

DBIA

INTEGRATION QUARTERLY

The publication of the Design-Build Institute of America

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- ▶ **06** Legal Brief
- ▶ **14** Meet the Project of the Year
- ▶ **24** 2018 Leadership Awards

ISSUE 4 | 2018

PROFESSIONAL ENGINEER
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Manassas, Virginia
RESPONSIBLE ENGINEER

PROJECT OF THE YEAR

Design-Build Innovation Delivers

Virginia's I-66/Rt 15 Interchange



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Putting Design-Build Students to the Test

Read more at www.DesignBuildDoneRight.com



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LEADERSHIP REFLECTIONS

BY LISA WASHINGTON, CAE

Celebrating 2018 While Preparing for the Future

It's so easy in the hustle and bustle of the holidays to forget to take a moment and reflect on the year that's quickly coming to a close. Here at DBIA, 2018 has provided a unique opportunity for us to really reflect on our industry and association—past, present and future. Not only has it been our 25th Anniversary year, with all the celebration and reflection that comes with such a milestone, but we've also completed our 2019–2021 Strategic Planning process. We're excited for the future and have set some aggressive goals for the next few years.

In a nutshell, we will work to ensure our industry, Owners, lawmakers and the entire nation can SEE the DBIA difference, with three key strategies implemented:

Stimulate • Educate • Evolve

Stimulate: Under this goal, we will extol the critical role of the entire team, drive consistent messaging and expand the markets we serve.

Educate: It's vitally important that we continue to emphasize the importance of Design-Build Done Right™ Best Practices to our industry's continued success. We'll also work to distinguish and define the various approaches to design-build. Lastly, we will deepen our professional development to provide a full spectrum of learning from the beginning to advanced theory and application.

Evolve: Design-build is constantly evolving and so will DBIA to ensure that we add real value to our members and the industry overall.

Thanks to the DBIA National Board, led by Chairman Bill Hasbrook, and the many DBIA Region leaders, members, industry partners and stakeholders for their invaluable input over many months of work.

We have so much to celebrate in 2018 including; a record-breaking number of DBIA Certified Professionals, the highest number of Design-Build Conference attendees ever and incredible growth in the number of design-build education course attendees. Design-build continues to deliver impressive results throughout our nation and DBIA is proud to provide the entire design-build team the resources you need to thrive.

We're looking forward to spending a terrific 2019 with you!

Lisa Washington, CAE
Executive Director/CEO

► Lisa Washington is a certified association executive (CAE) with more than 20 years of association management experience. She has served as DBIA's CEO since June 2009.



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DBIA DELIVERS

BY THE NUMBERS

2018 Design-Build Legislation

31

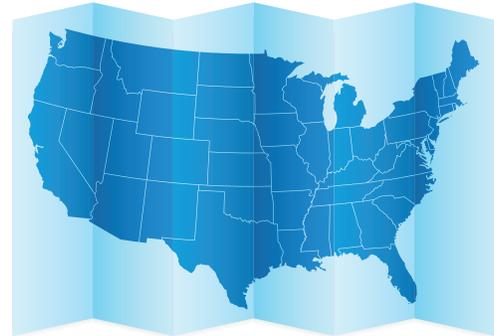
States Considered
Design-Build Legislation

122

DB/P3 Bills
Introduced

21

States with DB
Legislative Victories



EDUCATOR WORKSHOP

2018 Educator Workshop Turns Teachers into Students

As design-build has grown as a project delivery method, so has the need to educate the next generation on design-build best practices to ensure they're ready to work in the industry. This summer, educators and professors from around the country once again flocked to the University of Denver for DBIA's fifth annual Educator Workshop, co-hosted by the Charles Pankow Foundation.

This three-day workshop equipped educators from ten different universities—and with various backgrounds and ranges of design-build experience—with the tools and knowledge necessary to integrate Design-Build Done Right™ principles into their courses. The focus on DBIA core courses gave the educators a crash course in all things design-build, from planning and procurement all the way through post-award. These educators see a real need for quality design-build education.

"We understand the shift in industry to the design-build process and we've seen statistics showing how that's gained traction over the years," said Shannon Casebeer, an assistant professor at Kansas State University. Other workshop participants felt that this exposure gave them a better sense of what design-build can do in the real world. "Demystifying the whole design-build process has been a truly rewarding experience," said Arsenio Rodrigues of Bowling Green State University in Ohio. "I see it [design-build] realistically and how it can be used," agreed Althea Arnold of the University of Texas at Tyler, "as opposed to theoretically, which is kind of what's taught in the classroom."

The educators also appreciated the opportunity to meet other professors who are looking to learn more about design-build. "You kind of get isolated because construction management programs are usually kind of small," said Arnold. "It's good to get out and meet other people from other universities, see what they're doing, learn some innovations and see how they work in the classroom."



"I think this workshop has been a great opportunity to talk with other industry members who are practicing and teaching design-build," said Agnes Drogi, who came away with ideas on how to implement new activities into her classroom.

What they were most excited about, however, was the chance to influence the next generation of industry professionals—a generation that will see design-build as more than an alternative option.

"What's been great about the workshop is to see how the industry has been embracing design-build," said Drogi, of Northern Arizona University, who has years of design-build experience but is new to the classroom. "That's where I really want to make a difference, by teaching that generation who's going to change the mindset of the whole design and construction industry." 

DBIA DELIVERS

EDUCATOR WORKSHOP

New Cost and Schedule Data Released

New research released by Construction Industry Institute (CII) and the Pankow Foundation provides updated data on unit costs, construction and delivery speed, plus cost and schedule growth performance of Design-Bid-Build, Construction Manager-at-Risk and Design-Build delivery methods. This work updates the seminal research done in 1998 by CII/Penn State and shows design-build continues to deliver superior results when compared with other delivery methods.

The research was released at the 2018 Design-Build Conference & Expo and will be covered in detail in the next issue of DBIA's *Integration Quarterly* magazine. [🔗](#)

2018 PANKOW/CII STUDY

	DB versus CMR (%)	DB versus DBB (%)
Unit Cost	1.9 less	0.3 less
Cost Growth	2.4 less	3.8 less
Schedule Growth	3.9 less	1.7 less
Construction Speed	13 faster	36 faster
Delivery Speed	61 faster	102 faster

CAREER MILESTONES

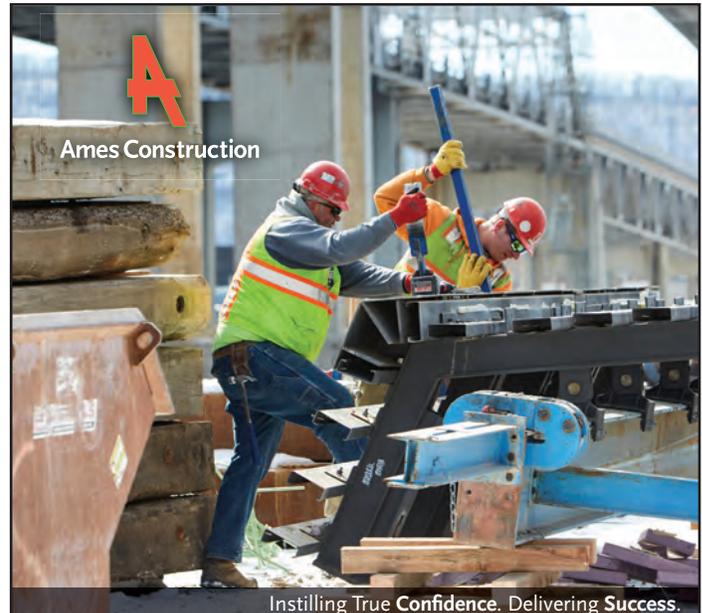
- Started as a plumber's helper
- Completed plumbing apprenticeship
- Grew into a leadman
- Obtained his journeyman's license
- Secured his master's license
- Became company MVP
- Judges local & national plumbing competitions



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BY MICHAEL C. LOULAKIS, ESQ., DBIA
CAPITAL PROJECT STRATEGIES, LLC

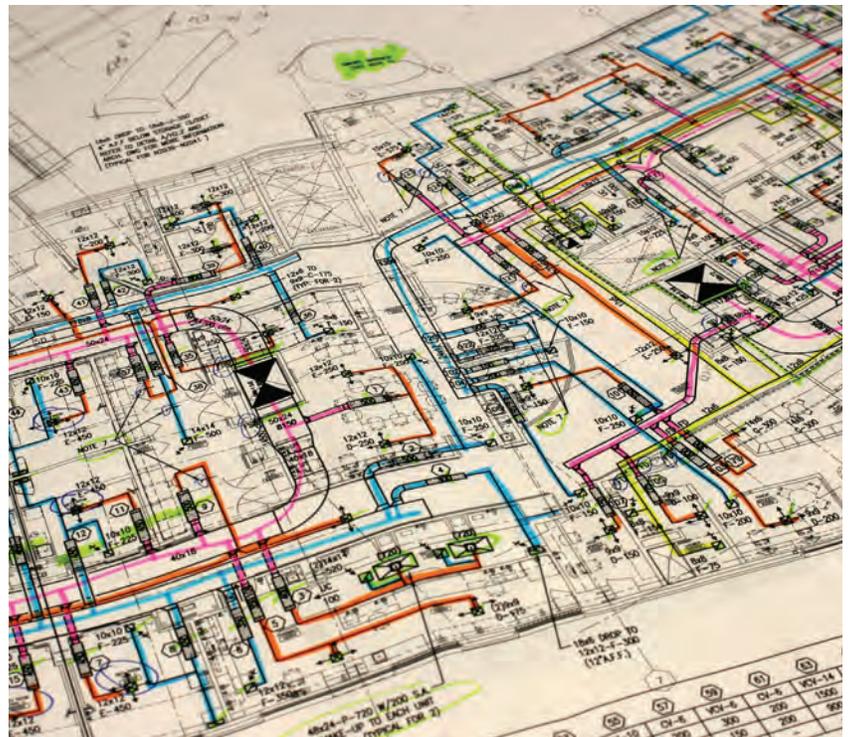
Mandatory Technical Requirements: Are They Really Mandatory?

While Design-Build Done Right™ preaches the virtues of performance specifications, we know that many owners use prescriptive

specifications to ensure that they get exactly what they want. We also know that there are a host of issues associated with prescriptive specifications. Assume the specification states that: "Conduit shall have a diameter of 4 inches." Is the design-builder entitled to a change order if it discovers during design development that the conduit really needs to be 8 inches in diameter? Prevailing case law would say yes.

Take another example. Assume the specification states that "The warehouse shall be no less than 40' x 40'." What if post-award the design-builder "optimized" the warehouse's dimensions to 36' x 36' and this was accepted by the owner through the design submittal process? Does the savings go to the design-builder? Is it considered part of value engineering and savings shared? Does the owner get a full credit for the cost difference in the structure?

More often than not owners and design-builders navigate through these type of issues. Most design-builders recognize that they are obligated to comply with mandatory requirements even if there is a better way of doing something. Most owners appreciate that the design-builder should have some discretion to make minor design



changes to an otherwise "mandatory" requirement and that money does not need to change hands.

But assume the parties do not get along and disagree on how to handle these type of issues. How will a court look at the enforceability of "mandatory" requirements? A recent case in the Armed Services Board of Contract Appeals (Board) offers one court's view. In *Appeal of American West Construction, LLC*, the Army Corps of Engineers tried to recover from the design-builder the cost savings realized by using a less expensive means of performing the work than that specified by the contract. The Board found that

while the design-builder was obligated to meet the contract's requirement, the Corps had waived its rights to require strict compliance and was not entitled to a credit.

The contract involved the construction of bridges over irrigation canals in El Paso County, Texas, near the Mexican border. To access the site of one of those bridges (the Herring bridge), the contract's technical requirements provided for the construction of two temporary bridges over another canal and a drainage ditch. These temporary bridges were to be disassembled and removed after completion of the Herring bridge.

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- Tom Sorley, CEO



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American West, the design-builder, was concerned that it would not have enough time to complete the project if it built the temporary bridges, particularly given seasonal constraints related to using the irrigation ditches for agriculture. As a result, it developed a plan that would access the construction site through a levee on property held by the El Paso County Water Improvement District (Water District). American West thought that this approach would be quicker, safer, and more efficient than building temporary bridges. This plan was dependent upon successfully and timely negotiating an easement with the Water District. If it couldn't, American West was prepared to build the temporary bridges.

The first indication that American West gave to the Corps that it intended to use a levee instead of temporary bridges was in the Construction Site/Traffic Control Plan that it submitted in late September 2015. The Corps' reviewer of this plan responded in late October, noting that the haul roads identified in the submittal had not been approved by the Corps, and directing American West to provide the required permits and approvals for using these haul roads.

American West provided the necessary permits shortly after this response. Additionally, by the end of October, American West obtained the levee easement from the Water District, and informed the Corps of this at its weekly construction meeting in early November. Although the Corps never explicitly approved a plan using the Water District levee in lieu of the bridges, American West substantially completed the project in May 2016 without constructing the temporary bridges.

While there was no dispute that the Corps knew of American West's plans, there was a dispute as to when the Corps first raised the issue of getting a credit for the deletion of the temporary bridges. The Corps' administrative contracting officer claimed that he raised the issue at the monthly meetings as soon as he knew that the levee would be used. American West's project manager denied that the Corps ever asked about credits in these meetings. The first documented request about a credit came in early March 2016, when the Corps asked American West for its budgeted temporary bridge costs.

For reasons that are unclear, American West never responded to this request for budgeted costs. This prompted the Corps to send American West a letter in early June 2016 (i.e., after the project was substantially completed) demanding that it submit a proposal to the Corps for proceeding without the temporary bridges. After American West rejected the notion that the Corps was due a credit, the Corps issued a contracting officer's final decision on the issue. It asserted that the Corps was owed a credit of over \$40,000 for the estimated difference in price between performing the project with the

temporary bridges and without them. American West appealed to the Board.

The Board's decision made it clear that the Corps was entitled to require American West to build the temporary bridges. Even though there was no need for these bridges after the contract was completed, and "all concerned were better off because they were never built," it has long been held that the government "can engage a contractor to make snowmen in August" if it chooses. However, the Board also noted that the government may waive strict compliance and be precluded from later re-imposing those requirements if it knowingly fails to require strict performance and a contractor reasonably "believes the requirement to be dead."

The Board concluded that the Corps waived the temporary bridge requirement. It knew about American West's plan to use the levee as early as September 2015 and never explicitly objected to it. Not only did American West believe the Corps had accepted this approach, but American West relied upon this acceptance by spending money to secure the easement from the Water District.

The Corps argued that while it may have permitted a contractual deviation, that deviation was essentially conditional upon getting a credit from American West. The Board found this unpersuasive. The conditional nature of the Corps' waiver only became evident after the contractual requirement was effectively eliminated in March 2016—well after American West was working on the levee. In examining the conflicting testimony about whether or not credits had been discussed in meetings before March 2016, the Board was influenced by the fact that neither the daily reports nor meeting minutes evidenced any such discussions. The Board concluded that if the Corps had in fact raised the issue of credit in these meetings, "it was done in an off-hand manner that did not register" with American West.

The result is both logical and fair. If the Corps truly expected a credit, it should have ensured that this expectation was fully explained to American West as soon as the deviation surfaced. What if the Corps did that and American West still believed that it could eliminate the temporary bridges without giving a credit? A footnote in the decision gives us a strong clue as to how the Board would have ruled.

The outcome of this appeal may well have been different if the Corps had clearly and explicitly conditioned its waiver of the contractual requirements at an earlier date, but that circumstance is not before us.

Remember, design-builders are obligated to meet mandatory requirements that are not unconditionally waived by the government, even if the mandatory requirement is as useless as making snowmen in August. 🍷



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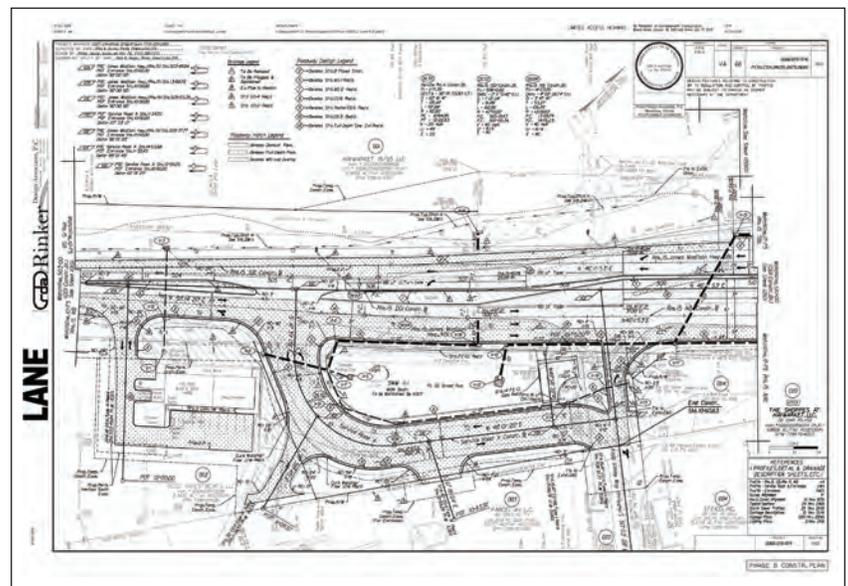
OWNER SPOTLIGHT

BY SHAILENDRA PATEL, P.E., DBIA
VIRGINIA DEPARTMENT OF TRANSPORTATION

It Couldn't Have Happened Without Design-Build

The Virginia Department of Transportation (VDOT) along with the Prince William County Department of Transportation had an urgent need to reconstruct a heavily congested interchange located at Interstate 66 (I-66) and U.S. Route 15 outside of Washington D.C. Traffic on Route 15 averages 35,000 vehicles a day and 60,000 vehicles a day in this area of I-66. The scope of the interchange reconstruction included the widening of U.S. Route 15, the replacement of the I-66 northbound and southbound bridges, the addition of a shared use path and designated bike lanes. All reasonable alternatives that met the Project Purpose and Need were initially considered. Discussions with project stakeholders identified a preliminary set of seven (7) build alternatives for analysis and evaluation. The project stakeholders included representatives from FHWA, VDOT, Prince William County and the Town of Haymarket. The Request for Proposal (RFP) conceptual design consisted of a diamond interchange which included a semi-directional (flyover) ramp on an elevated structure to take traffic directly from southbound Route 15 to eastbound I-66.

VDOT had previous success utilizing best value design-build project delivery on complex interchange projects. Best value encourages the design-build teams to explore alternative innovative solutions that can result in improvements to the original RFP concept providing a more efficient and cost-effective design. As such, VDOT was accepting



innovative solutions to the original RFP conceptual design and potential deviations from RFP requirements during one-on-one proprietary meetings with each short-listed team. Furthermore, innovative alternatives/solutions that met the requirements and intent of the RFP were kept proprietary while ambiguities, clarifications or changes in design criteria were addressed through addendums to the RFP.

The team that provided the winning best value proposal was the design-build team of The LANE Construction Corporation and Rinker Design Associates, PC. The LANE/RDA team proposed an innovative modification utilizing a six-lane Diverging Diamond Interchange (DDI) option instead of the diamond/flyover RFP conceptual design. The DDI concept provided improved

overall safety and traffic operations by removing numerous conflict points from the RFP conceptual design. The stakeholders were receptive to the idea of an alternative that removed a flyover ramp at the interchange. The DDI met or exceeded all operational and capacity requirements of the RFP. To move forward with the concept the LANE/RDA team had to show the measures of effectiveness for the Interchange Modifications Report were not adversely impacted. The DDI configuration and analysis not only met the overall effectiveness requirements but also improved operational capacity. The implementation of the DDI alternative resulted in:

- Enhanced public safety
- Accommodation of critical pedestrian movements

I-66/U.S. 15 Diverging Diamond Interchange

State Proj. No.: 0066-076-074
 Federal Proj. No.: IM-066-1(341) UPC 100566
 December 2016



- Improved traffic operations
- Reduced project footprint and environmental impacts
- Reduced ROW impacts
- Savings in construction and future maintenance (elimination of flyover bridge structure)
- Contract value was approximately \$9M under VDOT's RFP estimate
- Project was completed on time in 22.5 months

One unexpected benefit of evaluating alternative design configurations came due to a protest. It became evident that VDOT needed the additional flexibility and authority to implement a formal Alternative Technical Concept (ATC) process and that it be expressly permitted by Virginia's procurement law. This would ensure that each team's unique and proprietary ideas are better protected while reducing or eliminating the need to issue RFP addendums for design concepts that were not contemplated as part of the original RFP design. Legislative authority to utilize formal ATCs would also limit the potential for bid protests related to technical concepts that deviate from RFP conceptual plans and requirements. The use of ATCs also streamlines the amount of effort VDOT would need to invest during the preliminary engineering/project develop phase since the design-build teams are incentivized to explore alternative innovative solutions. VDOT and Virginia Transportation and Construction Alliance (VTCA) worked together to pursue an amendment to VA Code § 33.2-209 that will allow for the submission and consideration of ATCs to provide a solution that is equal to or better than the requirements in the RFP. In 2016, VDOT was successful



in gaining legislative authority and the provision to allow the use of formal ATCs is now part of the Code of Virginia and important tool in the toolbox for Virginia's design-build program.

The project began in Sept. 2015 and was completed on time and on budget. The stakeholders have been pleased which is the testament to benefits of the use of ATC in design-build project delivery. The project has been selected for 2018 Design-Build Institute of America (DBIA) Merit award.

The Interstate 66/Route 15 project is DBIA's 2018 Project of the Year. 🏆



THOUGHT LEADERSHIP

BY MARTY HEDLUND, P.E., CPC, LEED AP, DBIA
SENIOR VICE PRESIDENT, SUNDT CONSTRUCTION, INC.

An Interview with Marty Hedlund DBIA's Incoming 2019 National Board Chairman

1

Tell us about yourself.

I am a 35-year veteran of Sundt Construction in Arizona, although I've worked from California to Colorado to Kansas over those many years. I am a Civil Engineer by education, but have worked mostly on the vertical building side and, early in my career, I developed an interest in team-based delivery, mostly in the private sector, preferring a "win-win environment" in all my business interactions. When Arizona passed its Alternate Procurement legislation in 2000, allowing both CM-at-Risk and Design-Build procurement where the selection process was 100% Qualifications-Based (QBS), I began to solely focus on QBS deliveries, integrated team pursuits and developing high-performing teams. Involvement with DBIA was a natural fit for me.

2

What are your top priorities for DBIA during your term as National Board Chair?

With the new 2019–2021 Strategic Plan in place, we will focus the board and national committees on the tasks identified and lay out plans to meet the goals and metrics listed. One area that I want to pay attention to is the integration of the Regions, Chapters and members in the delivering of our message about Design-Build Done Right™. We are also going to integrate the Regions into our Strategic Planning process, goals and metrics by 2020. The link between our Chapters, Regions and DBIA National is one that can and should be stronger, and more effective in promoting integration

and collaboration in public and private sector project execution.

3

What do you envision the next five years hold for design-build?

The next five years will see the opportunity to proliferate Design-Build Done Right™ in both public and private sectors, but also to tap into the many possibilities out there to integrate high performing teams into successful outcomes. Our pioneering efforts to spread the use of Progressive Design-Build (PDB), where the means of selection is both value and qualifications-based, and the use of Design-Build in a Public-Private-Partnership financial model are just two areas where we anticipate seeing significant growth of Design-Build. I also expect the continued growth of the DBIA Designated Design-Build Professional™ credentials to spur increased professionalism in the design-build industry. Now that 30% of those receiving DBIA Certification are Owners, we see an increased emphasis during selection of design-build teams on those teams having DBIA trained and certified leadership. Given that 2017 saw over 500 newly certified DBIA Designated Design-Build Professionals™, I envision this trend will continue.

4

Along the same lines, what then would you like to see happen for DBIA over that same five-year period?

I would like to see the DBIA support legislative advocacy throughout the U.S. toward enabling all forms of integrated delivery in the public sector. This

includes all variations of design-build (fixed price, progressive, cost plus, etc.), CM-at-Risk to Qualifications-Based Selection and other forms of integrated project delivery) using a Single Form of Agreement (SFOA). If there is a way to integrate and collaborate while enhancing team performance, we want to be on the forefront of enabling that type of success, in both public and private arenas.

5

Do you have any concerns for our Industry and for DBIA?

I believe some current tendencies in the industry need to be viewed with caution. The trend toward "mega-projects" delivered using two-step, fixed-price Design-Build, or using a Public-Private-Partnership approach (and design-build delivery) threaten to make the delivery process exclusionary. The "cost of pursuit" of these endeavors can run in the millions, or even tens of millions, and firms that can afford to risk such costs (with stipends covering only a small percentage of the dollars spent) are also the "mega-firms" on all sides of the development efforts (designers, contractors and developers). Our industry is certainly made stronger by creating balance among opportunity for all practitioners both large and small, diverse and disadvantaged, publicly and privately-owned. While DBIA supports all forms of Design-Build Done Right™, let's, wherever possible, focus efforts on a value and qualifications-based approach that provides opportunities for all our diverse members. 🌱



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An aerial photograph of a highway interchange. A bridge crosses a river in the lower-left quadrant. The highway curves and splits into multiple lanes. There are several cars on the road, and some orange traffic cones are visible. In the background, there are buildings and green trees. The overall scene is a complex transportation infrastructure project.

MEET THE 2018 PROJECT OF THE YEAR

Design-Build
Delivers Incredible
Results, In Spite
of (Unusual)
Challenges

BY KIM WRIGHT



First it was the long-eared bats, then the flaming truck of tomatoes. That's in addition to the more common project challenges design-build teams are used to, including: political/community concerns, heavy traffic around the project site and even legislative hurdles.

Despite all this, the I-66/Route 15 interchange project was delivered on time while saving the Virginia Department of Transportation \$20 million dollars over the initial projection. Collaboration was at the heart of this project's success as the team delivered an innovative Diverging Diamond Interchange (DDI)—the first of its kind in the region.



procurement, the RFQ phase of this project evaluated the proposers based on qualifications, using the standard DBIA contract language to ensure a fair and balanced partnership. Three proposers were shortlisted and later issued an RFP, which used a best-value process. Although formal ATCs were not allowed, VDOT held proprietary meetings with each offeror. This was an opportunity to address concerns, innovations and potential deviations in a protected setting.

Collaboration Delivered Innovation

The design-build **team led** by The LANE Construction Corporation and Rinker Design Associates, say VDOT's best-value selection opened the door for them to innovate and provide an alternative to the RFP flyover design that would not have been considered under traditional design-did-build delivery. This design change was a game-changer according to VDOT's Design-Build NOVA District Program Manager, Christiana Briganti-Dunn, P.E., CCM, "The project, under its original concept, would have required total acquisition of five parcels and strip takes from 17 additional parcels and would have taken over three years and nearly \$62 million to construct." The team's innovative Diverging Diamond Interchange (DDI) plan ultimately accommodated the high traffic demand, reduced the project footprint and environmental impacts, improved constructability, shortened overall construction duration and reduced project cost.

The I-66 corridor in this area is 35 miles from Washington, D.C., and was projected to carry more than 60,000 vehicles per day, creating backups onto the interstate and requiring attention as quickly as possible. The project encompassed redesigning the interchange, widening U.S. Route 15 and VA Route 55, replacing two I-66 bridges, constructing a new service road and adding bike lanes and shared-use paths.

Starting Off Right

Virginia has been a design-build leader for many **years implementing** Design-Build Done Right™ Best Practices successfully in many projects. As a two-step best value



SNAPSHOT

CLIENT/OWNER:

▶ Virginia Department of Transportation (VDOT)

DESIGN-BUILDER, PROJECT MANAGER, GENERAL CONTRACTOR:

▶ The LANE Construction Corp

ENGINEER

▶ Rinker Design Associates, PC

SPECIALTY CONTRACTOR

▶ Tavares Concrete

SPECIALTY CONSULTANT

▶ T3 Design

KEY SUBCONTRACTOR

▶ Quinn Consulting Services

DURATION OF CONSTRUCTION

▶ 22.5 months

PROJECT COST:

▶ \$38,869,628

Overcoming Challenges

However, the design change meant the team had to redevelop the Interchange Justification Report which required additional public meetings to gain consensus from the community. Immediately, Prince William County came out opposed to the new interchange configuration. However, the team ultimately demonstrated how the DDI exceeded the functionality of the original design through a computer-simulated model as well as an enlarged scale plot of the interchange that people could walk through to understand how it worked.

During the design development of the project, Virginia passed new environmental regulations for the protection of the northern long-eared bat. These new regulations came just before clearing and brought field operations to a halt. Understanding the unforeseen scope of these regulations, VDOT negotiated an acceleration incentive to place the project back on schedule. This allowed the team to add additional resources to the project and finish ahead of the original schedule, overcoming the delay in plan approval.

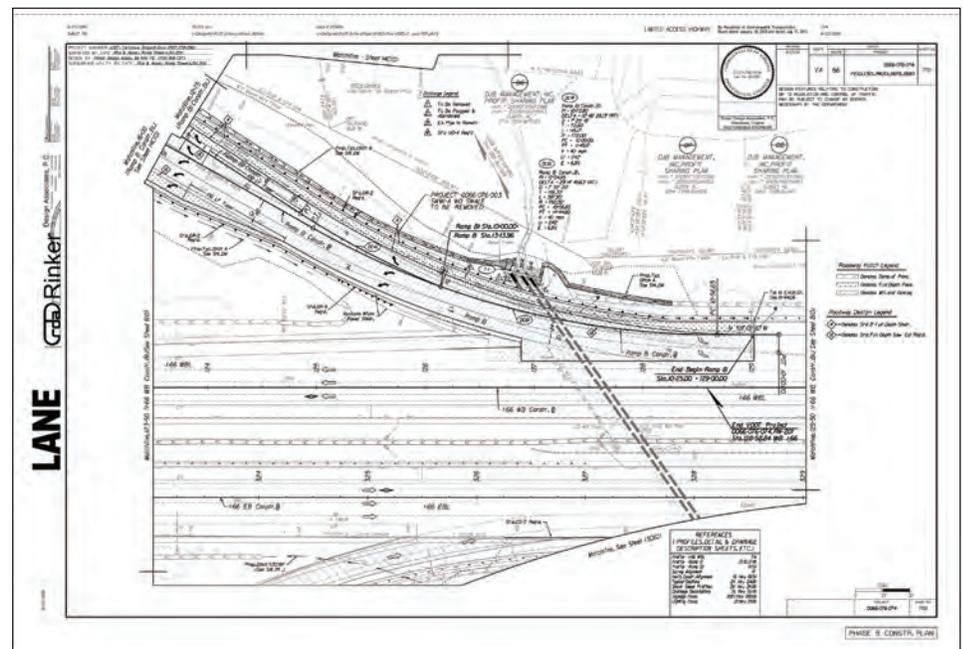
Then, there were the tomatoes. As the completion date neared and the team was engaged in punch list items, signal timing operations and cleanup, a tomato truck traveling from Central America crashed under the bridge and ignited. As the tomatoes roasted under the new bridge, there were

concerns for the structural integrity of the new piers and substructure. Ultimately, forensics showed the damage was limited to the surface and did not impact completion.

Ambitious, Memorable, Inspirational

The team's impressive use of Design-Build Done Right™ principles delivered not just

any solution but the right solution through integration and collaboration. Millions of travelers pass through a safer and smoother I-66/Route 15 interchange thanks to the design-build team's ambitious work. The community has offered rave reviews (even from skeptics) as the functionality of the interchange proved to be more effective than they could have imagined. 🍅





SNAPSHOT

CLIENT/OWNER:

▶ Washington State University (WSU)

**DESIGN-BUILDER, PROJECT MANAGER,
GENERAL CONTRACTOR:**

▶ Absher Construction Company

ARCHITECT

▶ GGLO

ENGINEER

▶ PCS Structural Solutions

SPECIALTY CONTRACTOR

▶ Apollo Mechanical

SPECIALTY CONSULTANT

▶ Mimar Studio

KEY SUBCONTRACTOR

▶ Cobra Roofing

DURATION OF CONSTRUCTION

▶ 17 months

PROJECT COST:

▶ \$ 12,636,325

Elson S. Floyd Cultural Center – Washington State University

There is plenty to admire about the design of the Elson S. Floyd Cultural Center, one of the newest facilities at Washington State University. The center achieved LEED Gold certification—surpassing the goal of LEED Silver certification—and its placement at the entry of Washington State’s main campus in Pullman reinforced its prominence in the local community. But there’s a lot more to this facility than meets the eye and that is what makes the Elson S. Floyd Cultural Center not only the winner of DBIA’s Excellence in Design-Architecture Award, but also the second-ever recipient of the DBIA Chairman’s Award for Community Impact and Social Responsibility.

“We need spaces that will help us develop programming that in turn will help students, faculty, staff and community come together and learn about each other’s culture and share the uniqueness that everybody brings to the table,” Dr. Elson S. Floyd, the late president of Washington State University, promised students in 2014. His vision was achieved in the building bearing his name, as one of the primary goals of this project was that it would be a “catalyst for social change.”

Exactng a space that spurs critical conversations and fosters a sense of cultural awareness is no easy task. For years, students at Washington State had advocated for spaces on campus that reflected who they are and the communities and cultures they come from. The Floyd Cultural Center is a huge step in this direction, providing numerous spaces and art installations intended to reflect these

cultures and communities and their stories.

Some of these features include the Hesutin Waterfall, actually a bronze sculpture that is an interpretive installation telling the story of land appropriation from the Nez Perce Tribe (Niimiipu), whose ancestral land spans Washington, Oregon and Idaho. The Meditation Pavilion contains sacred earth from Nez Perce land and has a design featuring Nez Perce cradleboard beading patterns.

The sunken Living Room serves as a central gathering space and is surrounded by four knowledge rooms representing four important communities at Washington State—Native American, Latino/Latina, Asian/Pacific Islander

and African-American. The Eyes of the Elders art installation uses the Nez Perce concept of honoring the wisdom of ancestors, here conceptualized as a trail of 66 single eyes representing numerous cultural leaders—from Chief Joseph of the Nez Perce to Martin Luther King, Jr.—which leads visitors to the Meditation Pavilion.

This project’s commitment to honoring its past, while serving its present, is clear and intentional, embodying the kind of social change that can be spurred by creating these projects. 

Excellence in Design-Architecture

Placed at the main entry of the Washington State campus, this facility was designed to be a campus beacon of cultural inclusion and diversity. The undulating shape of the building was inspired by the longhouses and pit houses of the Nez Perce Tribe and the roof was designed to mirror the rolling hills of the Palouse region in Washington state—resulting in a radiused structural system that contains no straight lines or right angles. Due to the complex nature of this design, the entire project had to be designed and built through a 3D model that ensured detailed accuracy before construction began. As a result of this model’s usage, the roof was completed with zero rework, which helped the project meet the strict schedule demand before winter time.

The systems-based approach taken on this project allowed the team to achieve—and in some cases even exceed—their designated goals. The design-build team also significantly reduced indoor water use, meeting two of the regional priority credits. In addition, the goals to avoid light pollution at all costs and to put the facility on a previously developed site—resulting in reuse of land rather than further expansion—were met. Built to serve all mobility and age levels and offer easy visual access to visitors, the Washington State community expects that the center will be a hub of activity for years to come.

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SNAPSHOT

CLIENT/OWNER:

► University of California Irvine,
Design and Construction Service

DESIGN-BUILDER, PROJECT MANAGER, GENERAL CONTRACTOR:

► PCL Construction Services, Inc.

ARCHITECT

► Carrier Johnson + Culture

ENGINEER

► Critchfield Mechanical Inc

SPECIALTY CONTRACTOR

► Field Management Systems

SPECIALTY CONSULTANT

► Veneklasen and Associates

KEY SUBCONTRACTOR

► Anderson Howard

DURATION OF CONSTRUCTION

► 14 months

PROJECT COST:

► \$6,556,546

University of California Irvine – Transmission Electron Microscope Facility

The Transmission Electron Microscope (TEM) Facility at the University of California Irvine (UCI) was designed to house the most sensitive TEMs available at the time and be adaptable as new equipment was developed. UCI had a TEM from the 1980s on campus, but its functions were limited, resulting in faculty either not using it or going elsewhere for their TEM needs. UCI's faculty expects that the research they will be able to do using this new facility will result in breakthroughs in a range of sciences.

Much of the work required breaking new ground in the field—creating the “ideal” environment for a sophisticated electromagnetic design had never been achieved before. In one instance, the design-build team had to work with UCI to establish criteria for the Minus K® anti-vibration platform, since a platform of this magnitude had never been built before. Close coordination among the team, UCI stakeholders and vendors was a must, since the goal was to achieve an unprecedented level of electromagnetic interference (EMI) and vibration specs, as well as fulfilling end users' requirements. And all this had to be achieved in a building that was

fully occupied and located near the center of campus.

Regular design review meetings—beginning in the design phase and continuing through construction and into commissioning—were an important factor in achieving UCI's goals. The design-build team met with stakeholders to confirm design direction and obtain technical feedback as the design was refined. Microscope manufacturer representatives, UCI Design and Construction Department staff, UCI faculty and other end users met to focus on technical performance criteria. The manufacturer representatives advised on infrastructure and installation guidelines, while end users advocated for their requests. These meetings tracked the design for compliance with the project's performance goals and allowed for adjustments and further refinement.

Using phased turnovers, which allowed for vendor installation of equipment during construction, was a key factor in the project's success. End users were able to begin testing the equipment as it was installed, allowing them to evaluate how various complex instruments interacted—difficult to predict prior

to installation—and identify improvements that were not part of the original design.

The project was originally awarded as a two-phase project with a turnover of 90 days and completion at 180 days. However, soon after award the Owner, UCI, exercised three RFP alternates that increased the contract amount and extended the schedule by 112 days, thus creating a three-phase project. After substantial work, but before final completion, a number of end user enhancements were added—to improve controls' interface and strengthen infrastructure. This created, essentially, a fourth phase. All requests were fulfilled and the project was completed within the revised time and schedule.

This project set a new standard in the design and construction of this advanced technology. It was demanding, requiring the team to develop new techniques and establish criteria for a successful TEM facility, especially in an earthquake-prone area. As a result, it won not only the National Award of Merit and National Award of Excellence in the Industrial, Process and/or Research Facilities, but also the Excellence in Design—Engineering Award from DBIA in 2018. 🏆



SNAPSHOT

CLIENT/OWNER:

▶ Washington State University

**DESIGN-BUILDER, PROJECT MANAGER,
GENERAL CONTRACTOR:**

▶ Clark Construction Group

ARCHITECT:

▶ ZGF Architects

ENGINEER:

▶ AEI

SPECIALTY CONTRACTOR:

▶ Apollo

SPECIALTY CONSULTANT:

▶ Vantage Technology Consulting Group

DURATION OF CONSTRUCTION:

▶ 18 months

PROJECT COST:

▶ \$43,000,000

The Spark at Washington State University

The Spark, on Washington State University's Pullman campus, is a new digital classroom building designed to serve as an academic innovation hub as well as a revolutionary teaching and learning space. An 83,000-square-foot building, The Spark acts as a gateway between the southern part of the campus and its center, surrounded by other university buildings. It includes a 250-seat innovative circular learning hall (called the Active Learning Hall), a faculty innovation studio and event space. The University wanted this new building to not only accommodate projected student population growth but current and future technological advances.

Choosing design-build was still fairly new to the University—they had successfully executed some projects through the method in the past but wanted the flexibility and collaboration that design-build offers. They partnered with OAC Services during the procurement process to facilitate the engagement of a wide range of stakeholders to set out their needs and wishes at the beginning, forestalling changes late in the design and construction phases that would add to the schedule and budget.

As DBIA's Best Practices recommend, the owner selected a short list from the RFQ responders, then considered the team members, key personnel and early conceptual designs. The University held proprietary meetings with qualified teams—encouraging open, transparent communication and an opportunity to consider potential designs, consider budget and schedule and make informed decisions.

Teamwork was an important factor in the project's success. During the design validation phase, the University asked for assistance in reducing the cost. In response, the design-build team developed a matrix of base building elements—those that were needed—and betterments, along with costs. The team worked with the University to support their decision-making, advising them on which betterments worked together to increase the total benefit. Also, during the design and validation period of the Digital Classroom project, the University released new construction standards that revised what the design—and the contract—were based; the team worked with stakeholders to revise the design to meet these new standards. The design-build team

also worked with the University to include additional elements—a Starbucks and a rooftop terrace—within the budget and schedule.

Team leaders also considered safety—of both team members and University personnel and students—who were separated from the construction site by fences. During construction, the team held daily meetings to map out planned activities and work out any possible safety issues. The team was the first in the University's history to approach the Pullman Fire Department to ensure that they were prepared in the event of an emergency on the jobsite. Working together, the team and the Fire Department set up training, including simulations.

In the end, the team was able to turn over the building three days in advance and, despite including \$750,000 in building design enhancements, the project came in \$127,000 under budget. The success of The Spark, the University's high praise for the team and its collaboration led to the project and team winning multiple awards, including: DBIA's National Award of Merit, Educational Facilities; and Excellence in Process and Excellence in Teaming. 🌱



SNAPSHOT

CLIENT/OWNER:

▶ Trinity County DOT

**DESIGN-BUILDER, PROJECT
MANAGER, GENERAL CONTRACTOR:**

▶ R N R Construction, Inc.

ENGINEER:

▶ Dokken Engineering

SPECIALTY CONTRACTOR:

▶ Verux

SPECIALTY CONSULTANT:

▶ Geocon Consultants, Inc.

DURATION OF CONSTRUCTION:

▶ 4 months

PROJECT COST:

▶ \$6,667,500



Trinity County HBP Bridges Design-Build

Trinity County is one of the smallest counties in the state of California. As one of three counties in the state without an incorporated city, Trinity is mostly made up of mountainous terrain and rugged landscape and, as it turned out, a few bridges that needed fixing. The result was the Trinity County HBP Bridges Design-Build – the 2018 Excellence in Small Projects Award winner.

A bridge pilot program with the Central Federal Lands Highway Division (CFLHD), this project consisted of five bridges that were identified by the Federal Highway Administration as “structurally deficient or structurally obsolete” which required them to be replaced. Replacing five bridges which were all hours away from each other was no easy task, but innovation and thinking ahead helped this project be completed on-time and \$800,000 under budget. Three-dimensional models of each bridge were created in the proposal stage, showing a step-by-step reconstruction of each bridge.

The CFLHD was also looking to use Every Day Counts (EDC) methods of construction. EDC focuses on Accelerated Bridge Construction technologies and using those technologies to reduce onsite construction. The planning, design and execution of EDC methods allowed for innovative ideas in the design of the project to occur, greatly reducing the time spent onsite to put together the raw materials for these bridges which were many hours apart from each other.

The design-build team selected a composite precast/prefabricated design for four of the five bridges, reducing the need to bring raw materials on-site and enabling a bridge to be built in as little as two weeks. Careful attention was paid to the surrounding citizens of this rural community as well as the environmental impact of the project. In addition to several key sustainable solutions, the team installed erosion and sediment control measures to prevent creek pollution. The replacement bridges are designed to current seismic and structural

design standards and include modern bridge and guard railings on both approaches.

This project achieved all of the Owner’s project goals, which included using an innovative process and the acceptance of community, contractor and consultants. The thorough research done beforehand and the trust of the design-build team, not only with each other but with the community, resulted in minimal impact for property owners in the surrounding areas.

Trinity County did a lot with a little, replacing bridges that were in sore need of it and doing it in a way that enabled acquisition, design and construction to be done all within period of one year. This project refutes the false notion that design-build project delivery is only good for large projects and its ability to come in 10 percent under budget in a four-month construction period proves what’s possible, even for a small project, when design-build is done the right way—through teamwork, innovation and thoughtful planning. 

2018

DESIGN-BUILD

Excellence and Merit Award Winners

AVIATION

Merit Award Winners

- ▶ Alternate Utility Facility at Seattle-Tacoma International Airport
Seatac, Washington
- ▶ Austin-Bergstrom International Airport (ABIA) Terminal East Infill Project
Austin, Texas

CIVIC/ASSEMBLY

Excellence Award Winner

- ▶ Mayne Events Center and Fire Museum
Bellflower, California

Merit Award Winners

- ▶ Alpine Library
Alpine, California
- ▶ Skyline Hills Branch Library
San Diego, California

COMMERCIAL BUILDINGS

Merit Award Winner

- ▶ HAPO Mill Plain
Vancouver, Washington

EDUCATIONAL FACILITIES

Excellence Winner

- ▶ University Extension Classroom
Building University of California
Irvine, California

Merit Award Winners

- ▶ Solano Community College Biotechnology and Science Building
Vacaville, California
- ▶ The Spark at Washington State University
Pullman, Washington
- ▶ WSU Elson S. Floyd Cultural Center
Pullman, Washington

FEDERAL, STATE, COUNTY, MUNICIPAL

Excellence Winner

- ▶ East County Hall of Justice
Dublin, California

Merit Award Winners

- ▶ Campus Kilpatrick
Malibu, California
- ▶ DBH Crisis Residential Treatment Facility
San Bernardino, California

HEALTHCARE FACILITIES

Excellence Winner

- ▶ Texas Health Recovery & Wellness Center
Mansfield, Texas

Merit Award Winners

- ▶ The Family Health Pavilion at Lehigh Valley Hospital Muhlenberg
Bethlehem, Pennsylvania
- ▶ Ventura County Medical Center Hospital Replacement Wing
Ventura, California

INDUSTRIAL, PROCESS AND/OR RESEARCH FACILITIES

Excellence Winner

- ▶ University of California Irvine—Transmission Electron Microscope Facility
Irvine, California

Merit Award Winners

- ▶ AB Jax Line 7
Jacksonville, Florida
- ▶ PepsiCo Worldwide Flavors Factory
Singapore

OFFICE BUILDINGS

Excellence Winner

- ▶ Riata Vista Corporate Campus
Austin, Texas

Merit Award Winners

- ▶ American Academy of Pediatrics Headquarters
Itasca, Illinois

REHABILITATION, RENOVATION AND/OR RESTORATION

Excellence Winner

- ▶ Main Street Bridge (Duval County) Historical Renovation Project (SR 5) Emergency Design-Build
Jacksonville, Florida

Merit Award Winners

- ▶ Intelligence Community Campus – Erskine Hall Cafeteria
Bethesda, Maryland

TRANSPORTATION (OTHER THAN AVIATION)

Excellence Winner

- ▶ I-66 / Route 15 Interchange Reconstruction Design-Build Project
Town of Haymarket Prince William County, Virginia

Merit Award Winners

- ▶ I-64 Capacity Improvements Segment I
Newport News, Virginia
- ▶ Trinity County HBP Bridges Design-Build
Trinity County, California

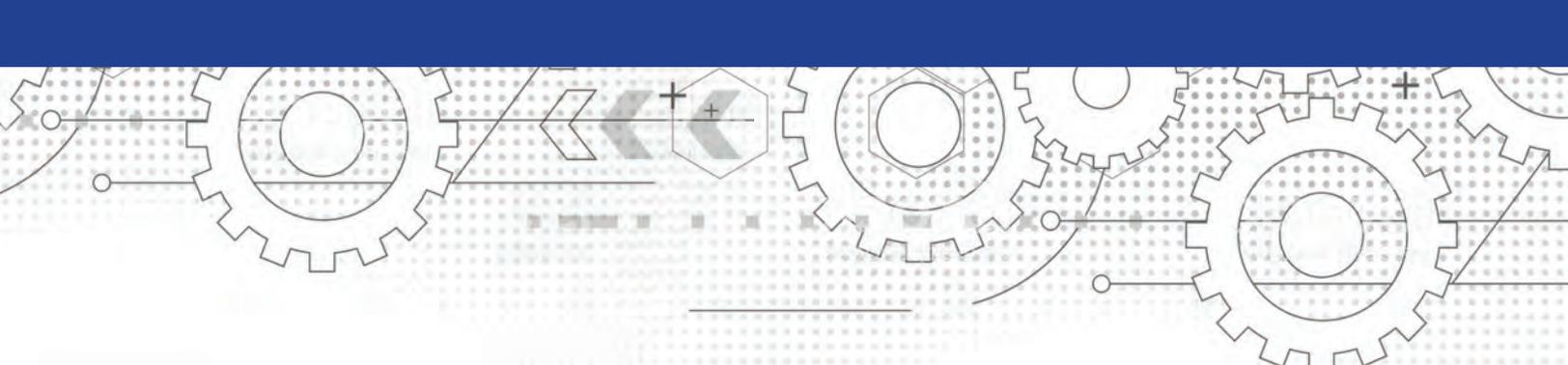
WATER/WASTEWATER

Excellence Winner

- ▶ RM Clayton WRC Headworks Improvements Design-Build
Atlanta, Georgia

Merit Award Winners

- ▶ Bush Beans Process Water Reclamation Facility
Dandridge, Tennessee
- ▶ Ion Exchange Resin Plant and East Water Treatment Plant Improvements
City of Boynton Beach, Florida



2018

DBIA Distinguished Leadership Award Winners

As the design-build industry continues to thrive across all sectors, regions and project types, it's important that we honor the leaders in our industry who have helped position design-build as the preferred delivery method for all types of projects. DBIA is proud to recognize these 2018 Distinguished Design-Build Leaders for their work educating, advocating and helping expand the use of design-build.



Owner

JAMES WOLFE, P.E.
**District Six Secretary,
Florida Department of Transportation**

WINNER

Jim Wolfe has served as District Secretary to both the FDOT District Four and Six regions and has been an effective advocate for design-build on many important Florida projects. Whether it's the award-winning Veterans Memorial Bridge, the \$1.3B I-595 Express P3 or the multi-phased I-75 Express, Jim has shown time and again the effectiveness of Design-Build Done Right™ principles in action. Jim has been a strong advocate for DBIA's Best Practices and has co-presented on this topic at DBIA's Design-Build for Transportation Conference. Jim's work embraces the triple-bottom-line results possible with design-build. Most recently, FDOT's design-build project along SR 836/I-395/I-95 included many community elements and will help reclaim pedestrian access beneath the elevated interstate. The project includes a signature bridge and improved mobility, safety and other enhancements. Jim's leadership on this project and many others illustrates why we say, "Design-build is only as successful as the owners who implement it." Florida continues to succeed thanks to design-build leaders like Jim.

WINNER

Practitioner

BLAIN GROVER, DBIA, LEED
Sr. Project Manager, Fortis Construction



Blain Grover has demonstrated continued leadership in expanding design-build delivery in the Oregon market and within his organization, Fortis Construction. Blain developed Fortis' "Design-Build Playbook" deploying a unique delivery of design-build customized to his organization's business model and culture. This platform is providing clients an A+ level of design-build delivery using Design-Build Done Right™ principles. Working with regional owners such as the Oregon Military Department (OMD), Nike, Inc. and Portland Public Schools (to name a few), Blain has worked tirelessly educating clients about the benefits of design-build. He championed design-build for the delivery of OMD's new state of the art Joint Force Headquarters in Salem, Oregon. This project has become a model for other state agencies in design-build delivery. Currently, Blain's Design-Build Done Right™ work is being demonstrated leading a \$10M design-build middle school project for Portland Public Schools, which is one of Oregon's first public K-12 design-build projects. There's no denying Blain's dedication to expand design-build in the Pacific Northwest and proving to clients how it can deliver better projects.

WINNER

University Faculty

SHARAREH (SHERRI) KERMANSHACHI
Ph.D., P.E., PMP, LEED AP, ENV SP, CMIT
**Assistant Professor in the Department of Civil Engineering
The University of Texas at Arlington**

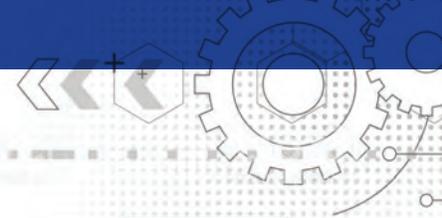
Dr. Kermanshachi's commitment to design-build is demonstrated through her scholarship, her student mentoring and active engagement with DBIA's Southwest Region. In addition to serving as the Director of UTA's Construction Research Lab, supervising multiple Ph.D. and master's students, Sherri founded the UTA's DBIA student chapter and currently serves as its faculty advisor. She frequently meets with DBIA members in the Dallas/Fort Worth area and invites them to her undergraduate and graduate classes. She's a DBIA Educator Workshop participant and is coaching a team of undergraduate students in preparation for DBIA's National Design-Build Student Competition. She's also scheduled to take the DBIA certification exam this year.

Dr. Kermanshachi has experience as a design-build project manager for commercial design-build projects and investigated phase-based performance indicators in design-build projects for her doctoral dissertation. She has published more than 60 books, journal articles, conference papers and technical reports, and received more than a dozen international and national awards including the Albert Nelson Marquis Lifetime Achievement Award, ASCE Professional Service Award, ASCE Excellence in Teaching Award and Climate Award.



2018

DBIA Distinguished Leadership Award Winners



WINNER

Young Professional

JAMIE ATHENOUR, DBIA, LEED AP, BD+C
Design Manager, Hensel Phelps Construction Co.



Jamie Athenour is exactly the type of engaged young professional our industry needs. As an active member of the DBIA Western Pacific Region/Bay Area Chapter and an advocate for the design-build delivery method, she has made it her mission to spread the word about the value of design-build far and wide. Jamie has also established a DBIA Young Professionals recruitment program at Hensel Phelps Construction and serves as the Membership Chair for DBIA's Western Pacific Region.

Jamie's passion for promoting design-build principles among her peers is evident in her work as a Design Manager for Hensel Phelps, where she helps her teams navigate the design-build process from the earliest stages of her projects. She is currently the Design Manager for a \$95 million design-build project and was previously involved with the successful SFO Replacement Airport Traffic Control Tower project. Jamie has also participated in a panel at the Women in Construction conference, discussing the successful use of progressive design-build as a delivery method on challenging public projects. Jamie's future leadership aspirations include a nomination to the DBIA WPR Board in 2018—and we are thankful for that!

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AMERICAN ACADEMY OF PEDIATRICS

Itasca, IL

2018 National Design-Build Merit Award - Office Buildings



Putting Design-Build Students to the Test

BY NATHAN SMITH

In a competitive job market, college students do all they can to stand out from their peers. There are plenty of opportunities for students to showcase their skills and talents on campus, but when it comes to real-world opportunities, the chances can be few. Between DBIA's student chapters and the National Design-Build Student Competition, DBIA strives to do its part in educating the design-builders of tomorrow by introducing to them the ideas and concepts that could make the difference when applying for jobs or bidding for projects.

There are currently 25 DBIA student chapters around the country, a number that grows every year. These student chapters help students have a leg up in knowledge and expertise in design-build delivery, giving them an edge once they enter the professional world. DBIA's National Design-Build Student Competition has provided a real-world opportunity to young design-builders for many years, providing an unparalleled opportunity for students to meet and impress design-build industry leaders one-on-one.

The chance to present in front of industry professionals is one of the more significant advantages of the competition—it's an experience many students don't actually encounter until they're young professionals in the field.

"Coming to conferences [as a student] is pretty scary, but every time you do it, especially when you have an opportunity to participate in it, you're just reminded of why it's worth doing," said Kelli Young, a member of the



DBIA Design-Build Student Competition teams present before a panel of industry leaders.

Washington State University team that won the student competition in 2017.

Last year's competition was one of the closest in recent memory, with only three points separating the first- and third-place teams. That tight race is indicative of the quality teams and work that this competition has demonstrated since its inception.

Dennis Ashley, the Student Competition Committee chair and the founder of the competition itself, believes the competition provides a real-world experience.

"Students have indicated that competing in this competition really provides them with a clearer understanding of what is expected in the industry in responding to the RFQ and the RFP," said Ashley, "as well as working together as a team."

The competition has a big impact not

only because of what the final teams experience, but the ripple effect that happens when they return to campus.

"I think it's important, from an academic perspective, to remember that these students certainly learn a lot but then they go back and work with their peers and their programs, and those students are going to learn a lot from the experience," said Washington State professor Dave Gunderson, who was the coach of Washington State's team at last year's competition.

With a record 36 teams entering this year's competition, it should prove to be another exciting year for giving students an unmatched real-world experience in the design-build industry. The 2018 Design-Build Student Competition winners will be profiled in the first issue of next year's IQ Magazine. [🔗](#)



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Design-Build Projects Database Growing

Awards season is here at DBIA. Honoring the year's best design-build projects provides recognition for the many successful projects across all sectors nationwide while also sharing these projects with a wider audience as DBIA continues to promote Design-Build Done Right™. While this year's project winners vary in size and sector, they all have one new thing in common this year: each project winner has a home in our new-and-improved DBIA Projects Database.

The Projects Database is home to

a growing number of design-build projects and provides one-stop shopping for those searching for successful design-build projects across all sizes and sectors. The detailed search feature of the Projects Database allows interested design-builders and Owners to find projects based on several types of criteria, including the Structural Agreement and Procurement Method. This information allows potential users of design-build to find projects that are similar in scope, providing ideas and inspiration plus team listings for a myriad of design-build projects.

Another benefit of DBIA's new

Design-Build Projects Database is its connection to the design-build project/team awards submission process. By linking the Projects Database to the DBIA national awards process, teams only have to enter their project information one time to gain access to both the database and DBIA's awards competition if they choose.

The Design-Build Projects Database provides the nation's most comprehensive source of design-build projects and showcases the tremendous success design-build is delivering in projects of all types. Find out more and add your project to the database at dbia.org/projects-database. 

WGI was here

WGI completed this **\$32-million**
Design-Build project on the
Big John Monahan Bridge
104 days ahead of schedule,
saving the State of Florida
nearly \$10 million.



DBIA 2019 Education Schedule

Jan 15–17	Certification Workshop <i>Roseville, CA</i>
Jan 22	Conceptual Estimating <i>Spokane, WA</i>
Jan 23–25	Certification Workshop <i>Canton, OH</i>
Jan 29–31	Certification Workshop <i>Richmond, VA</i>
Feb 6–8	Certification Workshop <i>Kansas City, MO</i>
Feb 11–13	Certification Workshop <i>Albuquerque, NM</i>
Feb 12	Design Management Fundamentals <i>Pittsburgh, PA</i>
Feb 19–21	Certification Workshop <i>Portland, OR</i>
Feb 26–28	Certification Workshop <i>Lakewood, CO</i>
Feb 28	Conceptual Estimating <i>Rochester, NY</i>
Mar 6–8	Certification Workshop <i>Orlando, FL</i>
Mar 11–13	Certification Workshop <i>San Diego, CA</i>
Mar 12	Design Management Fundamentals <i>Spokane, WA</i>
Mar 14	Conceptual Estimating <i>St. Paul, MN</i>
Mar 18–20	Certification Workshop <i>Honolulu, HI</i>
Mar 25	BIM Execution Planning <i>Nashville, TN</i>
Mar 27–29	Certification Workshop <i>Farmingdale, NY</i>
Apr 15–17	Certification Workshop <i>Laurel, MD</i>
Apr 16–18	Certification Workshop <i>Seattle, WA</i>
Apr 19	Conceptual Estimating <i>Honolulu, HI</i>
May 3	Developing an Acquisition Strategy <i>Ft. Lauderdale, FL</i>
May 7	Conceptual Estimating <i>Virginia Beach, VA</i>
May 8–10	Certification Workshop <i>Atlanta, GA</i>
May 14–16	Certification Workshop <i>Chicago, IL</i>
May 21–23	Certification Workshop <i>Spokane, WA</i>
June 3–5	Certification Workshop <i>Boston, MA</i>

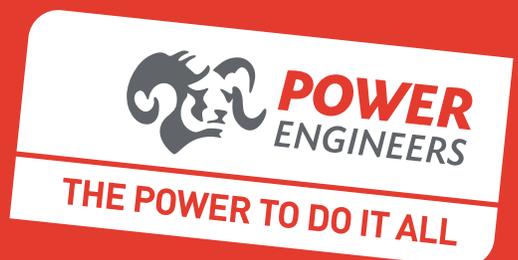
June 5–7	Certification Workshop <i>Dallas, TX</i>
June 10–12	Certification Workshop <i>Milpitas, CA</i>
June 26	Developing an Acquisition Strategy <i>New York, NY</i>
July 10–12	Certification Workshop <i>Fairfax, VA</i>
July 11	Design Management Fundamentals <i>Honolulu, HI</i>
Aug 5–7	Certification Workshop <i>Nashville, TN</i>
Aug 16	BIM Execution Planning <i>San Jose, CA</i>
Aug 20–22	Certification Workshop <i>Sacramento, CA</i>
Sept 10–12	Certification Workshop <i>Virginia Beach, VA</i>
Sept 12	Developing an Acquisition Strategy <i>Honolulu, HI</i>
Sept 16	Developing an Acquisition Strategy <i>San Antonio, TX</i>
Sept 16–18	Certification Workshop <i>San Diego, CA</i>
Sept 18–20	Certification Workshop <i>New York, NY</i>
Sept 25	Design Management Fundamentals <i>Thornton, CO</i>
Sept 27	BIM Execution Planning <i>Pasadena, CA</i>
Oct 2–4	Certification Workshop <i>Des Moines, IA</i>
Oct 9–11	Certification Workshop <i>State College, PA</i>
Oct 17	Design Management Fundamentals <i>Laurel, MD</i>
Oct 21–23	Certification Workshop <i>Charlotte, NC</i>
Oct 23–25	Certification Workshop <i>Indianapolis, IN</i>
Nov 13–15	Certification Workshop <i>Miami, FL</i>
Nov 19–21	Certification Workshop <i>Seattle, WA</i>
Dec 4	Design Management Fundamentals <i>New York, NY</i>
Dec 6	Developing an Acquisition Strategy <i>Atlanta, GA</i>
Dec 11–13	Certification Workshop <i>Washington, DC</i>

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