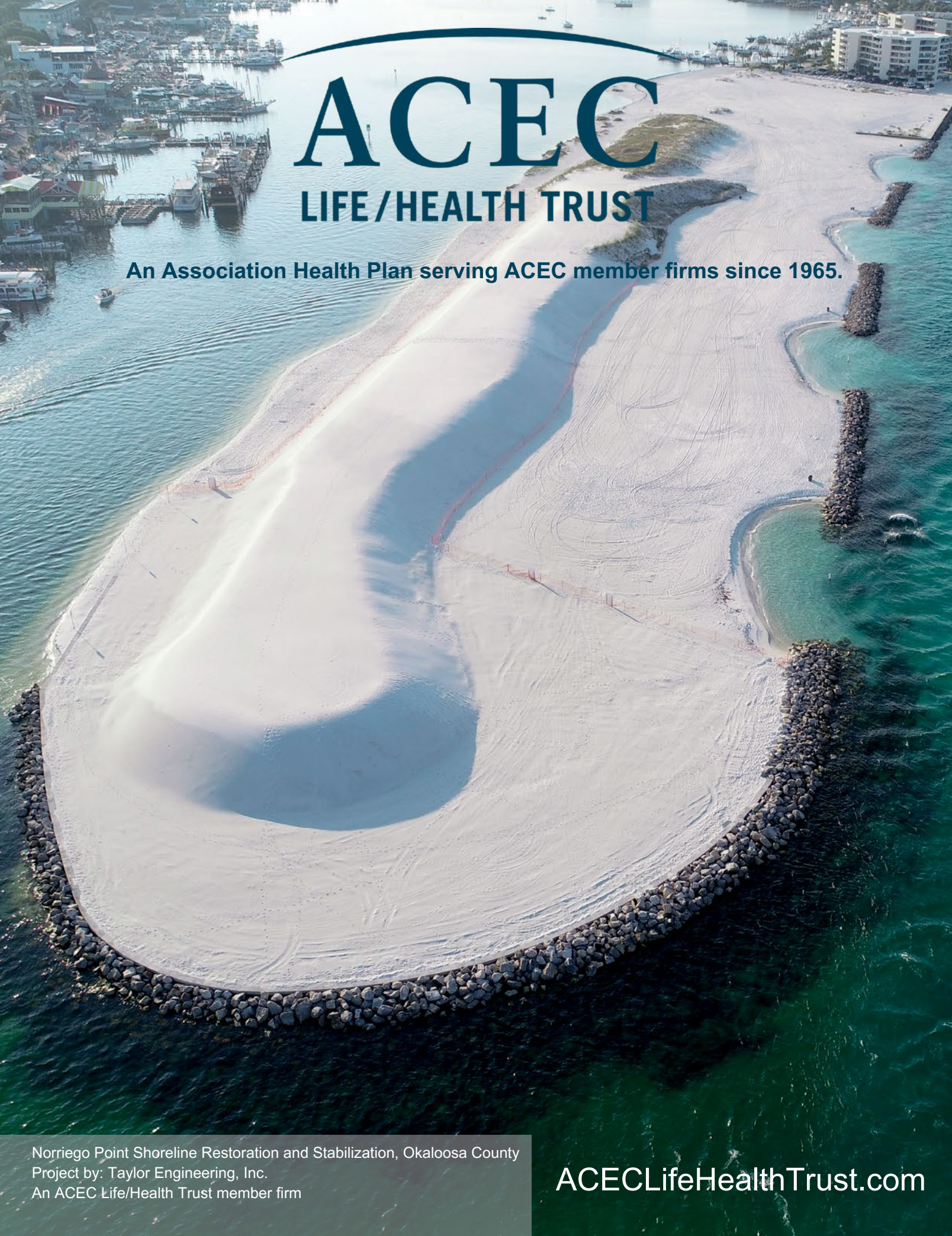

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